

**Environmental Leadership:  
The Discipline of Green Champions**

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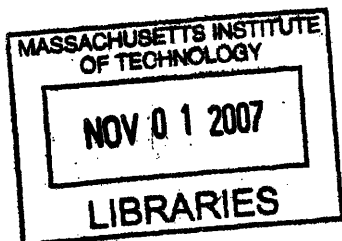
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## **Abstract**

Modern society's inertia is driving it towards an ever-expanding environmental footprint, a course that if unchecked will produce calamitous environmental outcomes. Avoiding this future requires increasing capacity for deep and durable change in society. Since existing approaches – e.g., science, education, policy, market incentives – have been unsuccessful at achieving this level of change, a key ingredient is apparently missing. Environmental leadership, which I define as the capacity of a human community to improve its future connection with and impact upon the environment, can be that catalyst of a more sustainable society. This thesis explores how to increase environmental leadership capacity by revealing effective environmental leadership strategy. Given pragmatic concerns with the limited power possessed by environmentalists, the inherently unstable nature of gains made through power, and unlikelihood of achieving deeper transformations through coercion, I explore leadership strategy for creating change beyond the extent of its authority and without imposing the government's coercive power. I had presumed three existing veins within leadership literature – Interpersonal Influence, Capacity-Building, and Contextual Design – would adequately explain environmental leadership strategy, with Interpersonal Influence being the primary mechanism. While leaders indeed acted in all three styles, Contextual Design instead emerged as a surprisingly key route to influence. Analysis of interviews with 32 environmental leaders revealed an important, previously underreported aspect to leadership actions. Leaders routinely amplified and institutionalized their leadership influence by designing and creating durable structures achieving four purposes – Supplying, Community-Building, Integrating, and Mirroring. All three leadership approaches both supported and were supported by structures, which could function as supportive tools or standalone allies. I speculate that structures were effective because of both their durability and their more subtle and tangible influence on behavior, an alternative to the prediction of appeals to abstract thoughts and values. Extensive additional work exploring environmental leadership remains, and I offer some questions to guide additional research. I conclude with initial perspectives on how the notion of designer-leaders informs strategic thinking about environmental change.

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## **Dedication**

To all the environmental leaders seeking to create a harmonious connection between humanity and the planet, and preserving sustainable abundance for all species of the Earth. I only hope that this thesis serves as a small contribution to that vast challenge.





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## **Preface**

From my vantage point, I cannot see any challenge more important than redefining humanity's relationship with our environment. Examining our impact on natural resources, toxins, atmospheric composition, and climate all paint a disturbing picture. If we continue to destroy the Earth's capacity to support healthy lives for our species and others, which I believe we are sadly doing with breakneck speed, our societies will at a minimum lose much of what makes life worth living. More likely, they will collapse.

I have never understood how society can play such a game of Russian Roulette, but it appears to be the game we have elected. I do not believe we can continue this path and continue to enjoy nearly the degree of prosperity we are accustomed to for long. But switching paths is of course very problematic, and poses an incredible challenge.

Has there ever been such a need to transform societies with so many people so quickly, and without a highly tangible threat that connects with people at a gut level? With such crises as pandemics and world wars, the enemy is clear and terrifying, which inspires society to mobilize and fight. With environmental issues, the enemy is hidden within ourselves and our lifestyles. It is therefore an all-too-human response to sit comfortably and do nothing, or even see the solution to environmental problems as a serious threat to other interests, such as economic prosperity. Until major systems of prominent societies break down, it might be too challenging for modern society to transform its environmental relationship with and impact upon the environment. And if we reach that point, it will be far too late to adjust our societies in time to avoid massive, deleterious impacts on them and the globe. Our inertia has headed us in the wrong direction, and we don't seem to have a good rudder.

Ushering in the transformation with the requisite urgency and depth demands extraordinary leadership. This leadership must somehow inspire individuals, groups, communities, industries, and whole societies to radically transform their impact on the environment in an exceptionally short period of time, all to avoid looming yet invisible catastrophes. It must guide and help invent a new way of being on the Earth. Needless to say, both humanity and the planet demand extraordinary leadership, and demand it now.

Yet we have far too little understanding of how leadership can usher in such a transformation, or even a clear definition of what that leadership is. This lack of knowledge will cripple our ability to develop the green champions of this transformation, let alone an army of them capable of besting this challenge.

This thesis aims to contribute towards remedying this glaring and dangerous knowledge gap about what constitutes successful environmental leadership so that we can begin developing the environmental leadership capacity needed to usher in a deeply green society.

## **Chapter 1: Introduction**

- 1. An object at rest will remain at rest unless acted upon by an external... force.*
- 2. The rate of change of momentum of a body is proportional to the ... force acting on the body*
- 3. All forces occur in pairs, and these two forces are equal in magnitude and opposite in direction*

- Isaac Newton's Three Laws of Motion

Just after midnight on March 24, 1989, the loaded and massive oil tanker *Exxon Valdez* struck underwater rocks in Prince William Sound, Alaska (Egan 1989). The ship's inertia drove it forward as the rocks ripped a gash in its hull, eventually allowing over 11 million gallons of crude oil to spill into the pristine Sound, causing one of the most tragic environmental disasters in history. The ecosystem and its dependant communities and industries were devastated by the accident, and have yet to fully recover. While inertia provided the force that ripped the hull apart, the true cause of the disaster was not physics, but a dramatic failure of leadership.

The ship's captain, Joseph Hazelwood, was vilified for failing to steer the ship safely on its way out of the Sound. Hazelwood, a known alcoholic, had been drinking less than two hours before the ship left port, and was still legally drunk when tested 10 hours after the accident. While in the Sound, he ordered the ship set to autopilot; gave unqualified subordinates orders to avoid the floating icebergs by navigating into shallow waters, in breach of maritime rules; then retreated to his cabin. The ship ran aground minutes later when the officer left in charge failed to turn appropriately. When the Coast Guard arrived, they found Hazelwood brazenly smoking on the deck, oblivious to the risk of sparking a blazing inferno (Egan 1989).

This immensely tragic incident starkly illustrates the environmental dangers of combining inertia and bad leadership. Hazelwood set the course aground, and then the vessel's powerful engines finished the job by driving it against the solid rocks that smashed its hull to pieces. The

moment the *Valdez* slammed against the hidden walls in its environment, it became the textbook example of a human vessel destroyed by misguided inertia. Unfortunately the *Valdez* is hardly unique; the same phenomenon can happen with our communities, organizations, industries, and societies. When these entities' course is set by poor leadership, the powerful human inertia guiding their future direction can force them against their environmental constraints with similarly disastrous consequences as the *Valdez*.

A striking counterexample to the *Valdez* comes from the corporate sector. In 1997, Darcy Winslow was head of Advanced R+D at Nike, leading teams that were responsible for researching, designing and engineering the myriad of technology and materials that would eventually be used in Nike products. She was generally concerned about environmental sustainability, but she wasn't a change agent until she heard William McDonough speak at Nike headquarters in 1997. Unknown to the Nike attendees, his firm had tested the chemical composition of their shoes. Concerned by that analysis, he asked the attendees a simple yet striking question, "Do you know what is in your products?" Despite being in a position to know, Winslow did not. Her realization that she did not understand the impacts of Nike's products on people and the planet bothered her deeply.

This reflection disturbed Winslow enough to fuel her in leading a sea change within Nike and its global supply chain. She used her formal position within the global footwear division as a platform to launch environmental reforms that extended far beyond her official capacity. At the time she began, Nike had considered environment as the purview of the Corporate Social Responsibility (CSR) department, which was disconnected from the rest of company by culture, organizational structure, and its lack of experience with business operations and strategy. Winslow envisioned integrating environmental concerns across the entire corporation into all its

decision-making processes, which could not occur as long as environmental concerns were siloed within CSR. Since product design connected to virtually every department of the company, she envisioned a Sustainable Business Strategy team for designing greener products that would serve as a natural starting point for diffusing environmental considerations throughout the company. She figured this new institution would be at an ideal leverage and connection point to “infect” the company with environmental concerns. Guided by this vision, but lacking formal authorization from senior management, she began quietly speaking with well-respected and environmentally concerned product designers about how to start designing more responsible products. After she effectively engaged this important and influential constituency senior management greenlighted the project, and she was able to build a new structure within Nike committed to and capable of greening the corporation.

Her advocacy was a key ingredient in creating sustainable policies and behavior at one of the leading footwear and apparel firms in the world. Over time she utilized her role as General Manager of Sustainable Business Strategies, with known risk to her career, to launch aggressive corporate sustainability goals for 2020, including Zero Waste, Zero Toxics, and 100% Closed-Loop Products. All three stand as corporate policy today. She has continued to advocate for environmental goals within Nike as she moved to other roles, such as integrating sustainability principles into every aspect of a business line. One can imagine that Nike with Joseph Hazelton and not Darcy Winslow at the helm would be on a far less sustainable trajectory than it is today; the difference is good leadership.

The stark contrast presented by the *Valdez* and Nike examples suggests the critical importance of environmental leadership in averting environmental catastrophes and reducing the environmental impact of human societies. Leadership capable of steering human systems away

from environmental impact appears increasingly imperative, as recent reports have documented how human activities are damaging natural systems crucial for human well-being, such as the world's fisheries and climate. A recent article in *Science* predicted the collapse of all major global fisheries by 2048 (Worm, Barbier et al. 2006). The prestigious International Panel on Climate Change reports that climate change is now “unequivocal” and very likely occurring because of human activity (IPCC 2007). Humanity's ongoing assault on natural systems is pushing them perilously close to cataclysmic tipping points posing irreversible and disastrous consequences for humans and the planet.

As these studies evidence, longstanding approaches to inducing environmental behavior appear insufficient for preventing major environmental catastrophes. While we invest tremendous resources in determining *which* technologies and policies we should change to, we invest far too little in determining *how* to change. The ongoing failure to create the level of change needed suggests that a key ingredient is missing.

I believe the record shows that environmental leadership can be that vital driver of change, and without it, we will slam into ecological constraints with devastating results. Despite the potential importance of environmental leadership, there has been little research to date on this discipline, leaving many important questions to be answered. While the type of leadership that would have averted the *Valdez* disaster is clear, the leadership that can avert a range of complex environmental problems from fisheries collapse to climate change is not. What type of environmental leadership can successfully help our communities and society create sufficiently radical transformations to avert environmental calamities, and how can leadership successfully play the role of change agent in that process?

practices that enables her and other leaders to succeed in transforming a complex human community? And if so, why do those approaches appear to work?

Answering these questions would serve as an important contribution for expanding society's environmental leadership capacity to avert environmental problems and disasters, which I explore through this thesis. First, I establish a background for the paper by defining environmental leadership, outlining the challenge it faces, and describing the type of environmental leadership I see as capable of answering the present environmental challenge. I then discuss a study comprising interviews with 32 environmental leaders in an attempt to learn how they achieve change. Finally, I offer some initial speculation into why environmental leaders act how they do, explore questions for future research, and draw conclusions about what environmental leadership is needed to help society avert environmental disasters.





## **Chapter 2: Introduction to Environmental Leadership**

### **2.1 What Is Environmental Leadership?**

Throughout the paper, I define leadership as “the capacity of a human community to shape its future” (Senge, Kleiner et al. 1999). Adapting this definition, I consider environmental leadership (EL) to be the capacity of a human community to produce a healthy relationship with and positive impact on the environment. Given that most, if not all, modern societies are environmentally destructive, EL implies the need for transforming the status quo. This definition depicts not only what EL can ideally be, but why more and better EL is needed.

Establishing leadership as the capacity to create change also opens the richest window into this highly complex phenomenon. It encompasses many other conceptions of leadership, such as: a form of relationship and influence (Burns 1982); “the art of mobilizing others to want to struggle for shared aspirations” (Kouzes and Posner 1995); a formal role, power, or authority; facilitating collective adaptation (Heifetz 1994); or as organizational management (Langton 1984; Bennis 1989; Snow 1992; Berry and Gordon 1993; Gordon and Berry 2006).

Seeing leadership as a capacity greatly expands where it can be found – and if we are interested in maximizing change in society, it would be a good idea to find as much as possible. This conception extends understanding of leadership to include *any actor* increasing a community’s capacity to change through *any mechanism*, not simply the classic image of leadership as an authority’s ability to persuade and use the power vested in their authority. Seeing EL as a capacity means it can arise from individuals, organizations, communities, nations – potentially even non-human actors, if they facilitate change. Environmental leadership could create change through a range of mechanisms, such as altering the way people think about the environment, fostering emotional and spiritual connection to nature, developing less damaging or

regenerative technologies, inspiring others to take action, creating or transforming organizations to improve their environmental impact, designing less damaging communities and buildings, or simply serving as role models of living sustainably. The ultimate goal of these interim objectives is to create a population with an improved environmental footprint, either reducing negative or increasing positive impacts on the globe.

Defining leadership as a capacity leads to the important notion of “distributed leadership” in which each actor is capable of providing leadership to the larger whole (Ancona, Malone et al. 2007). Distributed leadership explicitly disconnects leadership from formal role, status, or authority, an important distinction. For example, a new intern at a Fortune 500 firm asking their superiors to recycle exhibits “distributed” environmental leadership, despite her lack of formal authority for decisions. When leadership is a capacity, it can be found at any level or corner of a community, wherever actors positively influence mentalities and behaviors that have environmental impacts. This is not to suggest status and authority are irrelevant, only that leadership is defined by an ability to create change – and nothing else.

## **2.2 Why is Environmental Leadership Unique or Unusual?**

Leadership cannot be separated from its context (Heifetz 1994), and environmental leadership unquestionably faces a uniquely difficult challenge that distinguishes EL from other types of leadership. Most leadership challenges, such as civil rights, corporate profitability, or war, have tangible impacts and outcomes on people. For example, if soldiers capture a foxhole, they will have defeated the enemy who is trying to kill them and pillage their homeland. But the environmental “victims” of our decisions are often firmly disconnected by time and space from the actions causing the harm. They are far-away people, future generations, animals, plants, and the Earth.

This separation between action and consequence for most environmental issues dangerously short-circuits our natural propensity for intelligent adaptation and threat response. Many EL issues require connecting consequences and actions to our intuitive, visceral sense of plausibility. We react most strongly when we feel most strongly, and emotions arise in response to perceived changes in our environment (Fischer, Schaver et al. 1990). But if we cannot perceive those changes, we will not naturally react emotionally, and therefore not react behaviorally. For example, it is intuitively unfathomable that we could transform the Earth's climate by emitting an inert, colorless, odorless gas, making our response to climate change tepid at best. We simply are not wired to comprehend or react to the global, long-term, nonlinear nature of most environmental changes leading to catastrophe.

Compounding the problem, environmental impacts are often imperceptibly embedded into virtually every human activity. Therefore, the EL challenge is influencing the human behavior and activities that impact the environment 24 hours a day over entire lifetimes, usually without tangible visceral and emotional feedback about the benefits and hazards of those activities. That is the definition of a challenge!

### **2.3 The Challenge Defines the Leadership Needed**

Understanding the environmental leadership challenge paves the way towards what type of environmental leadership could help resolve our ecological crisis. The distinctions between environmental and other types of leadership shed some light on the core challenge faced by EL, but do not completely explain why human behavior is so rooted in the status quo of environmentally destructive behavior. The answer, explored more fully below, does not appear to be a great mystery.

We in modern societies have virtually all been powerfully habituated by and acculturated to a status quo fundamentally disconnected from nature, and this patterning is the root of our apparent ecological apathy. Psychological research demonstrates that the social environment of our childhood development powerfully and often unconsciously organizes our behavior, thinking and emotions throughout our lifetimes (Fischer, Schaver et al. 1990; Greenwald and Banaji 1995; Bargh and Chartrand 1999; Ayoub and Fischer 2006). Edward O. Wilson claims that our development in artificial environments actually manages to pervert our innate affiliation with nature at both individual and collective levels, a perversion that is then embedded into cultural and physical artifacts that are passed from generation to generation (Wilson 1993). Schein (2004) observes that culture tends to reinforce itself over time and continually organize behavior, supporting Wilson's claim. Kellert, writing for both himself and E.O.Wilson, reflects on the import of this perversion of natural instinct from nature by expressing concern that "the modern onslaught upon the natural world is driven in part by a degree of alienation from nature. Our modern environmental crisis...is viewed as symptomatic of a fundamental rupture of human emotional and spiritual relationship with the natural world." (Kellert 1993:25-26).

The status quo runs deep, and is a powerful adversary. Our development in a modern world alienated from nature now organizes humanity's destructive consumption, economy, and physical infrastructure. If, and perhaps only if, leadership could reorganize these systems it could fundamentally restructure our collective relationship with and impact on the natural environment.

How one views the underlying root of the status quo comprising the environmental leadership challenge has profound implications for what leadership model is best suited to respond to that challenge. If the root problem is that people intrinsically do not care about the planet, then change either must come through some difficult conversion process or resorting to

coercion, manipulation, or even outright force to impose behavioral constraints. In this model, power is the key to change. But if the problem is that people are too firmly and unconsciously rooted in the status quo to make their behavior more environmentally-friendly, then a very different approach is called for. Instead of relying solely on power to force change, this view demands leadership that facilitates adaptation and reorganization.

Heifetz (1994) sees leadership's fundamental role as facilitating "adaptive work", which he articulates by saying,

*"Adaptive work consists of the learning required to address conflicts in the values people hold, or to diminish the gap between the values people stand for and the reality they face. Adaptive work requires a change in values, beliefs, or behavior. The exposure and orchestration of conflict ... within individuals and constituencies provide the leverage for mobilizing people to learn new ways. In this view, getting people to clarify what matters most, in what balance, in what trade-offs, becomes a central task." (Heifetz 1994: 22).*

It may be too simplistic to suggest that one view of the environmental challenge is right and the other is wrong. However, I assume that the environmental leadership challenge is less of might and more of transforming habits of thought, action, and society's structure, all in the face of mostly invisible feedback about the environmental threats posed by our actions. I see at least three reasons to presume facilitating adaptation without coercion is a better perspective for environmental leadership approach. First, Gardner (1990) notes that society generally considers that the less coercion used, the greater the leadership. Second, most environmental leaders will often have no power or authority to impose change, so they must be creative in finding ways to

facilitate adaptation without power. Third, and most importantly, environmental leadership demands highly durable and deep transformations in society's impact on the planet. Changes in behavior arising from coercion will last only as long as leadership has the power to maintain sufficient threats. But if change comes without force, it will also likely remain without force. So methods that create change without force strike me as more effective, ethical, plausible, and sustainable, an approach much better matched to the nature of the environmental challenge.

But just how does environmental leadership facilitate adaptation from the status quo without coercing change?

### **Chapter 3: Research Study**

With this framework for thinking about environmental leadership, I set out to learn from environmental leaders how exactly they go about creating environmental transformation, in the hopes that their experience and wisdom could guide environmental leaders and increase society's collective capacity for change. I interviewed leaders about their practice, philosophy, and successes and failures, and in particular analyzed their leadership strategy. In this section, I detail my research program, including specific research questions, interviewee selection criteria, and interview focus and structure. I build a framework for analyzing leadership strategy from relevant literature, and then describe and analyze my findings.

#### **3.1 How Can Leadership Create Environmental Change?**

My overarching question is how leadership can induce environmental change. To narrow this vast scope I focus the inquiry on two questions about environmental leadership strategy.

- *What are environmental leadership strategies that transform human communities' relationship with and impact upon the environment beyond a leader's formal authority?* I am particularly curious about high-leverage strategies, which I define as creating maximum impact on communities with minimum investment of leadership resources. High-leverage strategies are efficient, and therefore enable leaders to increase their total impact.

- *Why do those strategies appear successful?* This complementary question informs where and how strategies should be deployed, and begins to build a theoretical base informing design and improvement of environmental leadership strategies. It also begins to consider why some strategies are higher leverage than others. The first question is the primary focus of the thesis, while the second begins to form an analytical rationale for the first.

I chose to focus on strategy for multiple reasons. Most importantly, answering the above questions can directly improve environmental leadership capacity. Equipping leaders with the best strategic approaches can make them more effective change agents. Strategy also lends itself to formal documentation better than many other leadership characteristics, such as emotional influence, that are often subtle, ephemeral, and require field-based observation. Finally, the complex nature of the environmental challenge seemed likely to reveal creative strategic responses, making for a rich research environment.

### **3.2 Research Approach**

To develop a broad understanding of environmental leadership strategy, I interviewed 29 practitioners who worked to facilitate change in individuals, groups, organizations, and communities towards healthier environmental outcomes, a closer relationship with nature, or both. Interviewees varied among many aspects, including age, experience, sector, profession, disciplinary training, scale of operations, and style. Despite their diversity, the group also had important similarities; it was predominantly white, mostly male, mostly college-educated, and largely conducted US-based and -focused leadership. I selected and contacted the group of 29 leaders I interviewed largely through personal connections and networks, with a few selected by either accidental discovery through events or internet research.

Leaders included organizational and social entrepreneurs, organizational intrapreneurs, funders, scientists, organizational communications directors, community facilitators, community leaders and advocates, environmental justice advocates, green businesspeople, and NGO leaders. Because of my focus on environmental leadership strategy and leadership as a capacity, and the interconnections between individual leaders and their organizations, I also explored how organizations provided environmental leaders, not only isolated individuals.



I restricted analysis to leaders' efforts to create change beyond the formal authority granted by their professional position and without imposing the government's coercive power. I defined leaders' formal authority as their ability to make decisions, give orders, or impose sanctions without external authorization. I did not exclude leaders with formal authority, but limited my analysis to those efforts that created change beyond what their formal role authorized. Perhaps the most borderline case of an EL I included was Darcy Winslow. While she had significant formal authority in executive roles within Nike, she radically reconceived her role within Nike, clearly moving well outside the scope of her formal positions. She built changes from inside that eventually required buy-in from more senior executives within Nike – she did not have sole authority to dictate nor implement nearly the scale of changes she triggered without senior executive buy-in.

I only analyzed those efforts in which leaders avoided imposing the coercive power of government. A few leaders that I interviewed did use the state's power in some capacity, but only after building a largely consensus request from the community that was subject to policy and regulation. With these leaders, they were critical in establishing the wide public support *calling* for governmental action within a community or constituency, in contrast with *imposing* regulations onto a resistant community.

Given the nascent state of research in this field, and my intention to take an earnest and fresh look at environmental leadership, I believed that imposing a more refined frame while selecting leaders would be premature. Any preconceptions that I had would be reflected in my protocol and resulting analysis. Therefore I tried to assume as little as possible, with the intent of creating the freshest, most novel look at environmental leadership. A significant aspect of my research was not simply answering a question, but finding the right questions to ask.

Therefore, beyond the restrictions on a leader's ability to create change without authority or coercion, I let curiosity and interpersonal recommendations dictate which leaders I spoke with. If a leader's actions appeared to not meet my criteria regarding authority and government power, then I did not draw those actions into my analysis.

I conducted open-ended interviews in which I asked most environmental leaders to recount stories of successful and unsuccessful leadership opportunities and challenges they have experienced, and then probed their reasoning, thought process, and resulting outcomes. I examined these interviews for strategic patterns. A sample interview template is found in Appendix B.

One significant caveat with the interview approach was that I had no way of verifying or validating the stories that leaders told me. While I have no reason to suspect intentional dishonesty on their parts, one would expect any individual to cast their actions favorably. It was impossible to conclusively determine leadership efficacy or impacts, although given the complexity of social change this is a universal problem in leadership research (Gardner 1990). Future studies should explicitly and rigorously address the potential biases inherent in this exploratory study to test its results.

### **3.3 Leadership Background**

I began my inquiry with the presumption that environmental leadership strategy would be well-explained by the many established veins of leadership research. As mentioned previously, I view leadership as “the capacity of a human community to shape its future” (Senge, Kleiner et al. 1999:16). From this perspective, environmental leadership is the capacity of a human community to create a healthier environmental footprint and relationship. Therefore, the defining ability of environmental leadership is achieving environmentally-positive behavioral and psychological change.

However, understanding leadership strategy requires more concrete descriptions of leadership activities and impacts than this overarching definition. To develop a more detailed understanding of environmental leadership strategy, I explore three different strands of leadership perspectives differentiated by the pathways leaders gain influence. I label these Interpersonal Influence, Capacity Building, and Contextual Design. These perspectives are lenses to view activities through, not stark distinctions. Leaders could operate in one or more modes at any given time, and likely must function in all three at times to be successful. Given environmental leadership’s goal of creating behavioral and psychological change, I also include two disciplines – community-based social marketing (CBSM) and environmental education – intended to create behavioral and psychological change around environmental issues. These are not explicitly labeled as leadership theories but nonetheless merit consideration in a discussion of environmental leadership strategy.

While employing these three perspectives to understand EL strategy, I intentionally ignore leadership focused on environmental organization management. For one, this appears to have been the central focus of the few books to date that explicitly address environmental

leadership (Langton 1984; Snow 1992; Berry and Gordon 1993; Gordon and Berry 2006), and therefore is a modestly better developed perspective than leadership strategy intended to transform behavior. Secondly, leadership is often less about mobilizing the converted than winning over fence-sitters and those opposed to the leader's interests (Heifetz 1994). Since I am concerned with change beyond leaders' authority, this study did not focus on this aspect of environmental leadership.

The archetypal perspective on how leadership achieves change is through Interpersonal Influence.<sup>1</sup> This perspective presumes an individual leader directly connects with and steers individuals or groups through charisma, inspiration, vision, and managerial technique. Leaders influence others' minds and emotions, which guides them to behave in ways desired by the leader.

One of the classic leadership dichotomies in the Interpersonal Influence perspective is the distinction between *transactional* and *transformational* leadership, which categorizes the nature of influence between the leader and follower (Burns 1982). The distinction between the two categories of influence is marked. Burns (1982) describes transactional leadership as leadership via negotiated exchange with followers, over such commodities as votes, dollars, jobs, etc; this relationship is solely instrumental and based on contingent reward. The exchange satisfies followers' lower needs such as physiological safety and belonging. Transformational leadership, in contrast, connects with an individual's higher needs of personal fulfillment and personal realization. As Burns describes it,

*"The result of transforming leadership is a relationship of mutual stimulation and elevation that converts followers into leaders and may convert leaders into moral*

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<sup>1</sup> The conceptual graphic at the end of this section illustrates the three perspectives on leadership influence.

*agents...This last concept, moral leadership, concerns me the most. By this term I mean ... that leaders and led have a relationship not only of power but of mutual needs, aspirations, and values...Moral leadership emerges from, and always returns to, the fundamental wants and needs, aspirations, and values of the followers. I mean the kind of leadership that can produce social change that will satisfy followers' authentic needs"*  
(Burns 1982: p4)

While Burns is apparently focused on human-based ideals such as liberty, justice, and equality, it is reasonable to assume that achieving a sustainably abundant society is predicated on some level of environmental quality, and this in turn qualifies as a value of transformational leaders.

Ciulla (2004) interprets Burns' work by saying that "leaders have to operate at higher need and value levels than those of followers. A leader's role is to exploit tension and conflict within people's value systems and play the role of raising people's consciousness....They do not water down their values and moral ideals by consensus, but rather they elevate people by using conflict to engage followers and help them reassess their own values and needs." (Ciulla 2004:14-15). In effect, leaders are champions and torch bearers of higher ideals that inspire others to find that place within themselves.

From this perspective, it seemed reasonable to suspect environmental leadership strategy would revolve around value-driven transformational leaders mobilizing people to struggle for shared aspirations of environmental quality and respect. By publicly advancing environmental values, they would inspire those values within others and create a shared social movement towards greater environmental quality.

In contrast with Burns' conception of leadership as driven by deeper and mutually-elevating morality, Weber (1924/1947) sees leaders influencing behavior through charisma (Weber 1924/1947). By winning people's faith through determination and personal magnetism, leaders can create great movements for change. I presumed that this classic view of leadership would not explain environmental leadership strategy, and that leaders would be largely unable to charm the masses towards environmental transformation.

In contrast with relationship-driven theories of Interpersonal Influence, managerial perspectives on leadership often focus on the role of the leader directing and coordinating group behavior. From this perspective, establishing a compelling vision, enrolling people to strive for that end, and helping individuals behave in ways contributing to desired outcomes are key leadership capacities. Bennis (1985) exemplifies this viewpoint and identifies four aspects of this type of leadership - management of attention, meaning, trust, and self (Bennis 1989). Leaders manage attention by providing clear directions or goals, and manage meaning through metaphors or models that make the direction or goal come alive to others. Managing trust through consistency allows the leader to maintain relationships with others, while managing self ensures the leader functions in ways employing their strengths. The net effect of these traits is making people feel empowered, significant, connected to a community, and excited to participate in achieving the leader's direction (Bennis 1985; Kouzes and Posner 1995). In this lens leaders focus on the future and the big picture, then help coordinate others to work towards steering the ship in the right direction.

Focusing attention on environmental issues and providing visions of how to tackle them seemed likely activities for environmental leadership. However, as Bennis and others write largely from organizational perspectives, particularly towards senior leadership of the CEO, they

assume largely captive audiences. I expected environmental leaders would need to be more resourceful and clever to successfully draw attention from people and organizations where they had no direct influence over or preexisting relationship.

All of the Interpersonal Influence perspectives focus on leaders as individuals pushing and orchestrating change, which contrasts with the Capacity Building perspective's focus on strengthening an entire community or organization's collective ability to learn and adapt. This perspective assumes that leadership provides constituents with tools and abilities that enable them to continually improve their collective behavior and outcomes relative to shared aspirations over time. Whereas in the Interpersonal Influence perspective a single leader is the central figure driving change, in the Capacity Building perspective the community is the central actor, and leadership is a distributed capacity.

Senge (2006) and Heifetz (1994) both offer perspectives on how leadership helps build learning and adaptive capacity. Senge (2006) defines five disciplines that enable an organization to be a "learning organization",<sup>2</sup> one that intelligently and effectively learns to achieve desired outcomes. The capacity for this change increases as individuals within the organization gain clarity into thought processes, create shared vision, learn collectively, grow in self-awareness, and most importantly perceive the complex systems influencing behavior. This last discipline of "systems thinking" is the keystone discipline integrating the other four by understanding the many systems – organizational, economic, political, social, and mental – that enable and constrain behavior. With large numbers of individuals adopting and using these disciplines, the organization greatly increases its ability to "learn" to create what its members collectively desire

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<sup>2</sup> These disciplines and techniques are equally applicable in communities and other types of groups, not simply formal organizations.

(Senge 2006). Senge (2006) defines learning as behavioral change, not simply a mental activity, leading to desired outcomes.

A somewhat similar perspective comes from Heifetz, who sees the primary work of leadership as helping communities adapt in response to challenges (Heifetz 1994). His conception of leadership grows from an understanding of two types of challenges faced by communities. In his view, leadership is necessary to help a community or organization that is faced with an “adaptive challenge” for which there is no readily-applicable solution (Heifetz 1994), which certainly describes many environmental issues. In contrast, “technical challenges” can be solved through application of existing knowledge, and therefore do not require nearly the turmoil or difficult value trade-offs of adaptive challenges.

Heifetz (1994) views leadership’s role in adaptive challenges as supporting others to clarify and prioritize values, to overcome natural psychological defense mechanisms seducing them to defer making difficult choices between values, and then innovating new ways to work and live that are better aligned with the changing reality. Leadership acts like a therapist helping individuals overcome defensive reactions to dealing with a given adaptive challenge. Heifetz, writing from a psychologist’s perspective on leadership, sees that individuals often need to make difficult tradeoffs and release some old ways of operating in order to adapt. Leaders must help individuals perceive the situation without sugar coating or defensiveness so they can respond effectively.

Both Capacity-Building perspectives claim great capacity for transformation, yet they also require exceptionally deep and sustained commitment by the individuals and communities that transform. Both perspectives acknowledge they require communities to engage in difficult and sometimes painful reflection, face uncertainty and complexity, and have large fractions of



the communities taking responsibility for collective outcomes. I expected that if environmental leaders were successful in approaching their work through these theories, they would create significant change. But the challenges inherent in these techniques, particularly in focusing attention and developing the will for change without any formal power, made their idealized application seemingly unlikely.

The final approach sees an actor's environment as the highest leverage path to behavioral influence, making Contextual Design the primary mechanism through which leadership achieves behavioral and psychological change. Context and design are equally important to this perspective. While context does not solely determine behavior, it has a strong influence, and by strategically designing context leaders can harness this power to achieve desired behaviors and outcomes.

This view stems largely from organizational-studies authors. While these authors presume leaders operate and have formal power within a traditional organization, the underlying principles of behavioral organization could also apply in other types of social systems and communities. Schein (2004) sees leadership within an organization and shaping its culture as virtually indistinguishable. Once the leader establishes a culture, it strongly impacts behavior and even perceptions of individuals within the organization. It also tends to reinforce itself over time, making it a durable institution that takes on a life beyond the leader.

In contrast, Senge et al. (1999) see culture as just one of the many systems – social, economic, political, etc. - determining collective outcomes. Leaders looking to transform behavior determined by these complex and massive systems must first identify key leverage points for change within the systems. Change efforts that are naïve to this underlying structure and its stumbling blocks to change often waste effort, fail, or even exacerbate the problem

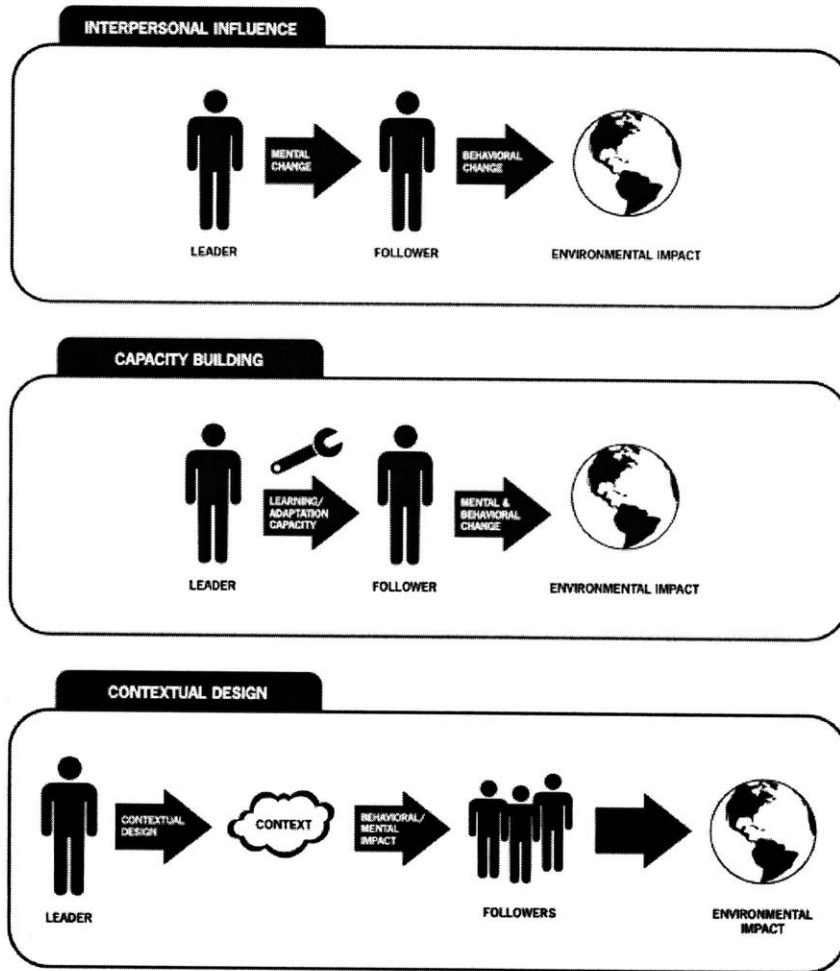
(Meadows 1999; Senge 2006). With this insight, leadership can then reinforce the processes and structures pushing systems towards favored outcomes, and inhibit processes preventing the system from achieving those objectives (Senge, Kleiner et al. 1999). Leadership's role is then strategically designing interventions to exploit leverage points and avoid or negate stumbling blocks within the system. In this systems view of behavioral organization and leadership, design is an essential leadership capacity. Senge (2006) even goes so far as saying that while many leadership roles are important, none "has a more sweeping influence on the ship than the designer." (Senge 2006:321).

A similar yet unconventional perspective on leadership comes from community-based social marketing (CBSM). CBSM aims to carefully tailor behavioral change interventions to idiosyncratic community contexts. While not falling under more traditional conceptions of leadership, CBSM is a discipline that shapes community's futures, placing it squarely as a leadership approach.

CBSM sees individuals' behavioral choices as a competition between alternatives, with the most attractive alternative being chosen most readily (McKenzie-Mohr and Smith 1999). CBSM and Senge et al. (1999) both perceive context, not individual agency, as driving behavior. By designing interventions to make desirable choices more attractive, CBSM strives to tilt behavior from the status quo to a new pattern (McKenzie-Mohr and Smith 1999). The CBSM methodology for designing physical and especially social contexts relies on altering a behavior's attractiveness by addressing the real and perceived barriers and benefits to that behavior (McKenzie-Mohr and Smith 1999). For example, by making recycling easy or inexpensive by providing free bins and curbside pickup, or encouraging people to sign commitments to recycle

their cans, CBSM practitioners make what might be a difficult, expensive, or seemingly trivial behavior easy, affordable, and morally important.

Figure 1: Three Perspectives on Leadership



CONCEPTUAL DESIGN BY CHRISTOPHER LYDDY | GRAPHIC DESIGN BY CITRÓNÁDE DESIGN

While influencing behavior through Contextual Design seems like a plausibly useful perspective on environmental leadership strategy, the potentially vast difficulties in changing large social, economic, or organizational structures without direct power appeared to be nearly insurmountable. I expected that leaders would use this strategy on small scales when possible,

perhaps in ways similar to that prescribed by CBSM, but that Contextual Design would be a distinctly secondary leadership approach.

Environmental education can also be considered a form of leadership, by directly changing hearts and minds about the reality and importance of environmental issues, which in turn influences humanity's behavior and impact (Leopold 1949/1964; Orr 2004). According to Orr, "the ecological emergency is about the failure to ... see clearly how utterly dependent we are on the 'services of nature' and on the wider community of life." (Orr 2004:32) He believes this ignorance produces a "cultural immune deficiency...that renders us unable to resist the seductions of technology, convenience, and short-term gain" (Orr 2004:32) that leads to environmental destruction.

Since the presently-damaged connection is what leads to our ongoing assault on nature, to create true environmental responsibility, education must impact more than intellectual and scientific awareness of environmental issues; it must combine this knowledge while fostering an emotional connection with nature. According to Stephen Jay Gould this bond is essential because "[w]e cannot win this battle to save species and environments without forging an emotional bond between ourselves and nature as well—for we will not fight to save what we do not love" (Gould quoted in Orr 2004: 43 ).With this connection, environmental educators then assume humans will act as stewards of the land. Leopold (1949/1964) describes this intellectual and emotional connection as the "land ethic," which then reflects "a conviction of individual responsibility for the health of the land." (Leopold 1949/1964: 221). This ethic "changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it." (Leopold 1949/1964: 204-205).

In this conception, environmental education can facilitate environmental leadership operating in all three leadership perspectives. By supporting leadership exerting Interpersonal Influence, education can directly motivate action. For leadership conducting Capacity Building, education can serve as intellectual and emotional resources in greening behavior. For leadership engaging in Contextual Design, education can help transform culture and shared norms. This suggests that environmental education could be an important component of environmental leadership strategy, and I expected it to be a common and essential leadership approach.

In summary, I presumed environmental leadership could encourage people to act more environmentally by three processes.

- Relying on Interpersonal Influence, environmental leadership directly influences targets through a variety of mechanisms. These mechanisms include direct persuasion, visioning, strategic planning, inspiration, and education, which in turn change target actors' minds, values, and behaviors.

- Acting as Capacity Builders, environmental leadership indirectly influences targets by supporting their ability to transform their own environmental relationship and impact. Leaders facilitate learning and adaptation processes that support innovation, value clarification, reflection, and collective visioning.

- Acting as Contextual Designers, environmental leadership designs individuals' contexts, which then influence their behavior and impact. These transformed contexts durably exert influence over individual and collective relationships with and impact on the environment. Contexts could be economic, technological, social, organizational, or political in nature.

As most leadership texts focus on leadership as a predominantly interpersonal activity, I expected the first mode would comprise the bulk of leaders' work, and that leaders would be

exceptionally effective at persuading or educating people to change their minds and behaviors about environmental issues. However, the latter two perspectives appeared to hold great potential for both understanding leadership strategy and creating deep environmental change. I expected that while leaders would create most of their impact through interpersonal influence, I would discover leaders occasionally acting as Capacity Builders and Contextual Designers.

## **Chapter 4: Analysis**

### **4.1 Analysis of Findings**

Based on review of leadership literature, I presumed environmental leadership change strategies would center on how to effectively impact people to act more environmentally primarily through Interpersonal Influence. Instead, the central finding arising from interview analysis was quite surprising, and did not neatly match existing leadership perspectives.

Environmental leaders exerted the greatest influence when designing and creating structures that influenced individuals, groups, and organizations over time; in effect, durable structures amplified and institutionalized their leadership. Structures were especially important in Contextual Design, but also assisted leaders with exerting Interpersonal Influence and facilitating Capacity Building. The reliance on structural design amplified leadership influence, so leadership not engaging in strategic structural architecture would have been far less effective.

Structure denotes anything leaders could design and create that would interact with the leader's target of influence. Structures ranged from the highly tangible, such as brochures or fences, to very intangible, such as social capital or mental frames. These artifacts became tools and allies that loyally served a leaders' purpose over time.

The focus on structures did not negate more traditional perspectives in leadership; instead, the two approaches were highly complementary. Often, it appeared that leaders would use their more traditional leadership skills to mobilize people and resources to create a structure, which would then serve as a durable, surrogate leader. Then, over time, the structure would continue exerting leadership influence with little or no further investment, freeing the leader to either utilize or expand the structure, or move on and develop new structures. Structures could exert an influence largely independent of the leader's ongoing activities, or they could directly

support further mobilization efforts. Interview after interview revealed that by creating organizations, resources, frameworks, and objects, leaders could amplify their personal leadership capacity.

Winslow's transformation of Nike illustrates the role and importance of structures, as well as the interaction between structures and traditional leadership efforts. At the outset, Winslow hatched the idea for a business team focused on sustainability within Nike. However, she did not have the authority to assign people to implement her idea. Using her vision - a structure in itself - as a seed, she started reaching out and recruiting influential designers to join the cause. Over time, she built a larger and larger community of people who were interested in forming a social structure around the idea of sustainability at Nike. With this influential and organized group behind her, eventually she was able to sell the idea to Nike's executive management, leading them to authorize the Sustainable Business Strategy team. This structure over time has been able to create significant changes in Nike's environmental impact and apparently its prioritization of environmental stewardship. Winslow did not simply "mobilize" transformation within Nike; she systematically built one structure after another, scaffolding her way to her objective of helping green the corporation. She would have been very hard-pressed to convince Nike leadership and staffers to transform the organization simply through direct persuasion; instead, she developed structures that amplified and embodied her influence, greatly leveraging her impact.

Organizational studies scholars have documented the important and complex role that non-human actors, such as artifacts and structures, can play in shaping social systems and behavior. They conceptualize social systems as "enacted systems" that influence and are influenced by people's thoughts and actions (Barley 1986; Orlikowski 2000). As one example of



an enacted system, Schein (2004) notes that people's words and actions generate culture, which in turn powerfully shapes their future behavior and thinking.

Barley (1986) and Orlikowski's (2000) work in this area illustrates how deploying a new structure – e.g., new technologies – interacts with and transforms existing enacted social systems and behavioral patterns. Barley (1986) demonstrated the potential power of this approach as he found new CT scanners transformed work patterns within a hospital, which in turn transformed entrenched power and status relationships between doctors and other staff.

On the other hand, structures naïve to existing social systems can have little or no effect, suggesting the need for careful design processes in each intervention. In Orlikowski's (2000) study of deploying a knowledge-sharing computer system at a consulting firm, the competitive organizational culture and structure effectively blocked employees from sharing knowledge, despite the computer system's ability to facilitate those practices. The computer system was only one structure required to change to achieve the ultimate objective of enhancing the firm's intellectual capital. Other structures that needed to change included performance evaluation, compensation, and organizational culture. Yet the executives orchestrating the intervention did not incorporate this holistic understanding into the intervention design, much to their later chagrin. This experience points to the importance of good design informed by deep systemic understanding, as advocated by Senge (2006).

To see the subtle power structures exert over social systems, consider the simple example of a dinner table. During meals most people focus on the food, drink, and conversation, and probably do not even acknowledge the table. But, if the table is large, many people can join; if it is small, dinner will be in a small group or solitary. If the table is too high or too low, everyone must sit and eat awkwardly, or perhaps move to the couch. Fancy tables encourage formal dining

with fine food, wine, and company, while plain tables encourage casual dining with comfort food and intimate companions. We usually think of the cook as the most important actor in shaping dinner, but our degree of adaptation to the table makes it a powerful yet virtually silent actor in shaping our meals. This structure exerts potent influence over the social behavior of dinner.

In an analogous fashion, environmental leaders designed and deployed structures into existing social contexts, which served to reconfigure the system and its behavioral outcomes. This approach applies Barley (1986) and Orlikowski's (2000) observations about the important role non-human actors can play in shaping human systems. Orlikowski's (2000) consulting firm demonstrated the crucial importance of appropriate design. The ability to artfully shape systems is largely due to good design of structures.

By a similar token, environmental leadership must often redesign multiple systems using newly designed and minted structures to achieve its objectives. The study's design focused only on environmental leaders who did not rely on coercive governmental regulations to achieve change. They had to redesign nongovernmental structures, including economic incentives, media strategies, social networks, even identities, to create the change needed. Individuals live in and are influenced by so many systems; environmental leadership appeared to make use of these many contexts, selecting the easiest to transform instead of the most obvious.

While I focus analysis on structures, it is worth noting that leaders did appear to engage in most of the activities predicted by leadership literature. They consistently achieved Interpersonal Influence through direct personal engagement, visioning, and attention management. They did appear at times to act as both transactional and transformational leadership. As predicted, environmental leaders did not appear to use charisma as a key strategy.

In light of the focus on structures, it was not surprising to find leaders conducting a significant degree of Contextual Design through quite an array of mechanisms.

Leaders also facilitated Capacity-Building, at least as conceived by Senge (2006) and Heifetz (1994), , but this comprised a relatively small fraction of their total efforts. The reasons for this were not entirely clear. I can only speculate and guess that leaders were often unable to focus and maintain sufficient attention from constituents to engage in the difficult work of learning and adaptation, although this did appear to be a powerful approach when successfully applied. To the extent communities learned and adapted, their transformations appeared largely driven directly by leaders and structures. This contrasted with Senge (2006) and Heifetz' (1994) conception of leadership imparting the capacity for difficult transformational work. Also, environmental education surprisingly appeared to play a less significant role in changing awareness of problems, solutions, and values than expected. As with other perspectives, education's effectiveness and use were also greatly impacted by structures of various types and its context.

In summary, environmental leaders appeared to exert behavioral and cognitive influence largely through strategically designed structures. Some structures served as tools enhancing the leader's Interpersonal Influence and ability to facilitate Capacity-Building, while others were the primary means for leaders to conduct Contextual Design. Structures appeared to be a crucial component in creating durable change. This novel perspective complemented, not replaced, existing perspectives on leadership.

Before exploring structures and their strategic impact, I first explore why structural design appeared to be an important aspect of environmental leadership strategy. I then provide an

analytical template for leadership structures, followed by detailed analysis of the structures themselves and examples of their use.

## **4.2 Why Focus on Context?**

Why did environmental leaders focus on designing structures, in particular those that reshaped context? I explore this question from three perspectives. I explore leaders' own thinking, give theoretical explanations grounded in social psychology, and pose a stylized example from economics hypothetically illustrating why this may be so.

Environmental leaders appeared to think, explicitly and implicitly, that making structures could be a more effective way to reach out and influence people. I was surprised to find a number of leaders explicitly disavowing attempts to directly change people's worldviews because this often led to nearly intractable conflict over abstract values. Most leaders instead appeared to think that creating tangible, practical ways for people to become more environmental was the most effective way to influence their behavior, and designing structures was the best way to help them change. A few leaders even hoped that the behavioral change might even flow upstream and influence individuals' minds and psyches. By changing their targets' behavior or social environment, they might be forced to reflect on their actions and reconsider their worldviews about environmental issues.

These practical and intuitive insights appeared strongly rooted in theories from social psychology, which claims that individual behavior is far more driven by social context than by conscious, rational choice (Asch 1955; Milgram 1963; Fischer, Schaver et al. 1990; Greenwald and Banaji 1995; McKenzie-Mohr and Smith 1999; Goleman 2006; Zimbardo 2007). Zimbardo (2007) assembles an impressive array of literature and real-world cases to argue that many "evil" individuals – those who "know better but do worse" – act out because their context overwhelms

whatever individual morals and preferences they may have. He cites Asch (1955) and Milgram's (1963) classic experiments in creating social environments that consistently elicited complicity of average citizens to obviously insane or immoral actions as evidence of the "Lucifer Effect." – the subversion of morality by context. Environmental leaders effectively reverse this effect by creating contexts that elevate behavior above standing environmental morality .

From the organizational studies perspective Senge (2006) and Schein (2004) implicitly corroborate Zimbardo's (2007) claim. Schein (2004) sees existing culture as moderating individual's thoughts and actions, while Senge (2006) sees systems as the determining factor underlying most individual's behavior. Echoing social psychology, these perspectives lift the burden of explanation from individuals and place it on their context.

While Zimbardo and others offer an explanation of the behavioral power of context, Weick corroborates leaders' speculation that changing behavior can trigger mental changes (Weick 1995; Weick, Obstfeld et al. 2005). He counterintuitively finds that instead of rationally arriving at our thoughts and perceptions and then using these to inform our behavior, we act first and later backfill a consistent story about why we acted as we did. He refers to this process as "sensemaking," as we gain sense through acting. In this perspective, changes in action precede cognitive change. This would explain why leaders so firmly preferred changing behavior instead of minds.

The value of context from the perspective of resources and investment can also be demonstrated through a simple thought experiment in leadership "economics". Imagine that leaders are producers of "change" in behaviors or psychology. In this example, there exist two types of leaders, Activists and Architects, that have different approaches to producing change. Activists see change as arising from their personal influence on individuals, whereas Architects

see change as arising from individual's interactions with a different context. Imagine that in the initial period of leadership influence, the Activist spends all of his leadership effort influencing a targets' behavior, which nets one unit of change. In the following period the Activist creates one unit of influence again. In contrast, assume the Architect invests in durable structures that transform context in ways that induce change in environmental impact, and it takes all her effort to produce a structure that has one-half the effect of the activist. In the first period, she will have one-half the impact of the Activist. But she will have equal impact in the second period, and increasingly more impact from the third period on.

This fictional example illustrates the important point that leadership can quickly become more effective by cleverly investing in structures than exerting influence directly, a gap that becomes progressively wider over time. This holds true even if the Activist is more effective per unit of leadership effort than either the Architect or the structures she creates. Over time, the durability of structures outweighs an individual leader or structure's efficacy. It also points to the importance of structural durability; the lower a structure's "depreciation," either in terms of ongoing leadership effort to maintain the structure or efficacy, the more valuable the structure is.

### **4.3 Analysis of Structures**

A core strategy of environmental leadership is creating structures that amplify and institutionalize leaders' behavioral and cognitive influence. I defined structures as any non-human form that interacted with a leader's targets of influence. Analyzing interviews revealed the types of structures ELs created, demonstrated how they functioned, and offered some evidence as to why they were effective, findings I discuss in the following sections.

Leaders identified structures achieving four purposes, including supplying, community-building, integrating, and mirroring. Supply structures enabled environmental actions;

community-building structures organized people around environmental outcomes; integrating structures aligned non-environmental interests towards environmental outcomes; and mirror structures triggered reflection about environmental impact. Purposes were not mutually exclusive. Some structures operated largely independently of leaders once created, while others primarily served as tools in a leader's hands. Each type of structure had different sub-types, distinguished by the mechanism used to achieve the structure's purpose.

Structures took a diversity of forms. These included plans and policies, reports, networks, competitions, new organizations and initiatives, knowledge, and many more. While further study is needed to fully understand these forms, leaders appeared to select forms that enhanced ongoing durability of the structure, eased construction and design, and interacted conveniently with the target population..

I explore each structure through the following analytical template. I first describe the structure's purpose, give a brief description of how it facilitates environmental change, and list its subtypes. I then explore each subtype, how it achieves the structure's central purpose, and how it exerts or amplifies leadership influence, with examples interspersed to concretely illustrate the abstract points.

I also connect the aforementioned leadership perspectives to each structure, demonstrating how structures act to amplify and exert leadership influence. From the Interpersonal Perspective, I include how structures exerted leadership influence as characterized by Burns' (1982) dichotomy of leadership. The dichotomy of transactional and transformational influence would seemingly only describe personal connections between leaders and followers. However, structures could create exchanges and contingent rewards to influence actors in a similar manner as transactional leadership, and structures could potentially facilitate moral

transformations and consciousness-raising among individuals, which appears to have quite similar effect as transformational leadership. Through the Contextual Design lens, I describe how structures may influence culture, the processes supporting and inhibiting environmental behaviors, and the relative attractiveness of those behaviors. I also explore how structures facilitated managerial-style Interpersonal Influence through visioning and group coordination, Capacity Building among a constituency, and environmental education.

#### **4.3.1 Supply structures**

*Supply* structures provided resources or capacities that enabled environmentally preferred actions by making them possible, easier, less risky, or more attractive. These comprised resource structures including *funds* and *markets*. *Markets* also served as one type of capacity structure, which also included *evaluation frameworks, products, demonstrations, information and technical assistance, practices, and incubators*.<sup>3</sup> Inducing change in individual, community, and organizational behavior appeared most successful when offering both incentives to change and ways to overcome limitations. In contrast, incubators served as skunkworks and factories of leadership structures, creating their impact indirectly through other structures.

*Resources* influenced the economic limitations and incentives on a target's behavior. Organizations, communities, and individuals frequently lacked the resources or capacities enabling them to transform their behavior without damaging their economic viability, at least in the eyes of the decision makers. As Darcy Winslow colorfully described this reality, the challenge in transforming Nike's environmental footprint was like "changing the tires while driving 100 miles an hour" – she had to create environmental transformation in its underlying machinery while keeping the company functioning competitively (Winslow 2007). Given the

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<sup>3</sup> Although ELs I interviewed did not mention these, I suspect at least one more types of structure belongs on the list. Green *brands* creates positive incentives for greening products or organizational behavior through financial incentives and a positive impact on reputation.



little latitude afforded for change, resources often addressed limitations more than incentives for change.

Many environmental leadership targets placed low priority on environmental issues in and of themselves, so providing *fund* structures could push change over tipping points. For example, ranchers in Seth Wilson's community were economically marginal businesses; spending thousands of dollars in bear conflict reduction analysis or fencing would have made their marginal operations unprofitable. By going to a division of the US Department of Agriculture (USDA), Wilson was able to secure a pool of funding sufficiently large to subsidize fences in the highest conflict areas. With these resources in place, ranchers were then able to make the necessary investments. However, the obvious drawback with providing funds is they are limited and difficult to secure, making this a successful yet challenging strategy.

Resources available through supplying structures could of course create positive incentives for change. Establishing *markets* for green goods and services increases opportunities for environmentally responsible economic activity. Howard Silverman described how the NGO EcoTrust facilitated creation of a market for local produce by bringing together prominent chefs and farmers at mutual education and networking forums in Portland, Oregon. Once each side knew about each other and understood the other's wants and needs, they were able to create a local food exchange market that has thrived without further EcoTrust efforts. Economically, this market reduced the cost of purchasing local food, providing incentives to chefs and other consumers, while increasing the profitability of farming in the Portland area. Environmentally, the increased reliance on local food and farming has reduced the infrastructure and energy expenditure required to put food in Portland's restaurants, while also offering farmers a stronger economic base to resist development pressures and preserve their agricultural land..

While resource structures impact the relative attractiveness of items, *capacity* structures make previously challenging green behaviors become possible or easy. In this example, the market centered around a *product* which gives consumers the capacity to green their food purchasing habits. Where consumers once could eat local only by going to their local farmstand and cooking at home, they now can also eat local while out on the town.

Not only did EcoTrust's efforts directly influence individual's incentives and capacity to act environmentally, but it also created a *demonstration* supporting the creation of similar structures. Building effective, practical structures and showcasing them can aid efforts to replicate the structure by seeding other leader's thinking and inspiring them. On a practical level, demonstration structures reduce the investment cost and risk of replication projects by creating a model, increasing knowledge about how to create the structure and by establishing a track record of its outcomes, flaws, and challenges. This is important not only to other leaders who might potentially push the structure forward, but also for convincing those who might resist change. Having a tangible demonstration of a structure's plusses and minuses made converting hesitant or resistant actors significantly easier than persuading them with even well-considered speculation. EcoTrust's experience with building Portland's local food market from start-up project to successful institution created the knowledge and strong sense of possibility around these markets. By piloting the way to change, it reduced the risk to other change advocates and inspired them to replicate the structure in other cities.

*Information and technical assistance* structures helped actors understand how to improve their environmental impact or relationship. In Wilson's bear conflict example, he was able to map bear conflict hotspots which ensured efficient investment in new infrastructure while limiting and justifying inconvenient changes in practices.

Another example of a technical assistance structure is an *evaluation framework*.<sup>4</sup> By creating ways to measure and link environmental quality with actions, individuals gain clearer and more tangible guidance on how they are improving their impact (or not) on nature. Peter Yolles of The Nature Conservancy (TNC) described how TNC taught its organizational partners how to better evaluate environmental threats, opportunities, and responses by using TNC's strategic analysis framework. Having a disciplined approach to environmental strategy formulation was something that a number of leaders mentioned as surprisingly uncommon yet essential for effective action, so this approach enhanced other organizations' effectiveness. The shared framework and common planning objects also facilitated coordination and mutual understanding among TNC and its partners (Star and Griesemer 1989), apparently building collective capacity to address common issues.

While TNC's framework evaluated complex conservation challenges, the New Hampshire Carbon Challenge (NHCC) provided evaluation structures to help individuals improve their carbon footprint. NHCC provided a checklist of simple household and personal lifestyle changes with their estimated carbon savings. NHCC leaders also demonstrated their personal short- and long-term strategic planning to reduce their carbon footprint, encouraging others to do the same. By creating feasible options and suggesting to others that they develop a basic structure to their personal change process, they broke the massive problem of combating climate change into very discrete and readily achievable battles that anyone could win.

The TNC and NHCC frameworks addressed actors with fairly high levels of flexibility, but technical assistance might be even more valuable when target actors are constrained by existing performance requirements yet lack support and flexibility to experiment with greening. According to Leith Sharp of the Harvard Green Campus Initiative (HGCI), Harvard University's

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<sup>4</sup> Later I discuss how these can serve as mirroring structures.

organizational structure forces facilities personnel looking to green operations to undertake significant personal risk and contribute uncompensated time to drive environmental change. Most facilities positions at the university have job descriptions demanding steady managerial performance, but exclude environmental concerns from job descriptions. Therefore, employees are not rewarded for taking risks that can lead to successfully greening practices, an incentive structure strongly inhibiting behavioral change.

The Harvard Green Campus Initiative's (HGCI) approach to facilitating change in this setting is assisting individuals to alter their behavior with minimum risk and investment, while directing credit for positive change to their partners. HGCI provides the initial burst of start-up resources and expertise to identify the environmentally friendly changes a facilities professional can feasibly make. This offloads much of the risk, time, and hassle of change from the individuals who lack the willingness or ability to take those on. HGCI's research and coaching results in a new *practice* the facilities professional can then take over without additional investment. While this approach largely reduced barriers to change, HGCI also created incentives for change by gaining highlighting their partners through the press.

The HGCI not only conducted technical assistance, it also served as a textbook example of an *incubator* structure. Much of the work of ELs was creatively designing structures that helped others become more environmental; it is not surprising that they institutionalized and enhanced this capacity by creating supporting organizational structures that innovated, developed, and launched other structures. Incubators served as the skunkworks and factories of environmental leadership.

Instead of direct investment in structures creating on-the-ground change, incubators served as indirect investments in the social and organizational machinery that could produce

those structures directly causing change. This indirect strategy appeared quite powerful. The incubator served like a factory of other structures that served on the front lines of creating environmental change. Over time a factory has much greater total impact than any single item it outputs.

Supply structures exert direct forms of leadership influence. Resource structures satisfied actors' material needs and constraints in exchange for acting in an environmentally desirable way, serving as institutionalized transactional leadership. These structures altered the relative attractiveness of behaviors, and largely addressed factors inhibiting change. Capacity structures could have a similar effect by helping to target or enabling access to resources. Structures such as evaluation frameworks and demonstrations could serve as visions of ideal behavior or new structures coordinating and inspiring group action. Evaluation frameworks also served as a form of environmental education by tying individual behaviors to impacts, and as a tool supporting learning and adaptation around environmental issues. While most supply structures centered on limitations to behavioral change, incubator structures institutionalized processes advancing change by creating structures.

Supply structures may also exert an indirect transformational effect on individual consciousness. To the extent they do, it is likely an outcome of inducing behavioral change on a transactional basis, which as noted previously, may be a more effective way to change individual psychology (Weick 1995; 2005). Evidencing this view, Leith Sharp of HGCI noted that facilities staff often become progressively more excited as they gathered more experience running green initiatives, which probably were the direct result of HGCI's initial resources. ELs did not report a major effect of resources on culture, although other work suggests that behavioral changes do shape culture (Schein 2004).

### 4.3.2 Community Building Structures

*Community building* structures organize existing communities, or create and organize new communities, towards achieving environmental outcomes. Forming collectives that embrace a vision of change creates powerful social vehicles for transformation. Individuals joining these initiatives go from solitary actors to agents in a larger movement for greening. Community-building structures fall into two categories, *social dynamics* and *community organization*. *Social dynamic* structures establish or strengthen the community's intentions and behavior. Sometimes ELs use social dynamic structures independently, but often they are integrated with *community organizations* to conduct base building. Community building structures can exert powerful influence on collective behavior.

*Social dynamic* structures governed behavior through a variety of peer pressure and influence mechanisms. Social dynamic structures, including *competitions, recognition, challenges, accountability and commitment mechanisms, norms, and fun*, influence the community's intentions and behavior. They can be established by physical artifacts or structures lacking physical incarnation, and persist because of external community pressure or intrinsic commitment.

Mark Orlowski and the Sustainable Endowments Institute (SEI) helped create change by establishing two social dynamics relying on extrinsic motivation. Orlowski triggered the dynamics through cleverly designing an artifact – a report grading sustainability practice at 100 prominent universities and colleges. The grades naturally triggered *competition*, providing a potent incentive for positive change, between the reputation-sensitive institutions. Issuing the report annually also enabled internal competition, trying to annually improve on the prior year's performance. At the same time, by breaking the report into a number of distinct categories,

Orlowski made it likely that each school would merit *recognition* as a “Campus Sustainability Leader” in one or more categories, creating a positive extrinsic motivation to perform well.

Exemplifying a different approach, the New Hampshire Carbon Challenge (NHCC) generated two types of social dynamics, each established through personal interaction and sustained through intrinsic motivation. The central influence mechanism of the NHCC is a *challenge* to lower each household’s annual greenhouse gas emissions by 10,000 pounds, proposing a bar for each household to exceed. The challenge sets a concrete and achievable behavioral goal inspiring action. The NHCC’s leaders reinforce that challenge by asking individuals and households to *commit* to that goal, which creates a *self-accountability* mechanism. The pledge to meet the challenge can be taken anonymously, with no one other than pledge-takers able to detect success or failure. Even if an outsider could detect failure, they would be totally unable to enforce any sanctions against the pledge-taker. However, the pledge influences behavior by making individuals feel compelled to be consistent with their stated intentions, which CBSM literature finds to be a highly effective tactic (McKenzie-Mohr and Smith 1999). The firm declaration of positive intention coupled with the negative emotion released by failing to abide by the commitment then becomes the incentive for greening behavior.

The NHCC leaders also established *norms* within their social networks by interacting with their family, friends, and targets of influence. Establishing a code of appropriate and inappropriate conduct could generate extrinsic incentives by desire for approval and avoiding social sanction (Ajzen 1991), while also creating internal standards and morality that actors could aspire to. The genesis of the project occurred when housewife Julia Dundorf insisted her women’s group collectively conduct household energy audits and share their results with the

group, simultaneously setting norms about appropriate behavior reinforced by an accountability mechanism. Chris Skoglund and his wife agreed to a household norm that they would reduce their carbon and energy footprint wherever possible. When Skoglund occasionally slipped by not meeting one of his own behavioral change objectives, such as not hanging out laundry to dry, his wife would point out when he was failing to achieve his own lofty standards. This provided him strong – and given his commitment, welcome – incentive to overcome his resistance and transform his behavior.

Although many social dynamic structures combined social sanction and voluntary commitment, I included them for two reasons. For one, despite their reliance on some level of extrinsic influence, social dynamics typically avoid the government’s coercive power.<sup>5</sup> Second, most social dynamics required some kind of reciprocity, which required actors to consent to the dynamic before they could be influenced by it. For example, if an actor refused to accept norms regarding recycling and energy efficiency, then the disapproving reactions of others that support these norms would be easy to dismiss, giving the others little influence. However, if an actor bought into those norms, then began flouting them, the disapproval from others would create pressure corralling them back into the flock.

Not all social dynamics require reciprocity or social sanctions to be effective; *fun* can also be a powerful motivator. For example, Jude Hobbs taught people how to create backyard permaculture landscapes that could provide habitat for various species and reduce rainwater run off, while also being aesthetically pleasing and providing berries and other foods. This created a fun activity for those who enjoy gardening and landscaping, designing, wildlife watching, and

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<sup>5</sup> Government run mandatory disclosure programs, such as the U.S. Toxics Release Inventory, arguably use the government’s coercive power to generate social dynamics of shame around environmentally damaging actions.



eating. Through Hobbs' training, individuals could develop a hobby that just happened to carry an additional benefit of improving storm water management and creating animal shelter.

The examples mentioned illustrate how social dynamics help define morality and leverage emotions to spur individuals to higher levels of environmental behavior. These social and moral structures generated tensions, pressures, and energies that shaped behavior in target populations over time. They can create transactional leadership influence by conferring good reputations and acceptance within the community. More powerfully, they can create mutually elevating, transformational and moral leadership towards environmental outcomes, as the Skoglunds demonstrated. The mutual support and elevation leads to learning and adaptation towards environmental objectives, which can overwhelm the inertia, laziness, and expense inhibiting change. In effect, social dynamics created peer support and pressure around consumption and environmental impact. Making green behaviors morally attractive and socially sanctioning destructive behaviors clearly changes the relative attractiveness of an actors' choices. By transforming culture through these dynamics, leaders can exert powerful pressure that takes on a life far beyond the leaders' direct support and influence.

While these social dynamics of moral elevation may require internally motivated participation, even inherently extrinsic motivations could be quite effective at encouraging adaptation, neatly illustrated by the SEI report case. Recall that the report strategically blended two types of pressure – interschool and internal competition - with praise, carefully moderating the level of critique. The joint critique and praise appeared to create what Heifetz (1994) describes as a “holding environment,” in which leaders apply carefully balanced pressure to encourage actors to adapt and evolve themselves. With tepid pressure, actors will not overcome their internal attachment to the status quo and resistance to change, but with too much pressure,

actors' defensive mechanisms activate and push back against the leader and change efforts. By balancing critique with praise, Orłowski managed to strike a chord and create an effective holding environment facilitating adaptation in 100 leading colleges and universities around endowment responsibility.

Social dynamics create tensions between individuals and actions; when imparted to groups of individuals they shape *community organizations* dedicated to collectively achieving some environmental objective. The organized community could center on any type of common identity, including geographical, organizational, professional, or personal interest. To create these entities, ELs first coalesced existing social connections or established new ones to create formal organizations, change groups wholly within some larger entity, or social networks spanning various social boundaries. Leaders then imparted and fostered social dynamics conveying direction to the organization, transforming it into an entity echoing and amplifying the original leadership intention. Applying social dynamics created an easier vehicle to direct that could also take on responsibility for change independent of its original leader, formed a social group supporting actors in creating change, and became a larger entity convenient for integrating new individuals and aggregating resources. The net result was a durable vehicle with significant mass and inertia for change.

The organization's collective commitment to greening and social interconnections provided a powerful structure leadership could influence more easily, and hopefully would eventually live beyond the influence of the originating leader. Winslow's community organization efforts within Nike were a textbook example of this structure. She actively filtered and recruited a team of influential product designers within the company's Advanced R+D based on their interest in promoting sustainability to form the initial Sustainability team. While she

only selected individuals with preexisting interest in sustainability, they were originally isolated and not functioning as a community. Winslow's role in building community was identifying those individuals and forging a coordinated mass from the once-disconnected pieces. Then she amplified and aligned this collective interest by engaging in various sustainability activities, such as cataloguing and toxicity testing many of the thousands of compounds involved in making Nike's end products. This information guided Nike's efforts to reduce or eliminate harmful compounds in products and production processes without compromising product quality.

Inculcating the ethic and vision grew the organization's capacity to act in a coordinated way towards the objective even without the initiating leader's direct engagement. Ideally, community organization members would internalize the social dynamic so deeply as to become leaders in their own right. An example of this occurred with Penn Loh and Alternatives for Community & Environment (ACE) as they ran an urban youth empowerment program. ACE staff asked youths to define their environment, then injustice, then asked them to combine them, helping them form their own concept of environmental justice. Many youths became distressed by the central environmental injustice affecting them – youth violence. They organized themselves and exercised considerable leadership in identifying lack of summer employment as a root cause of youth violence, then mobilizing themselves and successfully lobbying Boston city government to provide more youth jobs funding. Loh and ACE's influence was not directing the youth, but in helping them internalize ACE's morality and sense of empowerment.

Community organizations not only provide a common base for engaging challenging issues, but also a social identity grounded in transforming environmental objectives that could serve as ballast . By affiliating with others around a common purpose, individuals made a choice to pursue an objective, and then served as a mutual support network while confronting an

entrenched status quo of any type. The common direction created an energy that made it easier to push forward, and created bonds that naturally drew people together.

Solidarity was important when interacting with cultures and groups that were not directed towards environmental outcomes; the community organization could serve as ballast to keep individuals grounded in environmental principles in the face of inertia or resistance. For example, Chris Skoglund of the NHCC mentioned that sometimes his wife would point out when he was not achieving the maximum level of responsibility regarding their household carbon emissions. Sharing a common intention and social bond around that objective enabled them to gently pressure each other into higher levels of responsibility, overcoming resistance from society and their own habits to doing so.

The community organization provided a recognizable entity that outsiders could join, making it easier to draw and attract new individuals to the effort. Kate Parrot, a student at the Massachusetts Institute of Technology (MIT), played an entrepreneurial role in establishing the MIT Student Generator, a planning forum uniting students from across the Institute to conduct projects reducing campus' energy and environmental footprint.<sup>6</sup> The existing student groups and teams that participated increased their mutual interconnections and coordination, forming a larger mass capable of drawing increasing faculty and administration attention. The Generator also created a visible brand and meeting space that enabled previously unattached students to join the movement with little effort, leading it to grow organically over time.

Organizing a community enhanced its power to create change by aggregating individuals, resources, and creating an entity that could utilize more specialized, effective, and better-positioned resources to achieve its objectives. Resources could include expertise, important perspectives and knowledge conferred via position within other networks, and individuals'

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<sup>6</sup> I also participated actively in this process.

connections and credibility within other networks or groups. The larger pool of resources meant that a wider diversity of assets and capacities were available enabling the group to use more appropriate and therefore effective tools. One leader mentioned how linking with a media-savvy activist and environmental lawyer created a rich pool of expertise that each individual within the network could draw upon when needed. This enabled the network to effectively address the full range of complex issues comprising an environmental conflict, a capacity that was unavailable to the individuals in isolation or within their respective organizations. Leaders of the New Hampshire Carbon Challenge (NHCC) actively recruited individuals from a wide range of social networks and communities to present their message; each new leader's greater credibility within each network enabled them to have a greater collective influence.

Forming community organizations could greatly reinforce processes of change by pooling people and resources into more durable, focused, and powerful aggregations. By connecting those with similar environmental sentiments, organizations could create morally transforming environments raising consciousness and solidarity. Forming collective identity and community with social norms and commitments could significantly alter the attractiveness of environmental behaviors by sanctioning and praising various activities. Finally, creating community around particular topics often led to social learning, as individuals shared tips and encouragement serving as a social support network.

#### **4.3.3 Integrating Structures**

*Integrating* structures bind environmental and other desired outcomes together to harness target actors' existing habits and self-interest towards achieving environmental objectives. Effective integrating structures connect with an actor's underlying worldviews and motivations, such as affluence, aesthetics, health, morality, and attachment to place.

Integrating structures include *frames* and *artifacts*. *Integrating frames* are descriptions or stories that interpret environmentally beneficial actions or objectives as having positive impacts on non-environmental objectives. In contrast, *integrating artifacts* married environmental and non-environmental objectives and embedded them into a single structure used by target actors. These artifacts, which created impact by replacing less environmentally-friendly alternatives, could include technologies, objects, signs, analytical processes, etc. While both subtypes took very different forms, they often functioned in very similar ways, so I discuss them as one except as otherwise noted.

Integrating structures enabled environmental leadership to recruit environmentally unconcerned actors to actively help achieve environmental objectives. Several ELs specifically disavowed directly changing values and worldviews as too conflict-laden and difficult. Integrating structures could influence behavior without forcing ELs to undertake the largely thankless task of attempting to transform any actor's worldviews or values. These structures also helped ELs avoid preaching that actors should compromise their other interests to "do the right thing," a noble but rarely inspiring request.

Instead, integrating structures served as a convenient lens focusing behavior on environmental objectives without fundamentally realigning underlying value sets or power structures. These structures seemingly offered an alternative to the typical social movement perspective that views collective action as the power source needed to compel an established opposition into making concessions (Tarrow 1998). In contrast, ELs peacefully converted potential "opposition" to allies by forging mutual interests through integrating structures. This enabled ELs without formal authority or support from enraged masses to steer other actor's behavior. Because the integrating structure created a durable alignment of interests, these

partnerships were likely to be stronger and more durable than alliances based on political expediency.

By connecting with actor's core values, integrating structures could certainly create strange bedfellows for environmental leaders, which testified to integrating structures' power to create peaceful and durable environmental change in potentially contentious circumstances. One interesting example came from the business world. Any financial investment's primary objective is to generate profits, making investment funds and corporations notoriously insensitive to environmental considerations. Yet two ELs, Frank Dixon and Graham Sinclair, were able to harness this objective by incorporating environmental considerations into financial analyses. These analytical products accurately correlated environmental and financial performance, producing credible investment advice that helped investors with their primary goal of greater returns. By channeling investors' capital towards environmentally responsible companies, the analytical frameworks could influence investor and corporate behavior over time. Creating such a high level of influence over how environmentally disinterested investors allocated their money testified to this integrating structure's soft power.

Integrating structures appeared capable of not just creating accidental environmentalists, but of driving deep transformations in unlikely actors. as evidenced by the US Army's recent and dramatic greening program. Michael Cain, the director of the US Army's Environmental Policy Institute (EPI), revealed how his office has been central to the movement within the Army to frame environmentally-positive attributes in military technology as enhancing military effectiveness. This frame has led the Army to launch a dramatic greening program, despite the fact that the organization is hardly led by treehuggers.

Energy efficiency and lower toxicity usually are considered environmental, not military, objectives. But from the Army's perspective, fuel and energy efficiency reduce the cost of military operations and the number of soldiers that must serve in defenseless and toothless supply convoys, so the Army is increasingly viewing fuel efficiency as increasing total resources and soldiers available for combat operations. Less toxic materials reduce compliance requirements and costs while allowing soldiers to function with less cumbersome gear and risk, so the Army now sees toxic chemicals as an unnecessary burden and expense.

In both cases, the perception that greening procurement practices increases military effectiveness and efficiency has taken root. Now the Army has begun demanding and deploying more efficient vehicles, renewable power sources, and less toxic chemicals (at least the ones that aren't intended as weapons). The powerful integrating frame – that environmental considerations could make the Army a more effective fighting force – has been transforming the Army's social systems, including procurement and management practices. These changes have in turn changed the technical systems and practices causing on-the-ground impact. At an abstract level, the Army has accepted this frame so deeply that is now translating its integrating frame into integrating artifacts, further locking in its transformation.

Integrating structures exert leadership influence in a number of ways. As these structures help facilitate fulfillment of actors' self-interest, it naturally leads them to also behave in environmentally friendly ways. This creates an explicit or implicit exchange between actor and leader, effectively exerting a transactional influence over the actors' behavior. Structures are also capable of much deeper influence; to the extent that integrating structures unify perceptions of self and environmental interests they exert a potent transformational influence over actors'



morality and psychology, a topic discussed in more detail in the following section on Mirror structures.

Integrating structures were capable of reshaping the processes driving change. By incorporating objectives of self-interest, integrating structures strongly encouraged targets of influence to actively strive to achieve environmental objectives, dedicating necessary resources and accepting necessary compromises to drive change. They made greening a winning proposition, not a sacrifice. Integrating structures also covered actors who might lose face by acting environmentally, facilitating cultural change. In the Army, it is now acceptable to promote fuel efficiency and other environmental concerns. It is hard to envision Army personnel pushing these changes on the grounds that global biodiversity or climate change is at stake, but the integrating frame of military effectiveness now makes this argument defensible, if not laudable, within the organization.

#### **4.3.4 Mirror Structures**

Mirror structures trigger reflection capable of transforming individuals' self-consciousness and behavior regarding their environmental impact. They might influence how people view their responsibilities to the planet and other humans, and illuminate how misaligned their behavior or perceptions may be from that ethic. These realizations may come from new awareness of how personal actions impact the local and global environment, or by clarifying and strengthening environmental values.

Mirror structures include *reflection spaces*, *evaluation mechanisms*, and *mirror objects*. *Reflection spaces* are social forums and interactions facilitated by an EL that help actors consider and connect their behaviors, environmental outcomes, and their ideal world. *Evaluation mechanisms* are analytical structures that enable actors to better align their behavior towards

environmental interests. *Mirroring objects* are artifacts with environmental properties that tangibly contrast with existing habits, norms, or worldviews. This contrast thrusts an alternative perspective and morality in front of individuals, instigating reflection and moral inquiry that might transform an individual's otherwise-entrenched perspective or value system.

*Reflection spaces* are social forums and interactions facilitated by ELs that impact targets' conscious minds leading to changes in their environmental impact and behavior. These spaces could incorporate *environmental education*, *critical reflection*, and *visioning* and *values-clarification*. The structural design of these forums was crucial to their success.

*Environmental education* (EE) helped individuals understand scientific information, interpret it in the context of individual and collective actions, and revise their behavior and perceptions in light of the new information. Leaders described how EE's structure and the context of its delivery was crucial to its success, perhaps more so than the content conveyed, suggesting leaders needed to orchestrate the context for delivering information. Environmental leaders' experience suggested EE was most effective when it connected intellectually *and* socially with an actor. Information was more likely to be taken seriously when presented by a credible individual within an actor's identity group or social circle. Concretely put, ranchers were apt to listen more closely to their community's best-respected ranchers than Al Gore, even if they delivered identical messages. Social movement scholar Doug McAdam (1996) confirms this perception by noting that informal social groups are essential for interpreting information presented by activists and their social movements, a process that largely influences whether and how strongly actors resonate with the movement (McAdam 1996).

Environmental leaders designed outreach strategies to take advantage of this phenomenon by soliciting prominent locals, and local civic groups and social networks to spread their

message. Putting this principle into practice, leaders of the NHCC recruited individuals within snowmobile clubs, not generally known for their ardent environmentalism, to deliver information about climate change. By recruiting these individuals within otherwise-closed social environments, NHCC's leaders were able to diffuse their message more broadly and deeply. This channel granted or amplified their credibility and impact in a way that information alone could not.

Actors also responded more strongly to EE when presented information about threats and solutions in tangible, not abstract, forms. Expressing environmental issues through a person's life experiences, such as harm to something the actor held dear, appeared to elicit emotional responses more likely to translate into action. For example, Bill Burtis of Clean Air Cool Planet expressed climate change to New Englanders not through graphs of rising CO<sub>2</sub> concentrations or changes in global mean temperature, but in graphs of total days of snow cover, date of first frost, and date of first flower blooms. He struck a nerve by pointing out the threat global warming posed to the local charismatic megafauna, the sugar maples that create the region's spectacular fall foliage. Referencing Stephen Jay Gould's comment that "we will not fight to save what we do not love" (Orr 2004:43), telling stories through these tangible symbols and defining features of New England connected with locals in ways that scientific information did not. Presenting a threat to something individuals comprehend and care about triggers an emotional response, which often exerts a stronger behavioral influence than the rational thoughts impacted by scientific information (Fischer, Schaver et al. 1990; Damasio 2005; Goleman 2006).

Leaders made EE even more emotionally resonant by expressing environmental information as a particular structure that I call an *activation story*. These stories coupled crisp, non-technical descriptions of an environmental issue with practical and feasible actions actors

could take to combat the problem. For example, leaders of the NHCC pointed out how by 2100 New Hampshire's climate could mimic South Carolina's climate today because of warming from human-emitted greenhouse gasses. This served to disturb people sufficiently to reconsider what they were and were not doing to confront global warming. Individuals who became upset at such a dramatic shift in their weather, which struck at a core regional identification with cold snowy winters, activities like skiing and snowmobiling, mild summers, and vivid foliage, could have been overwhelmed by the daunting global nature of the problem. But NHCC coupled this type of information with simple steps individuals could take to reduce their carbon footprint, such as replacing lightbulbs with compact fluorescents, drying clothes on a line, and buying power strips for all electric appliances to eliminate power usage when appliances were not in use. Despite the global problem, presenting such simple, discrete steps empowered people to engage the issue.

Leaders themselves were often the best evidence of the efficacy of presenting information this way. Julia Dundorf described how another leader, Denise Blaha, managed to inspire her so deeply through a very similar activation story regarding climate change. After becoming so upset she was unable to sleep, Dundorf got out of bed the following morning and fired off an email to her women's group insisting that they should conduct carbon audits of their homes. From that day onward, Dundorf has been passionate activist against climate change.

The value of activation stories is grounded in both Schein (2004) and Heifetz's (1994) comments on the importance of helping people work through defensive reactions to change. Creating a sense of impending threat can frighten people, but without an outlet the fear can quickly become paralyzing, an unintended and diametrically opposite reaction to the leader's intention. Several leaders described how Al Gore's *An Inconvenient Truth* often led people to accept the looming reality of climate change and to feel disempowered to fight back because of

the documentary's near-total focus on data and only minimal description of solutions. Activation stories can be seen as another version of Heifetz' (1994) "holding environment" concept facilitating adaptation, similar to that described by Mark Orlowski's endowment responsibility report. Coupling stress with a healthy outlet for coping encourages successful adaptation.

Other flavors of reflection spaces included *critical reflection*, *visioning*, and *values-clarification*. Since only a few leaders I interviewed described facilitating these spaces, and they are extensively covered in education, social movement, and leadership literatures, I discuss them only topically. Despite the lack of empirical data I received, they are likely an important feature of environmental leadership bearing further research.

*Critical reflection* processes are inquiries structured to connect behaviors or outcomes with deeper underlying systems yielding those outcomes. For example, Penn Loh of Alternatives for Community Empowerment described leading people from frustration at bus drivers' rudeness to understanding the root causes of that behavior. He guided people by starting with their frustration, then asking a deepening chain of "Why" questions. Through repeated questioning, they uncovered that rudeness was an outcome of driver stress, the result of constantly running behind schedule because the transit authority did not employ enough drivers, a reality caused by insufficient transit funding. By connecting rudeness with underfunding, he helped the community members identify a clear opportunity and mechanism for correcting the issue - political activism regarding transportation funding - despite the very indirect connection with rudeness. This awareness and reframing could create a greater sense of empowerment by shifting blame from random conditions to a systemic outcome (Snow, Rochford et al. 1986), e.g. insufficient bus funding. While this process was more of a political justice perspective, one can easily imagine applying a similar framework towards any type of environmental issue. Critical

reflection is an important component of Senge's (2006) conception of the intimate relationship between learning and systems thinking.

*Visioning* and *value-clarification* structures involved each participant reflecting on their personal values, then collaboratively incorporating these into a shared vision of the future (Senge 2006; Heifetz 1994). The process of clarifying and articulating values was a crucial first step. Heifetz (1994) notes that when a community faces a need to adapt, it must prioritize what to preserve from its present reality, and what it can discard. After identifying the core values formed this platform, leaders could move on to visioning. After forming a consensus or shared commitment to the future, the vision would be contrasted with existing or potential reality. Reflecting on the often-painful mismatch could generate a natural tension that actors and environmental leaders could channel towards bringing reality or expected reality more in line with values (Fritz 1989; Heifetz 1994; Senge 2006). Senge, drawing on Fritz' (1989) work notes that there are two ways to reduce the tension – channel it into productive action, and limit the vision to something closer to reality, but farther from one's values (Senge 2007). To create maximum change, leaders must preserve the tension as the energy source for change (Senge 2007).

John Shepard described how he and the Sonoran Institute worked with an Arizona community to do visioning workshops regarding their locality, which was on the cusp of significant development. Through the process, the community expressed its strong love of place as a traditional Western community, not as a developed suburb. Contrasting the ideal vision of the community as a fairly wild and pristine desert with the clear trend towards rapid and uncontrolled development in Arizona created a strong tension and pressure to respond. This led

them to collectively strive to create a protected area from the most pristine local habitat, which became Las Cienegas National Conservation Area.

*Evaluation structures* are self-accountability mechanisms that provide actors with feedback helping them align their behavior to produce environmental outcomes. They include feedback or benchmarking mechanisms including goals, strategic plans, and milestones. Evaluation structures connect otherwise-invisible environmental consequences to behaviors, developing willing actors' capacity to adapt and green their actions over time.

These are practical, useful, and relatively simple structures to deploy effectively. As mentioned earlier, the NHCC created multiple evaluation structures encouraging household greenhouse gas reductions. They encouraged people to first commit towards a 10,000 pound reduction in emissions, then to develop personal strategic reduction plans drawn from a menu of NHCC-provided options. By providing a clear and easily quantified benchmarking system, individuals were able to discipline themselves to make changes. They also could better understand how the many little behaviors and decisions they made added up to a significant impact on greenhouse gases and climate change. Similarly, the Toyota Prius provides gas-efficiency feedback to its drivers, helping them maximize gas mileage, and providing implicit and gentle critique when a driver's habits are inefficient. Evaluation frameworks both break large or global problems into very manageable chunks and track how discrete actions aggregate into measurable progress. Both are important as an empowering and behavioral organizing tactic.

The last mirror structure, *mirror objects*, force individuals to pause and reflect on some aspect of environmental consciousness or behavior because the object displays some environmental trait that is strikingly different than the status quo. By demonstrating an alternate perspective on the importance of environmental issues, these objects can create or widen cracks

in the unconscious inertia of mental, social, and organizational systems. Objects could be any class of durable structure that contrasts with similar yet less environmentally sensitive objects, from artifacts to beliefs to frames, and persistently interacts with an actor, serving as a consistent prompt upsetting old and establishing new norms (McKenzie-Mohr and Smith 1999; Schein 2004). While the object may well have a direct environmental impact, such as reducing energy or pollution, it acts as a mirror structure when it influences people's consciousness.

Mirror objects serve as a consistent reminder that protecting the Earth is important. With some mirror objects the statement is explicit and intentional, with others the statement is a subtle byproduct of their design. One of the more overt mirror objects commonly found is the Toyota Prius, a car with an efficient hybrid engine that has clearly been branded as an environmental alternative to gas-guzzling SUVs. This branding makes the Prius a strong and obvious symbol of environmental concern to others on the road – and even the driver. However, leaders found that even without branding or other mechanisms for drawing attention, these objects might force reconsideration of values and perceptions as actors learned about the object's environmental impacts. Objects that could subtly mirror environmental considerations mentioned by leaders included bear conflict fencing, changes in campus operations and power generation, and green buildings. These objects were typically designed to achieve an environmental purpose, not to make a statement. However, as individuals learned about their design and environmental properties, this could trigger a shift from their initial understanding or awareness.

One of the most powerful types of mirror objects was, surprisingly enough, integrating structures. By demonstrating that adopting environmental protections may not be so onerous, uncomfortable, or costly, over time these structures can exert potent influence over individuals' environmental perceptions. Several environmental leaders believed the shifts in behavior caused



by integrating structures had potential to trigger deeper changes in the underlying worldviews they avoided tackling directly. The sharp break with prior habits of thought and action could inspire a deep level of reflection whether and how much an actor cared about the environment.

Weick (1995) offers a theoretical explanation of why integrating/mirror objects may be successful by suggesting that people retrospectively develop explanations of their behavior (Weick 1995). He draws on Festinger's (1957) classic work on cognitive dissonance, which demonstrated people's internal compulsion to maintain consistency of beliefs. Maintaining internal consistency between actions and beliefs forces the editing of underlying rationales when actions and beliefs conflict (Weick 1995). Routinely acting environmentally while pursuing other desired goals through the integrating/mirror structure could generate internal inconsistency. An actor may wonder why they act environmentally when their actions are channeled through the integrating/mirror structure but not at other times. The inconsistency created by these actions may spill over and forces reevaluation of other actions. This tension might lead actors to manage the tension by redefining their perceived environmental concerns and environmental identity to be more consistent with the environmentally friendly actions guided by the integrating structure.

While still a very speculative finding and explanation, this joint integrating/mirror structure appeared to be the most powerful structure for creating deep change, evidenced most prominently by the US Army. The Army has become so deeply impacted by the perception that the environment and its national security mission are intimately connected that in addition to significant greening in the Army's supply and procurement policies, it has begun establishing "sustainability" as an additional core value beyond mission success. Michael Cain of the U.S. Army Environmental Policy Institute described programs to embed this value throughout the organization. One seemingly telling sign of the sincerity of this transformation is that the military

recently released a report calling for greater political attention to climate change as a major long-term national security threat (Goodman 2007). The Army's changes in values and prioritization go far beyond behavioral change to deep cognitive, psychological, and cultural change – the holy grail of environmental leadership. While I was unable to adequately validate the Army's self-reported claims of change, several other leaders mentioned the value of dual integrating/mirror structures, making this combined structure a high priority for further investigation to explore whether these claims are being realized.

Mirror structures created the primary if not only mechanism by which environmental leaders might influence actors' deeper values. Using mirror structures does not coerce actors in to changes against their will; instead, these structures create opportunities that enhance actors' abilities to transform their own behavior and minds. In this sense, mirror structures operate much as transformational leadership. Once initiated, deep changes in morality and perception of self-interest influence perception of the relative costs and benefits of various behaviors, the processes driving and inhibiting change, and culture mediating and institutionalizing changes.

Perhaps because reflection inspires deeper, transformative changes, these structures appeared to play a central role in activating new leaders, an especially important process driving change. Reflection catalyzed both Winslow of Nike and Dundorf of the New Hampshire Carbon Challenge, respectively, into becoming environmental leaders. In both cases a sudden, painful interaction with an active environmental leader conferred a disturbing awareness of how their individual decisions were impacting the Earth. When coupled with awareness of their ability and responsibility to influence those actions and outcomes, the realization led to reflection about what they could do to reduce the environmental harm under their control, and the results were significant. Once activated, these leaders in turn inspired others to take on leadership roles,

creating a “leadership cascade” that appeared capable of generating potent impact on society’s ability to transform its environmental footprint.

Ironically, non-coercive processes of reflection appeared to be facilitated by exercising some level of power and constraint. The seed of the Army’s transformation was planted by dealing with compliance with community and endangered species protection regulations. As communities slowly tightened around bases, they increased complaints about military operation while constraining migration ability and population sizes of threatened species; both trends pointed towards unacceptable reductions in the Army’s flexibility to train adequately. Due to the power of law and politics, the Army was then forced to confront the need to deal with these issues in a new way. As Cain described the process, when the Army looked more deeply into the end-of-pipe compliance mentality it embodied around 2001, the more clearly that approach appeared outdated and ineffective. That dawning realization then triggered movement towards holistic and proactive management of the Army’s relationships with the environment and surrounding communities, leading to the ongoing deep process of transformation. Yet without the non-negotiable externally-imposed constraints, would the Army have undertaken such change? It is impossible to say, but it is reasonable to assume that the binding constraints at least accelerated the process. However, it is important to note that the regulations did not drive the process, only provide initial and ongoing impetus.

The Army’s transformation appears like a textbook example of Heifetz’ (1994) holding environment concept. Heifetz considers leadership as a process of adapting to constantly shifting realities, with leaders acting more like conductors than drivers of change. Leaders, in his framework, must eventually devolve difficult tradeoffs regarding values and realities to their followers who then adapt or suffer consequences of remaining stuck. If followers avoid these

trade offs, then they are trapped in the past, fail to adapt, and ultimately suffer or perish. External regulations focused the Army's attention on the need for adaptation, but left the work of adaptation up to the Army. The Army then took over self-adaptation once it felt the need and capacity, and Cain's work then shifted to increasing the rate and depth of adaptation.

## **Chapter 5: Questions for Further Analysis**

Many inquiries worthy of continuing analysis arose in the course of the study. The interviewees engaged in a surprisingly limited degree of Capacity Building as described by Senge and Heifetz, a finding worth exploring and testing further. Both authors' frameworks are superficially attractive descriptions of how leadership may create change, yet each only played a very limited role in the interview sample. One potential explanation was that both Senge and Heifetz' approaches demand a level of consistent interaction with leadership. However, this may be difficult or impossible to achieve when leadership must artificially force interactions with actors. These approaches also appear to require more challenging personal and group exploration and reflection, which may be difficult to facilitate without either persistent interaction or built-in authority. Perhaps Capacity Building approaches require tighter interconnections. Whatever the reason, these approaches are intriguing enough to merit further inquiry into their supportive role before discarding them as unimportant environmental leadership strategies. In the instances for which they did appear to accurately describe leadership, including the US Army and Harvard's Green Campus Initiative, the transformations were impressive.

One finding emerging from interviews was the need for more detailed, multidisciplinary analysis into the principles guiding strategic design of structures using a multidisciplinary lens. While I focused the study primarily on leadership and organizational studies theory, other theory bodies could further illuminate why structures are effective and how to improve them. Social and developmental psychology, behavioral change, social diffusion, social movements, adult education, and organization studies all will provide perspective on how change occurs. Economics might provide a framework for thinking about maximizing leadership influence. Informing leadership with a strong psychological understanding – particularly social and

developmental psychology – would be particularly valuable. The more leadership strategy is grounded in an understanding of authentic human behavior and psychology, the more successful it will likely be.

Systematically documenting how leaders operate in a range of contexts could lead to more prescriptive advice on when and how to apply certain strategies. Varying leadership by degree and nature of authority, community type, cultural and political environment, and professional setting would likely produce considerable variety in strategies, creating a much richer picture than I have been able to document.

Developing understanding of how the disciplines of traditional leadership practice and structure-design leadership mutually support each other would also enrich the understanding of comprehensive environmental leadership strategy. How do leaders harness structures to mobilize people towards their objectives, and how do leaders effectively translate mobilization into structures?

If leadership is indeed emerging as a design occupation, then it would be worth learning more about leaders' design process. How do they learn about and diagnose a particular situation, imagine some structural response that would improve a situation's environmental outcomes, implement that response, and adapt it appropriately as it evolves? Bringing in knowledge of the design process from traditional design fields such as engineering or architecture could also enhance leaders' effectiveness designing structures. Understanding the thought processes involved in developing structures may be at least as important as the structures themselves.

## **Chapter 6: Conclusions**

This study is focused on environmental leaders who step beyond their professional authority and avoid using the government's coercive power to create change in environmental relationships and impacts. Through interviews, ELs consistently demonstrated the value and efficacy of leadership that gathers influence by strategically redesigning context. This notion of "designer-leaders" is distinct from most perspectives on leadership, which ascribe interpersonal relationships, group coordination, and capacity building as the source of influence.

Leaders' focus on contextual transformation suggested that reducing environmental impact may be less about changing hearts and minds than changing the many contexts determining behavior. Interviewees found behavior far easier to change, and their practical experience corroborated psychological theories finding behavioral change, counterintuitively, may be the most effective path for transforming minds.

Leaders redesigned a diverse range of contexts independent of governmental action that created transformations in environmental impact. They relied on a much broader canvas to create change than the environmental mainstay of governmental action, or the budding darling of market mechanisms. They evidenced a broad portfolio of channels and strategic approaches to change, many of which were easier to consummate and more durable than contentious and unstable changes in political arenas. Analogous to potential spillovers from behavior to psychology, some leaders speculated that environmental transformations temporarily realized in non-governmental contexts would create positive spillover effects on politics.

Design-leadership may not be unique to environmental leadership, but nowhere is it more needed. Forestalling or avoiding serious environmental calamities in the coming decades will require a deep and durable reorganization of society. It is hard to envision such change occurring

solely through traditional leadership activities like inspiration, persuasion, and vision- and goal-setting. The fundamental systems and structures shaping human behavior must be radically redesigned if our species is to lead sustainably abundant lives without overtaxing and overwhelming our planet's resources and other inhabitants.

Completing this transformation will require a dramatic increase in environmental leadership capacity. It demands both traditional leadership to mobilize for change and design leadership to architect the structures supporting and institutionalizing change. Each type of leadership can complement and reinforce the other. Through this partnership, we may just win the race to fashion a new way to live before our old and profligate ways cripple any chance to provide a sustainably abundant world for today's and tomorrow's generations.

Unfortunately, neither type of leadership appears in great supply, crippling our capacity to realize this vision. Humanity's ever-increasing environmental footprint demands an immediate and aggressive commitment to expand both types of environmental leadership capacity to curb this footprint. Expanding both types of leadership perhaps should be the environmental movement's highest priority. Developing an understanding of what makes successful environmental leaders and leadership strategies, and imparting these to present and future leaders will go a long way towards this goal. The agenda should include extensive documentation of successful and unsuccessful change efforts and rigorous interpretation through a multidisciplinary array of theories explaining human behavior.

While many leadership texts describe key aspects of effective leadership, the one area that has seemingly been systematically misunderstood is design-leadership. Greater research in this area is urgently needed to better understand the underlying principles and process of good design. Schools of all fields must then arm their students with these principles to create the



architects of a greener society. With an array of disciplines engaging in design and redesign of our communities, organizations, technologies, nations, polities, economies, and lifestyles, we have a chance to measurably pull humanity towards greater environmental harmony for the first time since the Industrial Revolution shattered modern society's connection to nature.

Creating designer-leaders requires a fundamental diversification of our educational system. While our schools, built on the principles of science, prioritize formal, reductionist knowledge and empiricism, designer-leaders' greatest capacities are their deep understanding of context, creativity in envisioning new structures, and abilities to engage in trial-and-error adjustment. The abstract and disciplinary worlds of modern education do not adequately prepare nor orient students for this type of leadership. Integrating systems thinking, interdisciplinarity, and creative design into curricula for budding environmentalists of all stripes would significantly increase our capacity for design-leadership and our capacity for environmental change.

Design-leadership emerged through this study as a crucial capacity for environmental transformation, but it seems unlikely that this is the only type of social change facilitated by design. In fact, several leaders objected to being labeled environmental leaders, instead preferring to be called public or civic leaders. If these designer-leaders identify as more than environmental leaders, than these same principles may apply in other areas of social change.

As the wise children's song notes, we've got the whole world in our hands. How ironic that while we control the natural environment, in large part our social environment controls us. We are victims of our own unconscious social design, and the natural environment is paying the price. We hopefully can leave this prison of our own making through redesign of context. To realize this strategy, the environmental movement must invest far more heavily in increasing the

quantity and quality of design-leadership through recruitment, leadership development, and research. Preventing environmental calamity demands this investment, and demands it urgently.

## **Appendix A: Environmental Leaders and Affiliations (in no particular order)**

Peter Yolles – The Nature Conservancy  
James Merkel – Transportation Advocate, San Luis Obispo, CA; Dartmouth College  
Mark Orlowski – Sustainable Endowments Institute  
Heeten Kalan – The New World Foundation  
Dennis Ole Sonkoi – Loita Development Corporation, Ashoka Fellow  
John Shepard – Sonoran Institute  
Seth Wilson – Blackfoot Challenge  
Richard Kock – The World Conservation Union (IUCN); London Zoological Society  
Graham Sinclair – Net Impact, Socially Responsible Investment Advisor  
Jude Hobbs – Permaculture Consulting and Education  
Howard Silverman - EcoTrust  
Dave Mattson – United States Geological Survey (USGS)  
Omar Freilla – Green Worker Cooperatives  
Ed Connolly – New Ecology  
Kate Parrot – MIT Sloan, Student Working Group for Sustainability @ MIT  
Bill Shutkin – Civic and Environmental Leader  
Penn Loh – Alternatives for Community and Environment  
Jeff Glassman – Rainforestmaker.org  
Bill Burtis – Clean Air Cool Planet  
Steven Lanou – Massachusetts Institute of Technology  
Peter Cooper – Massachusetts Institute of Technology  
Leith Sharp – Harvard University Green Campus Initiative  
Frank Dixon – Global Systems Transformation, Innovest  
Carol Sanford – Interoctave, Inc.  
Michael Cain – US Army - Environmental Policy Institute  
Julia Dundorf – New Hampshire Carbon Challenge  
Denise Blaha- New Hampshire Carbon Challenge  
Chris Skoglund – New Hampshire Carbon Challenge

I also drew on presentations that effectively served as environmental leadership interviews by:

Darcy Winslow – Nike  
Heetan Kalan – The New World Foundation

I did not incorporate several leadership interviews and their analysis because either leaders relied on their authority or governmental coercion to create change, or conversations comprised a more general discussion of environmental leadership.

Unofficially, I also drew upon my own experiences with environmental leadership through S\*, the Student Working Group for Sustainability@MIT. I have been heavily involved with this group, and we have conducted numerous reflections on our role as environmental leaders.

## **Appendix B: Sample Interview Template**

### **I'd like to ask a couple of general questions first.**

First, how would you describe your work? Could you give a brief rundown of what you would consider your work and your environmental leadership activities?

Why do you do what you do?

I have been thinking of "environmental leadership" as getting groups of people to change how they relate to and impact the environment. How closely does that describe what you do, and why or why not?

### **Now I'd like you to focus on the work you do with groups of any size.**

#### **Tell me a story of an environmental challenge or opportunity that you successfully helped solve or realize.**

What was the challenge or opportunity?

Can you describe the setting you were working in?

Why do you describe the situation as successful?

What did you do in the situation?

In the beginning? Middle? End?

What made you decide what to do, how to do it, and when?

How did you think and feel during the course of the process?

In the beginning? Middle? End?

How do you influence people?

How did the community perceive you during the process? Why? How did that contribute to the outcomes?

Did any external events impact the process? If so, how?

What was the community's response to your actions?

How did the community's behavior change? How did its relationships with itself, with outsiders, and with the environment change?

How did the community's thinking change?

How did you engage supportive people? How did you engage antagonistic people?

How did you communicate your ideas?

How do you imagine this story continuing into the future?

How would this community be different if you had not been engaged in the issue(s)?

With the benefit of hindsight, what would you have done differently? If you had done things that way, what would have changed, and why would it have been better?

If I were to interview someone from the community about the long term impacts of your work, what would they say?

**Tell me a story about a challenge/opportunity that occurred but you were not successful or not as successful as the first story.**

What was the challenge or opportunity?

Can you describe the setting you were working in?

Why were you less successful? What was different?

What challenges did you run into?

How and why did the group/community hinder or resist your efforts?

Did any external events impact the process? If so, how?

How would you approach it differently in hindsight? What would have happened if you approached it in that way?

If I were to interview someone from that group for their reflections on what happened, what would they say?

**Now I'd like to you to focus on your interpersonal connections.**

**Tell me a story about someone you tried to and successfully influenced.**

What was the situation? Why were you trying to influence them, and what were you trying to influence them towards?

How would you describe your relationship before and after?

What enabled you to be successful?

What changed as a result of your actions?

If you were to start over with this person, how would handle things differently?

**OK, tell me a story about someone you tried to influence, but were less successful or unsuccessful.**

What was the situation? Why were you trying to influence them, and what were you trying to influence them towards?

How would you describe your relationship before and after? What didn't change in between? What did?

What caused you to be less successful?

What changed in the relationship as a result of your actions?

If you were to start over with this person, how would handle things differently?

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