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The green cities: An exploration into the twin concepts of urban sustainability and conservation psychology

Emily P. Goodman
Macalester College, emilypgoodman@gmail.com

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Abstract

The increasingly urban world population presents an interesting obstacle to a planet that finds itself in what is being termed a "global crisis." In this paper, the challenges of urban sustainability are explored. This exploration is complemented by a survey of the literature in conservation psychology, with a particular focus on theories of behavior change. Case studies of sustainability organizations in the Twin Cities (of Minnesota) illustrate how these academic theories are applied in the field. The conclusion of the paper highlights the most salient messages that can be derived from analysis of the literature and case studies.

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Foreword

It all starts with Dave Lanegran. I took his class, Geography of World Urbanization, the spring of my sophomore year at Macalester College. It was my first geography course. Before it, I knew little about the field and even less about cities. I did not realize that urban studies was not just about cities per se, but about all of us: our civilization past, present, and future. I came to understand the broader implications of cities as he took our class through the development of the global urban system. I was particularly interested in his description of how cities work, of how the needs of the urban dwellers are met by drawing off of resources from the hinterland. In my mind, this seemed like a problem for a variety of reasons. Most basically, it did not seem like a sustainable situation. Cities use the resources of the hinterland and grow, and as they grow, they require more resources and more hinterland. I found that Ian Mott, although a non-academic blogger without a place in my official manuscript, explained it well: "[Cities] gather exclusive economic and social outcomes to themselves while the ecological outcomes, and their costs, are apportioned almost exclusively to areas outside their cities." Dave was the one who got me thinking about cities.

I continued to think about cities the following spring, when I was studying abroad in Thailand. Although I spent most of my time in decidedly rural places, the effects of urbanization were everywhere. Thailand is dominated by Bangkok, which is a primate city, meaning that it is a financial, political, and population center of the country and significantly larger than any other city located therein. Bangkok *is* Thailand in a lot of

ways. Thailand is always proud to remind its visitors that it was never colonized by the west. The truth is, however, it colonized itself. The central Thais, the Bangkok Thais, are responsible for what is known as the Thai-ification of Thailand. What is today known as Thailand actually comprises of very diverse groups of ethnicities, languages, and cultures. Thai-ification refers to the systematic discrimination and social manipulation that has manufactured the "Thai" identity and made it the ideal.

So it was that Bangkok's impact resonated all the way through the eight hour bumpy bus ride to where we were based in my program, in Isaan, the northeast region of Thailand. Isaan is considered to be the most rural, "hick" region of the nation and it lives in the shadow of Bangkok. Some of this influence was cultural, as I witnessed the adoration of the king and obsession of lighter skin of the Bangkok Thais. Some of it was economic. Literally every family in a given community had at least one family member working in Bangkok. They explained to me that they couldn't just make enough to support themselves on their farms or in other, closer urban areas. Bangkok was where the big bucks were. It is a given that in some point in an Isaan person's life, they will spend several years, usually in their 20s, in the capital city to make money and bring back for their family. Indeed, in the little time I spend in Bangkok I actually ran into a lot of people speaking the dialect I had become so familiar with. The street vendors in Bangkok are almost all from Isaan.

Although this dysfunctional relationship was obvious to me, my program through the Council of International Educational Exchange also helped me to see other issues related

to urbanization, such as those dealing with food and water, which further fueled my interest in urbanization. My program also centered around what they call "people to people" education, whereby we learned through having discussions with each other, villagers, NGOs, government officials and others. It is because of this experience that I came to understand that if you have a question about something, it is not only ideal to go directly to the source, but it is possible to do so.

For my final project there, I ended up writing a rather lengthy paper on sustainable cities. The paper was strongly influenced by a number of Eastern attitudes about development and progress, some of which are encapsulated by this quote from the Dalai Lama:

> Modern society, with all its benefits and defects has emerged within the context of innumerable causes and conditions. To suppose that merely by abandoning material progress we could overcome all our problems would be shortsighted. That would be to ignore their underlying causes. Besides, there is still much in the modern world to be optimistic about (Lama, 2005, p. 13).

It was through considering these eastern ideas focusing on accepting what is and envisioning a better future that my hope for a better type of development was fueled. The paper was a good exercise for me; up until that point it was the longest paper I had written and it allowed me to define some of the thoughts that had been floating around in my head amorphously for a while. Through the process of writing the following paper, I was able provide a distinctly academic complement to the more spiritual paper I had drafted abroad.

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With the 2007 Nobel Peace Prize award, the Intergovernmental Panel on Climate Change and Albert Arnold (Al) Gore, Jr. became the first recipients whose work in environmental issues garnered such recognition. Gore's documentary film, *An Inconvenient Truth,* provided some chilling statistics regarding climate change: The number of Category 4 and 5 hurricanes has almost doubled in the last 30 years, malaria has spread to higher altitudes in places like the Columbian Andes, the flow of ice from glaciers in Greenland has more than doubled over the past decade, and at least 279 species of plants and animals are already responding to global warming by moving closer to the poles. The projected consequences are more distressing still: Deaths from global warming will double to 300,000 in 25 years, global sea levels could rise by more than 20 feet with the loss of shelf ice, heat waves will be more frequent and more intense, droughts and wildfires will occur more often, the Arctic Ocean could be ice free by summer 2050, and more than a million species worldwide could be driven to extinction by 2050 (Gore, 2007).

The warnings of Gore and others have been punctuated by current events including a release of a National Aeronautics and Space Administration report on the thinning Greenland ice sheet (Steitz, 2000) and the 2007 drought in the U. S. South that left Atlanta, Georgia, within months of completely running out of water. In the winter of 2007/2008, unusual blizzards and low temperatures in China and the United States were

blamed on global warming (Patel, 2008). Winter tornadoes in the United States, a virtually unheard of phenomenon, killed dozens of people in that same year and were also blamed on global warming (Shapley, 2008). In 2005, the United Nations Environment Programme announced the first of what are projected to be millions of so-called "climate change refugees," forced to move due to rising sea levels and changing weather patterns (United Nations Environment Programme, 2005). Indeed, environmental advocates compel more and more of the greater public's attention as their warnings about the health of the planet are confirmed and compounded.

These environmental advocates have also found an increasingly receptive audience in psychologists (Price, 2008). For decades, psychologists have asserted the importance of their field in ameliorating environmental problems. More than a quarter century ago, Geller, Winett, and Everett (1982) implored their colleagues to heed the call to respond to environmental problems with social science techniques, rather than rely on technology to win the day. In more contemporary publications, psychologists seem to be speaking to an audience already convinced of the importance of the social sciences. Invoking the spirit of these myriad assertions (e.g., Bonnes & Bonaiuto, 2002; Uzzel et al., 2002; Gardener & Stern, 1996; Oskamp,1995), Oskamp (2000b) wrote, "There is a crucial role for the social sciences in these problems because they are all caused by human behavior, and they can all be reversed by human behavior" (p. 375).

There have been particular booms in articles concerning environmental issues and their relationship to psychology in years following widely broadcast recognition of

environmental concerns. Just three years after the 1997 Kyoto Protocol – which addresses greenhouse gas concentrations – both the *Journal of Social Issues* and *American Psychologist* published issues focusing on environmentalism. In 2003, there was a special issue of the *Human Ecology Review* devoted to conservation psychology. Other academic journal issues focusing on conservation psychology include: *Curator: The Museum Journal* (2004, Volume 47, Issue 3), *Environmental Education Research* (1999, Volume 5, Number 4), and *Population and Environmental Psychology Bulletin* (2001, Volume 27, Number 2). I anticipate an escalation of interest in conservation psychology following the announcement of the 2007 Nobel Peace Prize. Other journals that have interdisciplinary overlap with psychology (e.g., *Communication, Cooperation, Participation, Research and Practice for a Sustainable Future,* etc.) are already calling for more papers in the wake of the announcement.

This paper is meant to join that burgeoning family of articles, with a focus on urban sustainability, conservation psychology, and green organizations (all terms and concepts to be defined later in this paper). In this paper, I make use of case studies of sustainability organizations in the Twin Cities (of Minnesota) to illustrate how these academic theories are applied in the field.

In order to do so, I will begin by discussing the idea of "sustainable cities." Then, I will define "conservation psychology" and survey the current literature in the field. Following this literature review, I will explain the important role of organizations in (urban) sustainability. I will then describe several self-identified organizations promoting

sustainable behavior in the Twin Cities and compare their directives against the current literature in conservation psychology. These case studies can help inform both future psychological research and those working on sustainability in the field.

Sustainable Cities

The Nobel committee conferring its Peace Prize to the Intergovernmental Panel on Climate Change and Al Gore, Jr. is just one of many ways that the contemporary interest in "environmentalism" and "sustainability" is manifest. Amtrak now provides a program that allows passengers to offset the carbon emissions caused by their train travel (Carbonfung.org Foundation, 2007). Shoppers can use a Nature Conservancy, Defender of Wildlife, Bank of America Brighter Planet, or ReDirect Guide Visa credit card to contribute to the quest for global sustainability as they make their way through their local mall. Video and computer games such as Simcity Societies, Energyville, ElectroCity, and My Abode require users to consider energy and environmental concerns when constructing their virtual reality (Wigder, 2007). The fashion and lifestyle magazine *Vaniety Fair* now produces "The Green Issue" annually (Vanity Fair, 2007). To question to what degree these gestures can be likened to the indulgences of the historic Catholic Church merits another paper and our collective consideration.

On the more academic side, an organization called SustainLane ranks the top fifty American cities (by population) on sustainability. These rankings are based on 11 criteria (i.e., city commuting, metro public transit, metro congestion, air quality, tap water

quality, waste diversion, planning/land use, city innovation, affordability, energy/climate, local food/agriculture, green economy, knowledge base, LEED buildings, and natural disaster risk). A SustainLane report requires research from the United States Department of Agriculture and the Trust for Public Land, in additional to primary research (SustainLane Government, 2006). These serve to quantify the widely used and vague definition of sustainable development from the Brundtland Commission: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Rees & Roseland, 1991).

As our world becomes urban at an accelerating rate, it is particularly important to frame our discussions about sustainability around the idea of sustainable cities, as SustainLane has done. The year 2007 is the first year in history that more than half of the global population has lived in cities. The United Nations has predicted that by 2030 two thirds of the global population will live in cities (United Nations Human Settlements Programme, 2007). It is with this understanding that Whitehead (2003) wrote,

> Whether it be in terms of the ecological footprints of mega-cities or the socio-environmental injustices of urban habitats themselves…the social, economic and environmental conditions of humanity – found both within and beyond the city – are now inextricably linked to the multifaceted process of urbanization (p. 1183).

SustainLane's criteria reflect the sustainable city's parent movements (Basiago, 1996). The progenitor of the sustainable city is the garden city. Popularized in the early 20th

century by Ebenezer Howard, the garden city movement imagined a planned balance among residence, industry, and agriculture (Parsons & Schuyler, 2003). This balance is evidenced in SustainLane's criteria such as local food/agriculture and metro public transit. The second generation of the garden city was the eco-city of the 1970s, which focused on making cities more environmentally friendly (Roseland, 1997). Reflecting their environmental relationship, even today the sustainable city is sometimes interchangeably referred to as the eco-city (Platt, 2006).

However, the concept of the sustainable city is a distinct urban theory, originating in the 1990s (Basiago, 1996). The movement is similar to the eco-city movement, in that it is concerned with the environmental impact of urban areas, but

> In addition to an environmental focus, the concept of sustainability also implies a healthy economy and a sound and just community. Therefore, issues of social equity, environmental justice, and local control over the economy are also a big part of the sustainable city agenda (Brunn et al., 2003, p. 84).

Another contemporary offshoot of the sustainable city, focusing most strongly on social sustainability and particularly in geographical neighborhoods, is New Urbanism. For the purpose of this paper, however, we will frame our critique with the broader philosophy implied by the sustainable city concept.

The idea of sustainable cities seems oxymoronic (Rees, 1997). Cities are inherently parasitic, fueling the needs of urban dwellers by drawing on resources from the

hinterland, or surrounding areas (Dascher, 2002). Rees (1996) illustrates the massive land needs of a city with an example:

> Wealthy cities and countries prosper by appropriating the carrying capacity of an area vastly larger than the spaces they physically occupy. For example, the Canadian city of Vancouver had a 1991 population of 472,000 and an area of 114 km2 (11,400 hectares). With a per capita land consumption rate of 4.3 hectares, Vancouver's residents require (conservatively) two million hectares of land to support current consumption levels. However, the area of the city is only 11,400 ha. This means that the city's population uses the productive output of a land area nearly 180 times larger than its political area to maintain its consumer lifestyle. If we add the aggregate marine footprint (.7 ha/capita), the total becomes 2.4 million hectares or over 200 times the size of the city.

This visually striking example elucidates how cities overextend the carrying capacity of the land on which they are located.

Additionally, cities have a variety of characteristic problems that compromise their ability to be sustainable. These problems include: Excessive size, overcrowding, shortage of urban services, slums and squatter settlements, traffic congestion, lack of social responsibility, unemployment and underemployment, ethnic and social divisions, Westernization vs. modernization, environmental degradation, urban expansion and loss of agricultural land, urban governance, refugees and resettlement, stagnation and no growth, and consequences of global restructuring (Brunn, et al., 2003).

Those working toward sustainable urban development try to ameliorate these problems through improved land use and urban design, transportation, urban ecology and restoration, energy and materials use, environmental justice and social equity, economic development, and also green architecture and building (Wheeler & Beatley, 2004). However, even engineers and designers working to plan a sustainable city from scratch have not found unqualified success.

Dongton, located on a large island in China, is being promoted as the world's first planned sustainable city (Dyer, 2006). Set to be completed in 2010, it is designed by Arup, an engineering and design consulting company based in London. According to the publicity, Dongton residences will use one-third the energy consumed by typical houses. The energy that is consumed will be renewable. Dongton will be ecologically friendly. It will use zero energy building principles. Its transit system will have zero green house emissions. There will be no cars. Should SustainLane go global with its city rankings, Dongton will outscore any American city.

Even so, Dongton's ecological footprint will be 2.2 hectares, which is higher than the 1.9 hectares that is theoretically sustainable on a global scale. An ecological footprint indicates the amount of land a human would need to support itself and absorb its wastes (in the context of current technology; Wackernagel et al., 1999). At equilibrium, the world population will be equivalent to the amount of land divided by the ecological footprint. This projection is based on the conjecture that people will work to use all of

the land available, which is a limited commodity. A significant problem with the ecological footprint concept is that, in reality, not all land is created equal. For example, some land is very fertile whereas other land is barren desert, and this difference is not taken into account by the footprint. Moreover, most geographers do not approve of conceiving of land in terms of "global averages" as is a requisite for the ecological footprint concept. Instead, geographers are interested in studying variations in land and in recognizing the differences that are related to the aforementioned fertile fields and deserts. Nevertheless, the ecological footprint remains a useful tool for recognizing the limitations of human growth. In this case, taking note of Dongton's ecological footprint provides a framework for appreciating how the planned city falls short of its professed goal to be the world's first truly sustainable city.

But the fact that Dongton is being constructed at all speaks to an increasing understanding that the current state of cities is not sustainable. In addition to Arup, other organizations are also working to create sustainable cities. The Sustainable Cities Program (SCP) is one such organization. A joint United Nations Human Settlement Program and United Nations Environment Programme venture, the SCP works through local urban authorities and their partners to facilitate environmental planning and management (United Nations Human Settlement Program, 2007). Projects like Dongton and the creation of organizations like the SCP are important steps to rectifying the adverse environmental impact of cities. However, clearly, the methods currently employed are not sufficient to meet these goals. Achieving sustainability in the world's

increasingly massive cities will take concerted effort that the field of psychology might well inform.

Conservation Psychology

This section will provide a background on conservation psychology. To start, a definition: The subfield of conservation psychology is specifically dedicated to use "Psychological principles, theories, or methods to understand and solve issues related to human aspects of conservation" (Saunders, 2003, p.138). One significant difference between conservation psychology and many other disciplines of study within psychology is that conservation psychology is an applied field. Its primary objective is to address real-world problems, not (only) to approach the study of mind and behavior from a different perspective (Clayton & Brook, 2005).

It should be noted that conservation psychology is not synonymous with environmental psychology, which itself is another sub-discipline of psychology. Environmental psychology focuses on the psychological impact of the interaction between people and their environment.

Applications to sub-disciplines of psychology

As an applied field, conservation psychology has the benefit of being informed by a variety of psychological approaches. Some such approaches are learning and behavior,

social psychology, cognitive psychology, developmental psychology, and clinical/abnormal/health psychology.

Koger and Scott (2007) and Winter (2000) have written about the applicability of learning and behavioral approaches in conservation psychology. Since conservation psychology is geared toward actualizing change and altering destructive human behaviors (e.g., pollution, depletion of the ozone, etc.), the relationship between conservation psychology and behaviorism is intuitive (Pierce & Cheney, 2004). The idea of motivation, of how to entice people to make environmentally-friendly choices, is a central point of concern for environmentalists (see DeYoung, 2000; Kaplan, 2000; Geller, Winett, & Everett, 1982).

A behavioral analysis of choice points out some interesting phenomena. For example, the Ainslie-Rachlin principle states "reinforcement value decreases as the delay between making a choice and obtaining the reinforcer increases" (Pierce & Cheney, 2004, p. 258). This means that the value of reducing CO_2 emissions is lower than the pleasure of driving an SUV right now because the reward for reduced CO_2 emissions is delayed until so far in the future. However, behaviorists have found that if people make a commitment to a delayed reward in advance of the moment where the immediate reinforcement is offered, people will be less likely to engage in the more impulsive behavior.

Motivation for these choices can be considered in behaviorist terms. Winter (2000), in particular, explored how Skinner's operant conditioning and other theories in behavioral

psychology have been a starting point for research that is applicable to conservation psychology. She cites Geller (1980), who demonstrated that posted requests to recycle served as stimuli that set the occasion for recycling behavior. Other studies, such as Winett, et al. (1982) demonstrated that feedback, such as that from an energy meter, served as a reinforcer for decreased energy use.

Some of the empirical studies that connect learning principles to environmental issues have demonstrated the success of stimuli that precede behavior. Bator and Cialdini (2000) published an article focusing on the success of public service announcements in promoting conservationist behavior. In their article examining the perception of environmental risks, Gattig and Hendrickx (2007) recommended using public policy as a tool to encourage pro-environmental behavior. Geller, Witmer, and Tuso (1977) conducted an experiment involving the disposal of handbills distributed at grocery stores. They found that when there were instructions for disposal of the handbills, people were more likely to place the handbills in a proper waste receptacle (as opposed to littering the store with the handbills).

Interestingly, Geller, Witmer, and Tuso (1977) found that the strongest behavior-predictor turned out not to be the messages indicating proper disposal, but whether the store was already littered with handbills. This finding illuminates the potent role that social pressures may have on pro-environmental behavior and suggests the importance of social psychology perspectives in conservation psychology. Manning, Amel, and Scott (Under review) assert the importance of establishing social norms in promoting

conservation behavior, such as using reusable cloth bags for shopping. Other experiments have examined the role of social influence in environmental choices. One such experiment (Mumford, 2007) explored which messages in hotel rooms were most effective in encouraging the reuse of towels. All the messages emphasized the environmental benefits of reusing towels, but only the messages also indicating that most of the other patrons chose to reuse their towels were effective. Schultz, et al. (2007) conducted a similar experiment regarding conserving energy. In this study, notices encouraging people to use fans instead of air conditioning for cooling were most effective when the notices indicated that other people in the neighborhood were already doing so.

Winter (2000) explained the theoretical significance of social psychological approaches in conservation psychology. As with behavioral psychology, the basis for the relationship between social psychology and conservation psychology is intuitive – any change that will counter-act the destructive behavior of groups of humans must occur within groups of humans: "Environmentally impactful behaviors do not occur in isolation; social influence is an important factor" (Koger & Scott, 2007, p. 12). An appreciation of group dynamics, social context, social diffusion, social identity, and other concepts studied by social psychologists are significant for considering the ultimate scale at which conservation psychology must be applied. Oskamp (2000b) names several studies conducted by social scientists exploring sustainability issues.

Some of the theories on which these social psychologists base their studies are older than the discipline itself. For example, Aristotle (350 BCE), wrote about what has become

(among) the most-cited of social psychology concepts, the inverse relationship between personal responsibility and group size*:*

> For that which is common to the greatest number has the least care bestowed upon it. Every one thinks chiefly of his own, hardly at all of the common interest; and only when he is himself concerned as an individual. For besides other considerations, everybody is more inclined to neglect the duty which he expects another to fulfill; as in families many attendants are often less useful than a few. Each citizen will have a thousand sons who will not be his sons individually but anybody will be equally the son of anybody, and will therefore be neglected by all alike.

Aristotle's philosophies have inspired the economic theory of the tragedy of the commons, which can be used to understand (the denial of) environmental conflict (Opotow & Weiss, 2000). In the allegorical tragedy of the commons, it is best for each herder to graze his cattle on the common land as much as possible in the short term. However, if all herders do the same, the common land will be depleted, and in the long term, no one's cattle will prosper due to over-grazing and an ultimate lack of resources.

In environmental terms, the commons is our planet. Today, people are acting in ways that optimize their short-term gains, such as buying gas-guzzling sports utility vehicles to easily get from place to place or using pesticides to boost their annual crop yield. In the long term, however, if everyone uses that much gas and pesticides, there will be no more fossil fuel (and therefore no more gas) to power those vehicles and pests will become resistant to the chemicals, rendering the pesticides ineffective. In an even broader

perspective, the consequences of gas and pesticide use mean the ultimate health of the planet's ecosystem is jeopardized and all other human behaviors will be adversely affected, including our very ability to live and thrive.

The inverse relationship between personal responsibility and group size has also been studied in social psychology, most famously with respect to what is termed the bystander effect, a psychological phenomenon that gained notoriety over the Kitty Genovese case. During the half hour that Kitty Genovese was stabbed to death, none of the passersby stopped to help her (Darley & Latané, 1968). With regard to creating a sustainable environment, individuals can place the burden of responsibility on humankind at large. Opotow and Weiss (2000) describe this lack of personal responsibility in terms of another psychological concept, the diffusion of responsibility. The tragedy of the commons and the related psychological concepts of bystander effect and diffusion of responsibility are useful tools for appreciating the difficulties in encouraging pro-environmental behavior.

As a field that explores how humans process information, cognitive psychology is also easily applicable to conservation psychology. How humans process, or erroneously process, information or cues relating to the environment has implications for how they will act. Gardner and Stern (1996) write at length about humans' inability to appropriately assess environmental risks and consequences. Generally, the nature of environmental consequences (i.e., the social and temporal distance of the effects from the actions) leads humans to discount environmental risks (Gattig & Hendrickx, 2007). In response to these cognitive processing difficulties, Winter (2000) has written of the

importance of assessing and aligning public and expert attitudes about environmental problems.

Developmental psychologists can weigh in as to how an individual's time in life and past life experience can affect their interaction with the environment. For example, Evans et al. (2007) conducted a study using games to assess children's environmental attitudes and behaviors. One such game involved children indicating which of two options they preferred (e.g., playing outside vs. watching television, recycling vs. not recycling). Another game asked children to use a "worry thermometer" to indicate how they felt about certain environmental issues. The study found that the children demonstrated environmental concern and preferred pro-environmental behavior. Thompson, Aspinal, and Montarzino (2008) studied how childhood experiences affected adult's perceptions of green places – namely that those who visited parks or other green places as children were more likely to visit parks and green places as adults. This study emphasizes the significance of early life experiences on contemporary pro-environmental behavior. Louv (2005) writes about how today's youth do not seem to have these experiences in nature, and his book explores "the increasing divide between the young and the natural world" (p.2).

Clinical/abnormal/health psychologists can provide perspective on the relationship between non-conservation behavior and psychological health. For example, the idea of learned helplessness can help psychologists to understand that people may refrain from pro-environmental behavior because they perceive their actions as futile (Garder & Stern,

1996). Other clinicians focus on how non-conservation behavior can actually be harmful to an individual's psychological state. Some clinicians assert "natural and human-made disasters, disease, and pollution can produce stress and associated disorders" (Koger & Scott, p. 13). However, these ideas about psychological and environmental health being inextricable tend to be considered more relevant to environmental psychology, as it is related to the psychological significance of the interaction between people and their environment, and as such will not be further elaborated upon in this paper.

In addition to drawing on the strengths of already-existent sub-disciplines in psychology, conservation psychology itself has spawned several sub-disciplines, reflecting given psychologists' areas of research interest. Conservation psychologists have published papers on diverse issues such as environmental justice (Clayton, 2000), public policy (Bullard & Johnson, 2000), and gender differences (Zelenzy et al., 2000). For example, Clayton (2000) used a series of questionnaire studies and determined that "justice" was the preferred way of framing environmental issues. This finding has implications for the best practices to engage the public in addressing environmental concerns. Zelenzy et al. (2000) determined that females across age and nationality espoused greater environmental attitudes and behaviors than did males. They attributed this finding to gender socialization, in that females are encouraged to be more socially conscious than males. The authors believe that this understanding of the role of gender has implications for theory, action, and policy. These distinct perspectives are representative of a strength of conservation psychology -- its ability to make use of a breadth of psychological research to go into depth on specific issues of conservation.

Making Change

Although it is clear that the principles of conservation psychology have the potential to change anti-environmental behaviors, as evidenced through their relationship with cognitive and behavioral psychology, it is not clear within the field the best way to go about making such change (Hines, Hungerford, & Tomera, 1984). Speaking for some, Oskamp (2000b) stipulated that these great changes not only require modifications in people's behavior, but also in their values. People are not running in droves to buy compact florescent light bulbs or to equip their homes with geothermal heating. These modifications in behavior often require sacrifices of money and time (see Reynolds et al., 2007). In order to inspire people to take on these sacrifices, some psychologists hypothesize that people will need a greater belief to motivate their behavior. In order to make environmental change, people require "a more fundamental reassessment of basic beliefs and thinking" that transcends the immediate loss in income and time (Howard, 2000, p. 511). This approach is supported by research correlating pro-environmental attitudes and behaviors. Using Internet surveys, de Groot and Steg (2007) found support for the existence of three distinct value realms: "egoistic (i.e., values focusing on maximizing individual outcomes), a social-altruistic (i.e., values reflecting concern for the welfare of others), and a biospheric value orientation (i.e., values emphasizing the environment and biosphere)" (p. 320). De Grout and Steg believe all three of these values are important to understanding environmental behavior, as the significance of a given value is situation-dependent and can predict conservation behaviors. Schultz, et al.

(2005) conducted a questionnaire in six nations regarding environmental attitude and behavior and found a strong cross-cultural correlation, indicating that the "link between values, environmental attitudes, and environmental behaviors" can be generalized (p. 473). Berenguer (2007) further established a correlation between empathy and behavior and, moreover, demonstrated that these values could be manipulated in order to change behavior. In the experiment, empathy was induced in participants through the presentation of an image of a tree or a bird in a somehow corrupted environment (e.g., a dead bird on an oil-covered beach) and the explicit instruction to imagine how the natural object felt (or, in the control group, the instruction to remain as detached as possible). The participants were then asked to fill out a budget for an organization, with the option to allocate funds to environmental causes. Those participants who were in the "empathy" condition allocated more funds to environmental causes. The author concluded that the induced value-change prompted the donations. These and other studies (e.g., Grunert & Juhl, 1995; Nordlund & Garvill, 2002; Schultz & Zelezny, 2003; Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Tankha, 1998, all cited in Schultz et al., 2005) provide compelling evidence that there is a value-behavior connection.

On the other hand, the findings of Poortinga, Steg, and Vlek (2004) demonstrated that "Attitudinal variables, such as values, may be too limited to explain all types of environmental behavior" (p. 70). Other conservation psychologists also believe that protecting the environment does not require major changes in lifestyle or belief. These psychologists believe that value change theories are inherently flawed, because, while it is clear that many people's actions are in discord with the tenets of conservationism as

evidenced by the climate crisis that Gore and the Intergovernmental Panel on Climate change work to ameliorate, it does not seem that people's values are. In fact, people actually report having a high-level of environmental concern (Dunlap, Van Lier, Mertig, & Jones, 2000).

Instead, the problem seems to be in the alignment of attitude and behavior (See Ajzen & Fishbein, 1977; Axelrod & Lehman, 1993; Diekmann & Preisendorfer, 1998; Newhouse, 1990; Olli, Grendstad, & Wollebaek, 2001; and Schultz & Oskamp, 1996). Bickman's (1972) famous study illustrates the so-called attitude-behavior gap: passersby were asked if it was everyone's responsibility to pick up litter. While nearly everyone said "yes," virtually no one picked up litter that had been planted on the ground nearby. From this study, it can be inferred that behavior modification, not value change, should be the focus of conservation psychology's efforts to promote pro-environmental actions.

If behavior change is the best method of approach, psychologists must be careful to avoid committing the fundamental attribution error by not paying heed to the significance of the context of behavior (e.g., intention, situational influences, etc). Kaiser and Wilson (2004) wrote, "Psychologists underestimate the significance of concepts such as attitudes and values, because it is not a behavior's apparent face value that matters, but rather the reason…behind an act" (p.1532). In response, some conservation psychologists are focusing on examining specific behaviors in their specific context (e.g., Bamberg, 2003). This follows from the social psychology tradition of recognizing that different actions in different contexts are not the same behaviors: "A movement does not have a single label

and meaning but several different labels and meanings, depending on the context in which it appears, because that context is part of what the behavior-in-context is called" (Landrine, 1998, p. 83). People failing to recycle because they are unaware of the concept and people failing to recycle because there is not a recycling program in place where they live are the same actions, but, because of the different contexts in which the actions take place, they are not the same behaviors.

In support of this approach, research indicates that an individual's social context seems to be related to their environmental behavior. Olli, Grendstad, and Wallebaek (2001) compared various correlates of environmental behaviors through self-reported surveys. Their statistical analysis found "The role of social context, measured through social participation in environmental networks, was more important than any of the other correlates of environmental behavior," such as age or sex (p. 201). In other words, the most statistically significant determinate of pro-environmental behavior was whether that individual was part of a pro-environmental organization and/or socialized with those who were part of a pro-environmental organization. Geller (1995) also asserted the importance of social context and relationships, and emphasized the need for environmental interventions on a community scale.

McKenzie-Mohr (2000) created a system for changing environmental behaviors by taking context into account. He termed his system "Community-based social marketing" (p. 531). Those who practice community-based social marketing identify the activity to be promoted and the barriers to this activity and then design a strategy to overcome these

barriers, while using psychological knowledge regarding behavior change. Essentially, community-based social marketing is about making "green actions easier" (Manning, Amel, & Scott, Under review). McKenzie-Mohr's focused system is supported by additional research, which indicates that it is useful to concentrate on a target population when attempting to promote sustainable practices (Bator & Cialdini, 2000). Moreover, attention to specific, concrete actions has the added benefit of being more effective than broader campaigns (Oskamp, 2000a).

The Power of Organizations

Of course, there are some institutionalized limits on changes the individual can make, or be encouraged to make, through behavior-changing techniques. Stern (2000a) noted that "Much of the environmental impact of human activity results from the actions of organizations, not individuals, and from organizational decisions about production and service provision, not consumption" (p. 524). For example, an absence of or lack of access to recycling facilities prohibits individuals from exercising their environmental conscientiousness in this way. Likewise, the geomorphology of most American cities virtually necessitates the use of motor vehicles as a method of transportation for basic life needs. This makes it very difficult for urban individuals who recognize the environmental impacts of their choice in transportation to make change regarding it. In fact, the Urban Land Institute has published dozens of studies that conclude that overall urban development and organization is a primary contributor to non-conservation behaviors (Smart Growth America, 2007). In these and other ways, institutions can

essentially demand that individuals engage in unsustainable behavior (Howard, 2000). So, in order for barriers to individual sustainable behavior to be effectively addressed, it is important to acknowledge that individual consumption choices are "Constrained, shaped, and framed by institutions and political forces that can be remade only through collective citizen action" (Maniates, 2002, p. 43).

Beyond this mechanical limitation of individuals by institutions, the sheer magnitude of impact of an institution and an individual are incomparable. "Pollution is certainly caused by human behavior, but analysis shows that organizations usually do more to degrade the environment than individuals and households – sometimes far more" (Stern, 2000a, p. 523). Pearce (2006) wrote:

> We can all save water in the home. But as laudable as it is to take a shower rather than a bath and turn off the faucet while brushing our teeth, we shouldn't get hold of the idea that regular domestic water use is what is really emptying the world's rivers (p. 3).

Vlek and Steg (2007) named institutions as one of "Five general driving forces of global environmental change" (p. 1).[1]

It is helpful to remember that, just as organizations can shape behaviors toward those that are unsustainable – and can themselves be harmful to the environment – they also can shape behaviors toward sustainability (see Dean & Bush, 2007; Mee & Clewes, 2004).

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[1] Moreover, Kaplan (2000) has reminded us that people's perception of the ineffectuality of their actions can lead to learned helplessness, which in turn, adversely impacts their conservation behaviors. The perceived and real limitations organizations place on individuals is a significant factor in relieving threats to sustainability.

There is some research in the field of conservation psychology on understanding more about corporations that do try to shift to more sustainable behaviors (see Siebenhuner & Arnold, 2007). There is also evidence that, like individuals, organizations respond best to specific, rather than broad, campaigns (Daamen, et al., 2001).

Non-governmental organizations (NGOs) work with this optimistic philosophy in mind. Phadke (2005) has brought to light an organization that can broker such change. She presents a case study of the construction of the Uchangi dam in India. Villagers, who would bear the brunt of the problems of the dam and few of the benefits, were against the dam. The company who built the dam, clearly, was in favor of the dam. The NGO she studies was successfully able to bridge the gap between those for and those against the dams. Phadke wrote of how the NGO worked in collaboration with villagers to survey the site of a dam, and consider how they might make the dam more acceptable to the villagers. The NGO then helped present the plan to the government. Through the resultant dialogues, the two sides were able to come to an accord. This sort of approach to problem solving is beneficial for both, and has implications for organizations that promote sustainability. In the case of the Uchangi dam, construction will be less harmful for farmers, and the farmers will cease to impede dam construction. Phadke wrote, "NGOs can play an effective intermediary role in the process by translating local knowledge into bureaucratic planning" (p. 373).

It is with the inspiration from the success of NGOs to broker organizational change, the knowledge that some conservation psychology literature acknowledges the (potential)

role of organizations, and the realization that the global environment is urban that I arrive at my interest in the power of organizations to ameliorate threats to sustainability present in cities. Other psychologists share my interest, as exemplified through the journal articles mentioned previously and in other ways on which I have not yet touched. One such way is academic conferences, like the 1st Maxwell Workshop on Organizations & The Natural Environment that Syracuse University sponsored in May 2007, the theme of which was "Organizations, Networks, and the Natural Environment." Another conference entitled "True Urbanism: Designing the Healthy City" will take place in June 2008. The American Psychological Association's 2008 Annual Meeting has a variety of agenda items related to conservation, including two symposia: "Psychological research to meet the global challenges of climate change and sustainable development: An international symposium" and "Psychology of global climate change." The academic focuses of these articles, journals, and conferences arise from an acknowledgement that organizations have the capacity to place constraints on human behavior. Optimistically, organizations may allow for -- and even promote -- more sustainable practices, and place pressure on other organizations to do the same. My interest in this paper is on organizations that serve to encourage and advance sustainable behaviors in people and/or other organizations in an urban environment.

The Green Cities: Case Studies of Twin Cities Organizations

I have selected several organizations in the Twin Cities that self-identify as "green" in order to illustrate how theories in conservation psychology are applied in the field. I

chose to focus on organizations within the same urban area since each urban area is unique and successful intervention requires the junction of its distinct "day-to-day experience and use of the environment, local knowledge, and social networks" in additional to expert assessment (Bonnes et al., 2007, p. 75). The organizations described in this paper are of a variety of types, but all of them are, in their own way, working toward urban sustainability. They were selected for this paper through networking and solicited communication. This means that representatives from several of the organizations interviewed had a personal connection to the author of this paper. I contacted representatives from other organizations because of suggestions from those personal connections. The selection of organizations is by no means intended to provide a scientifically representative sample of all organizations working toward urban sustainability in the Twin Cities. Instead, the selection represents those organizations that were available for interview at the time that I was conducting my research.

The following section presents a series of case studies of these organizations. I chose the case-study methodology because I wanted to understand how these organizations operated in the Twin Cities. As Yin (2003) noted, "In general, case studies are the preferred strategy when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon with some real-life context" (p. 1).

I conducted semi-structured interviews with one representative from each of these organizations. The representatives were initially contacted via email. Each

representative happened to be a female who appeared to be between the ages of 25 and 45. Each interview took between 15 and 60 minutes, depending on the length and depth of the representative's answers. The interviews were conducted in venues or via modalities chosen by the representative, so as to maximize their comfort and convenience. These venues included personal residences and coffee shops while modalities included face-to-face and telephone communications. None of the representatives received compensation of any kind for their time, aside from the opportunity to reflect on their work.

During the course of the semi-structured interview, I asked each representative if the organizations she represented self-identifies as green (which I have defined as equivalent to working toward sustainability). Following a positive answer, I asked the representative to explain the organization's mission, implementation plan, measure of success, and self-assessment of success.

The Interviews

This section details what was discussed through the course of the interviews. The disparity in length among the sections is due to the previously mentioned differences in the loquaciousness of the representatives of the organizations.

Minnesota Department of Energy

Officially a part of the Minnesota Department of Commerce, the Department of Energy (MNDOE) focuses on "promoting renewable energy and energy efficiency in order to reduce fossil fuel use," according to the representative with whom I spoke. In practical terms, this mission is addressed in several ways. The MNDOE regulates energy utilities; promotes energy conservation, efficiency, and renewable energy (these renewable technologies include deriving energy from solar, biofuels, and wind sources); and implements legislation relating to energy.

As an example, MNDOE helps to enact the Low Income Home Energy Assistance Program (LIHEAP). This program helps low-income individuals and families pay their energy bills in times of crisis. MNDOE offers additional counsel to those individuals, and others also seeking help, regarding energy-saving practices such as weatherization. MNDOE also helps make clients and the general public aware of "green pricing" which requires that utilities offer an option whereby customers may pay a premium to support renewable energy technologies. The MNDOE representative explained that it can be difficult to explain to laypeople about how purchasing green energy works. After all, the energy coming in to a given person's home is "not literally from renewable energy. The renewable energy keeps the grid charged," and it is from this grid that homes and businesses draw their energy. The MNDOE representative also spoke about Minnesota's Community-Based Energy Development legislation. This legislation has enabled funding which allows for more than half of the state's energy to come from wind sources.

It is based upon these and other figures that the MNDOE representative claims success. Other quantitative measures include number of megawatts of energy used, amount of energy saved, and the number of people contacted. In comparison to other states in the U.S., Minnesota currently has the largest ethanol-based blend and biodiesel-based blend fueling network and is the first state to legislate net metering. All of these statistics "act like a pep rally, [they] really excite people," she says.

Green Guardian

The Green Guardian is a campaign engineered by the Solid Waste Management Coordinating Board, which has both governmental and private members, including representatives from six metro area counties and the Minnesota Pollution Control Agency. The campaign focuses on communicating the need for making environmentally responsible purchasing and disposal decisions. The face of the campaign is the Green Guardian mascot, who appears at public events and can be called in for private occasions as well, such as after-school groups. The campaign also has a website which has waste reduction and recycling information, with specialized sections for kids and businesses. There is a variety of information contained therein. One page informs the reader how to properly dispose of a variety of goods, from automotive fluids to mattresses to scrap metal. Another page promotes intelligent choices consumers can make to reduce their waste, while another features a map with waste disposal sites marked. The representative from the campaign did not explain any concrete way the campaign has of measuring

success and instead focused on "spreading the message" as a general goal. Despite the lack of measures, the representative did feel that the campaign was successful.

Community POWER grant program

The Community POWER grant program is also associated with the Solid Waste Management Coordinating Board. According to the representative with whom I spoke, after 10 years of work, the board had come to realize it was not reaching residents about waste and toxicity reduction. The board decided to fund this grants program in order to assist organizations (especially schools) that did not already have an environmental focus in achieving waste reduction goals. The program provides grants (of up to $12,000) and resources to serve these ends. The grant program typically provides direct education with community organizers who, in turn, expose residents directly. Recipients in 2007 include: The Association of the Advancement of Hmong Women (AAHW), the Carver County Historical Society, and Marine Elementary School. They will all use their grants to promote education and awareness of waste issues within their communities.

The program assesses its success in three quantitative ways: the number of people reached with the message, the number of people community groups report took action, and the percentage who continued to change their behavior over a given period of time. Based on these criteria, the representative stated that she believe the program was a success. Although the "projects don't always work as intended, the statistics are promising." She also voiced her belief in the strength of partnerships between

government and community groups. Since "most people are not focused on changing their behavior, [this change] requires involvement from different places, connection, and integration."

hOUR car

The Twin Cities' car-sharing program, hOUR car, is an organization funded by a variety of donors and personal members. The non-profit Neighborhood Energy Connection (NEC) founded and manages hOUR car. The NEC is a non-profit organization that provides energy efficiency information, services, and programs to residents, businesses, and communities across Minnesota. Members pay monthly dues and, in some packages, additional hourly and mileage fees. In exchange, hOUR car "buys, insures, and maintains a fleet of member-shared cars. hOUR car takes on all the responsibilities of owning the vehicles, including paying for fuel" (HOUR CAR, 2004) The vehicles are parked in strategic places throughout the cities and members may make reservations online or by phone. hOUR car promotes itself through advertisements in locations where people with an established interest in green and sustainable behaviors may go, such as co-ops and the Living Green Expo. However, the representative explained that its self-promotion is limited by its budget, which was "mostly eaten up by buying [energy-efficient Toyota Prius and Yaris] cars." She goes on to state there has certainly been success through word-of-mouth, as there are hundreds of participants in the Twin Cities.

Garden Works

Garden Works was established by the Green Institute, the Minnesota State Horticultural Society, and Farm in the City. These organizations wrote a grant proposal to the McKnight Foundation because they observed that community gardens had little support, and were threatened by the housing boom. The proposal recommended that there be an association for sustainability and betterment of the community garden community. The organizations wanted this garden association (to be called Garden Works) to be run by a "well-integrated" network of individuals as opposed to a hierarchy of leadership or a board. This way, the organizations believed, Garden Works would not be at the whim of board members or any given individual, and would not collapse should that individual withdraw from participation.

Today, there are three women who work in the Garden Works office. They facilitate the well-integrated network of gardeners that the grant proposal described. In practical terms, these women speak on the behalf of the gardeners, advocating for the survival of the gardens. They also offer support to gardens – their website offers links to their Twin Cities Community Garden Resource Guide, which includes a variety of information ranging from the mechanics of gardening to tips about running a successful community garden. Garden Works also holds workshops focused on issues such as leadership development. Garden Works reaches out to the greater community by coordinating community events. One such event is the Parade of Gardens, which is effectively a mass open house where gardeners from each of the gardens stand by and are ready to discuss

community gardening and offer snacks (sometimes directly from the gardens themselves) to the general public.

The representative said that evaluating how many gardens participate in the Parade of Gardens is one way she evaluates their success. She also generally considers how many people Garden Works has reached out to, reflected in number of people who are on the listserv and how gardeners return surveys that Garden Works sends out. Another quantitative measure is how many donations Garden Works receives. Qualitative measures include analysis of the network of gardens, and assessing if leadership is truly shared, or if certain individuals are dominating a given garden. The representative also asks questions such as "Why are some gardens going under? How many gardens have waiting lists [for people to get garden plots]? How many gardens are full? How many gardens are doing PR? Do they have [visible] signage? How much media time [is Garden Works and individual gardens receiving]?" The representative sees Garden Works as a successful organization, one whose success is "in a continuum, but progresses each year."

Blue Sky Guide

The Blue Sky Guide is an annual magazine and coupon book that contains ideas for "greening up your life" and discounts at stores with sustainable messages and practices. A similar guide premiered in Portland, Oregon, one year before it came to the Twin Cities. The three organizers that work on the Twin Cities Blue Sky Guide chose to come

to the Twin Cities because the cities are "progressive, open to sustainability, there exist natural food coops, and they are outdoorsy." Their mission here is to "expand the market for sustainable products and services." She described the guide as a resource that would encourage people to learn and to try new things: "It is a tool for not feeling helpless."

The Blue Sky Guide "hits different angles for different people and makes [green behavior] fun and easy…it provides options for different interests." It is also cheap; at only $20 with 300 coupons inside, the Blue Sky Guide can effectively pay for itself. The guide has sections including: Live, Play, Go, Neighborhood maps, Carbon counter, Secret Code Page, Coupons, and EcoMetro Decoder. The "Live" section, for example, includes tips on cleaning, furniture, energy savings, and pesticide alternatives. The "EcoMetro Decorder" is a brightly colored decoder page containing a carrot superhero. The decoder is revealed when five tasks related to green behavior are completed and associated perforated exclamations (e.g., Zap!, Zowee!, etc.) are punched out. The coupons are for "products and services and have significantly reduced environmental impacts compared to alternatives, or support the community in significant ways" (Celilo Group Media, Inc; 2008). Coupons include discounts at used bookstores, bike shops, and natural food co-ops.

Because the guide features coupons for retail stores, restaurants, and entertainment venues, these businesses are motivated to distribute and participate in the Blue Sky Guide as a reasonably priced advertising technique. Blue Sky Guides can also be sold as fund-raisers. The benefits the Blue Sky Guide offers to both consumers and producers helps to

explain how the Blue Sky Guide sells 24,000 copies a year and the sales are growing by 20% each year. The representative sees these numbers illustrated when she notices people using the book and hears positive feedback from the participating businesses.

Analysis of Organizations

Minnesota Department of Energy

MNDOE is able to act on a broader scale and with more authority than the other organizations interviewed. As a government organization, it can shape and require certain behaviors, exerting the type of authority Maniates (2002) attributed to institutions and political forces. MNDOE's successes give credence to Gattig and Hendrickx's (2007) recommendation to use public policy as a tool to encourage pro-environmental behavior. Furthermore, MNDOE's policies speak to an encouraging alignment between public and expert attitudes, which Winter (2000) deemed important for assuaging environmental problems.

MNDOE's methods revolve around behavior change, as opposed to value change, adding support to Schultz & Oskamp's (1996) emphasis on the behavior dimension of the attitude-behavior distinction. In practice, MNDOE operates primarily under two psychological theories previously elaborated on: operant conditioning and Community Based Social Marketing. Operant conditioning is in effect when complying with weatherproofing, as MNDOE advises, provides the reinforcement of saving money.

These rewards may help correct for the issues of delayed gratification described in the Ainslie-Rachlin principle. MNDOE's methods are reminiscent of Community Based Social Marketing in that they identify barriers to making sustainable choices and they seek to remove them (McKenzie-Mohr, 2000). MNDOE observed that people were not making sustainable energy choices. MNDOE identified lack of knowledge on the issue as a barrier, so it provides resources for weatherproofing and making green energy choices, among other tools.

Green Guardian

Green Guardian may offer the only example of value change among these organizations interviewed (See Howard, 2000; Oskamp, 2000b). The campaign, as campaigns do by their very nature, promotes ideas. This one seems, in particular, to be also promoting certain values, especially in youth, through the use of the Green Guardian mascot. This campaign echoes Berenguer's (2007) theory that values could be manipulated in order to change behavior. On the other hand, Green Guardian pairs this inspiration directly with information about practical application of recycling – their website provides a virtual "go-to guide for waste and recycling in the Twin Cities." This pragmatic aspect of the campaign is more reminiscent of Community Based Social Marketing. Green Guardian observed that people were not recycling and properly disposing of waste. It identified that providing information about how to properly recycle and dispose of waste would help people make better choices. In these ways, Green Guardian's methodology

references both conservation psychologists who focus on value change and those conservation psychologists who focus on behavior change.

Community POWER grant program

The Community POWER Grant Program operates through different vehicles than most of the other organizations detailed in this paper. The program's goal is to facilitate other organizations in furthering their respective goals of promoting sustainable choices. The scale at which the program operates has two primary benefits according to the literature. First, the level of ecological impact of organizations is greater than that of individuals (See Dean & Bush, 2007; Mee & Clewes, 2004; Pearce, 2006; Stern, 2000a). Second, organizations are able to exert a strong influence on individual behavior (See Stern, 2000a and Howard, 2000).

hOUR car

hOUR car's methods, like those of MNDOE, revolve around behavior change, as opposed to value change. In practice, hOUR car operates primarily under two psychological theories previously elaborated on: operant conditioning and Community Based Social Marketing. With regards to operant conditioning, participating in hOUR Car instead of owning and maintaining a personal automobile produces money-saving rewards. These rewards may help correct for the issues of delayed gratification described in the Ainslie-Rachlin principle. With regards to Community Based Social Marketing,

hOUR Car observed that automobiles cause a lot of pollution. It identified that fewer cars would mean fewer pollutants, and it began a car-sharing program as a solution.

Garden Works

Garden Works seeks to utilize the power of organizations in a slightly different and more straightforward way than the other organizations interviewed for this paper. Those who founded Garden Works perceived that creating an organization could empower those who were previously isolated in their pro-environmental behavior. The ability of an organization to empower individuals was described in Phadke (2005).

Blue Sky Guide

Like most of the other organizations interviewed, the Blue Sky Guide's methods of promoting conservation behavior focus on behavior change, adding yet another voice of support for psychologists like Axelrod & Lehman (1993) who advocate for its effectiveness over attitude change efforts. The Blue Sky Guide makes use of operant conditioning as a technique for causing behavior change. Making use of a coupon from Blue Sky Guide produces money-saving rewards, which serve as reinforcers for pro-environmental behavior. According to Thompson, Aspinal, and Montarzino (2008), the fact that some of these rewards are geared toward youth means promising things for their pro-environmental behavior as they mature as it seeks to remedy the disconnect today's youth seem to experience from their environments (Louv, 2005).

Discussion and Integration

How They Make Change

As described previously, conservation psychologists tend to orient their ideas about making change around the attitude-behavior gap. Some argue that it is important to focus on changing people's values in order to induce behavior change (e.g., Howard, 2000; Oskamp, 2000b), while some conservation psychologists believe focusing on behavior change itself is the most effective method of precipitating change (See Ajzen & Fishbein, 1977; Axelrod & Lehman, 1993; Diekmann & Preisendorfer, 1998; Newhouse, 1990; Olli, Grendstad, & Wollebaek, 2001; and Schultz & Oskamp, 1996). The successful organizations interviewed for this paper offer an interesting, ground level look at which of those methods is being practiced.

Among these organizations, there seems to be a limited focus on value change. The best, and perhaps only, example of value change may be the Green Guardian campaign. The campaign, as campaigns do by their very nature, promotes ideas. It is conceivable that the Green Guardian's superhero-esque mascot could upgrade this particular campaign from one that simply promotes ideas and concepts to one that actually inspires and instills a sense of the importance of recycling and waste reduction. In this way, the depth of this campaign may be more akin to value indoctrination than a simple awareness campaign might otherwise be. On the other hand, Green Guardian pairs this inspiration directly

with information about practical application of recycling – their website provides a virtual "go-to guide for waste and recycling in the Twin Cities."

The bulk of the organizations seem to be focused on interventions more akin to Green Guardian's website – interventions focused on behavior change as opposed to value change. Some of this behavior change relies closely on a behavioral psychology pillar: operant conditioning. Complying with weatherproofing, as MNDOE advises, will provide the reinforcement of saving money. Making use of a coupon from Blue Sky Guide and participating in hOUR Car instead of owning and maintaining a personal automobile both produce similar money-saving rewards.

Interestingly, many of the organizations' methods are reminiscent of Community Based Social Marketing in that they identify barriers to making sustainable choices and they seek to remove them (McKenzie-Mohr, 2000). MNDOE observed that people were not making sustainable energy choices. MNDOE identified lack of knowledge on the issue as a barrier, so it provides resources for weatherproofing and making green energy choices, among other tools. hOUR Car observed that automobiles cause a lot of pollution. It identified that fewer cars would mean fewer pollutants, so it began a car-sharing program. Green Guardian observed that people were not recycling and properly disposing of waste. It identified that providing information about how to properly recycle and dispose of waste would help people make better choices. These organizations, unknowingly according to my interviewees, essentially operate using Community Based Social Marketing.

The Power of Organization

The Community POWER Grant Program and Garden Works operate through different vehicles than the other organizations detailed in this paper. The grant program operates on a community scale, helping other organization to promote change therein. The program is an example of one that encourages organizations, which already exist, to make more sustainable choices themselves and to shape individuals towards more sustainable choices. The focus on changing organizations relates to the literature describing the magnitude of organizations' environmental and social impact. Environmentally, organizations can harm (or save) the environment on a scale that is of a greater significance than individuals are able to (Stern, 2000a, Pearce (2006), Dean & Bush, 2007, Mee & Clewes, 2004, etc.) Socially, Stern (2000a) and Howard (2000) wrote about how organizations have influence over (and even constrain) individual decisions about environmental behavior.

Conversely, Garden Works sought to create an organization where there was none previously. Garden Works essentially formed an advocacy group for gardeners, who were previously isolated. The network of gardeners has more power than the individual gardeners, like the NGO Phadke (2005) describes. It is with knowledge of the power of organization that these two green organizations operate.

Conclusion: The Green Cities?

It is interesting to note that, while their methods are diverse, none of these successful organizations appear to rely heavily on delineating the problematic non-conservation behaviors in which the populace engages (e.g., Everyone drives their own automobile to work, most people do not recycle, etc.). Upon consideration, it may indeed be in green organizations' favor not to focus very much energy on emphasizing the misguided nature of people's values and behaviors. What is perceived to be socially normative behavior has a strong ability to influence a given person's behavior. Conservation psychologist Robert Cialdini says:

> Well-intended environmental messages can have negative effects if they hype the idea that many people are contributing to the problem…A public service announcement that proclaims, "So many people today are littering that the aluminum cans lying on our streets would stretch to the moon and back" would do more harm that good. Instead, psychologists should make litterers feel as if they're in the minority (Price, 2008, p. 50).

If, for example, an organization were to convey that an "average American" does not have green values, the organization would be communicating two things: most of the people in America do not care about green issues and a given average American who does not have green values is doing exactly what everyone else is doing. The former point makes any potential green behavior or value seem futile. The latter point forgives non-conservation behavior under the guise of social normalcy.

Some organizations operate in circles where the social norms are already aligned with green values, averting the problem about which Cialdini warned. hOUR Car promotes itself at the Living Green Expo. In one clever gimmick, the organization encouraged passers-by to place a pin in a map of the metro region indicating where they live, in order to emphasize how close and convenient hOUR Car is to them, and to so many others. hOUR Car also advertises in natural food co-ops, where the customers have presumably already begun acting on green values. Similarly, the Blue Sky Guide also advertises in natural food co-ops and other shops whose patrons can be presumed to have green values already.

As Cialdini suggests, there is also another way that green organization may approach the social context of behavior. This way capitalizes on the power of a perceived social norm to create a new social norm. The Blue Sky Guide is particularly interesting because its story may be illustrative of this phenomenon occurring in the Twin Cities at large.

According to the Blue Sky Guide representative, the organizers chose to come to the Twin Cities because they presumed locals generally to espouse green values already. She said that the Twin Cities are "progressive, open to sustainability, there exist natural food coops and they are outdoorsy." Various academics have written about Minnesota in the terms in which the representative from the Blue Sky Guide spoke. For example, Lanegran (2000) wrote at some length about Minnesotan's love of nature. He discussed the many ways in which Minnesotans make use of the outdoors and implied that their focus on the outdoors appears to be somehow special and distinct. Delton (2002) argued

for the national importance of Minnesota's "distinct brand of liberalism" (p. xvi). These and other works would seem to indicate that the Blue Sky Guide made a well-informed decision in selecting an already green-hearted cities.

What is interesting, however, is what the ending of Lanegran's essay implies. Lanegran asked, "Are we [Minnesotans] different? More adventurous? More willing to come to terms with the environment?" In fact, he decided, "We probably are not all that unusual" (p. 100). His pronouncement begs an interesting hypothetical. What if Minnesotans are not, or were not, that unusual per se? What if the Blue Sky Guide just acted on a relatively unsubstantiated façade? Today, it can be postulated that the Twin Cities are actually notably green. This is evidenced in a variety of ways, including external validation such as Minneapolis being named one of the Top 10 Greenest US Cities (Sustainlane Government, 2006) and also internal validation, such as the Minneapolis city government's statement that "Creating a more sustainable community is a top priority" (Official Web Site of the City of Minneapolis, Minnesota, 2008).

How, then, did the Twin Cities get from the green in appearance to green in reality? One answer is that the change came from within: individuals gradually began making changes toward sustainability, which has snowballed into today's reality. This is certainly part of the story. However, drawing on the previous discussion about the difficulties of individuals making change and the important role of organizations and social norms, there might very well be something else at play in the Twin Cities' story. When groups such as the Blue Sky Guide organizers effectively "buy in" to the message

of green Minnesota, that very well may encourage Minnesotans to do the same – creating a self-perpetuating cycle.

While this specific possibility is only a conjecture, generously drawn from one geographer's conclusion about a specific value associated with sustainability, conservation psychology theory does give credence to this hypothesis. Geller, Witmer, and Tuso (1977), Manning, Amel, and Scott (Under review); Mumford (2007), and Schultz et. al. (2007) all presented compelling arguments for the paramount importance of social pressures and norms in promoting green behavior. Olli, Grendstad, and Wallebaek (2001) stated that participation in and exposure to pro-environmental social networks are the most important correlate of individual pro-environmental behavior. Mee and Clewes (2004) and Dean and Bush (2007) asserted the salience of organizational influence. So, perhaps, in the context of Minnesota's "green" reputation as perceived by groups such as the Blue Sky Guide, Lanegran's answer might be appropriately paraphrased: "We probably were not all that unusual. You just thought we were, and we believed you."

This, I believe, is the most intriguing recommendation that psychology can provide in response to the urban sustainability problem. Do not spend time telling people how badly they pollute, or how much their lifestyles need to change. No one likes to be shamed or to go without. Instead, tell people that everyone is reducing their pollutants and that everyone would like to augment their lifestyles. Then, show them how and make it true.

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