Strengthening the "Ability" of Sustainability: A Personal Perspective on Motivations and Sustainable Design

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Introduction

Sustainability is easy to repeat as a word, more difficult to grasp as a concept, and even more difficult to achieve as an action. Despite its importance in land management, there seems to be a feeling that it has entered popular culture before it has had a chance to ripen, becoming petrified before setting fruit. Pronouncements that sustainablity is the "buzzword" of the 1990s are common: "Sustainability is so popular Michael Jackson will likely sing of it on his next album" (Hester 1992, p. 162). The short-term commitment implied by the term "buzzword" and the long-term commitment implied by the term "sustainability" are diametrically opposed. How can we open a crack in this rapid-paced, fad-oriented society for a concept like sustainability to seep in and fuse with our ideas and actions regarding land management? How do we strengthen the "ability" part of sustainability?

William Ruckelshaus, former administrator of the U.S. Environmental Protection Agency and member of the World Commission on Environment and Development (the "Brundtland Commission") recently wrote (1989) that in order to move toward a sustainable world, we have to articulate a clear set of *values* consistent with the principles of sustainability, establish *motivations* to achieve these values, and develop *institutions* to effectively apply the motivations.

One would think that the U.S. National Park Service (USNPS) would have an easy task of helping this value shift toward sustainability along, since the agency's 77-year-old mandate has the values of sustainablity embedded in its words: "to provide for the enjoyment of the scenery and the natural and historic objects and the wildlife [within the parks] ... in such manner and by such means as will leave them unimpaired for future generations." This call is precisely parallel with the Brundtland Commission's definition of sustainable development as that which "meets the needs of the present without compromising the ability of

future generations to meet their own needs" (WCED 1987, p. 43).

The Denver Service Center (DSC) design arm of USNPS has taken a further step in restating and updating values statements in the spirit of sustainability through its Sustainable Design Initiative [see article by Reynolds in this issue]. USNPS individuals have created a *Guiding Principles* document (USNPS 1993) to record principles, goals, strategies, and checklists to guide national park design. This document is an important milestone in the growing sustainable design movement because it applies the constellation of principles developed by many far-flung, relatively small-scale groups to an influential, large-scale national agency. Goals such as "promote spiritual harmony with, and embody an ethical responsibility to, the native landscape and its resources" are representative and attest to the desire to apply a sustainable value system to design (p. 32).

This emergence of principles is a positive step toward articulating sustainability values. Publication of this document also attests that there is institutional support for this idea, as there is support at larger scales for various new commissions and councils on sustainable development, resulting from 1992s Earth Summit and Agenda 21. Thus, by Ruckelshaus' formula, two of the three components necessary to "eat our developmental cake and have the environment, too" are moving into place.

The third component, motivation, is the focus of this paper. Achieving goals of sustainability can mean sacrificing comforts, changing habits, and thinking in a manner that considers larger-scale, longer-term implications. People must be motivated to do things that are more difficult. Using national park design as an example, how can designers, under intense pressures and deadlines to satisfy often-conflicting needs, be motivated in tight budget times to take the extra difficult steps necessary to carry through the dozens of principles, guidelines, and recommendations stated in the *Guiding Principles* document?

In addressing motivations, I suggest drawing from and refining the old personnel standbys: increasing knowledge, skills, and abilities, with the latter being the key to achieving sustainability. Developing knowledge and skills entails providing information and a process by which to assimilate data. But to develop abilities in the largest sense, people must combine information and process with inherent interests, talents, and drives. They must overcome obstacles and draw from those elements that give them unique perspectives. This is what leads to fresh and dedicated contributions. Paying increasing attention to personal-scale motivations is part of a movement evident elsewhere in society, and important for organizations such as the USNPS to recognize. In this essay, I describe the steps underway and those still needed within the sustainable design movement to motivate positive personal-scale action and attitudes. I draw from my own experiences with developing knowledge, skills, and abilities in the interest of encouraging readers to take an important moment to look within and examine their own motives and inherent interests and seek further ways to build

on these through the sustainable design movement. As we move toward an era focused on acknowledging environmental and personal context, we each have to continually reach within to find where we can be most effective.

USNPS design and planning activities are the focus here, because they must address the use/preservation tightrope assigned by the mandate. Since design and planning follow similar processes, but are usually considered variations in scale, I will refer to "design" to encompass both.

The shifting scale of concern

The importance of motivating people to achieve global goals through local efforts has reached cliché status: "Think globally; act locally." The scale of local activism is increasingly shifting, however, from a community level to more of a personal scale. Much emphasis in recent literature is placed in two areas: strengthening an individual's sense of self-knowledge and effectiveness and appealing to individuals' innate motivations (pain and pleasure) to achieve goals of sustainability. This shift toward self-focus is evident within many recent writings, from popular self-help books to environmental behavior research. A few eclectic examples follow.

In her book *A Revolution From Within* (1991), Gloria Steinem reverses the feminist adage that "the personal is political," which underscored the need for political consideration of issues such as day care, education, and health. Now Steinem states that "the political is personal" and she records political problems stemming from leaders' personal lack of security and esteem. Until individuals build their own sense of contribution, security, and strength, they will not have the ability to foster these qualities in others, and positive political change will not occur. Steinem supports her position with a quote from former Czechoslovakian president Vaclav Havel: "Only a person or a nation self-confident in the best sense of the word is capable of listening to the voice of others and accepting them as equal to oneself. Let us try to introduce self-confidence into the life of our community and into the conduct of nations" (p. 10).

Lester Milbrath, author of *Envisioning a Sustainable Society: Learning Our Way Out* (1989), also writes that we need to learn our way out of existing patterns by strengthening our personal values, becoming more self-reliant, living simply but richly, and touching the earth less with our material demands. Those who develop this personal understanding cannot shrink from the responsibility of funneling it upward in scale.

In a recent *Atlantic Monthly* article, authors Ridley and Low (1993) question sustainability's assumption that we must persuade people to change selfish habits for the greater good. They believe that people are not effectively motivated by calls for global sacrifice, selflessness, or moral shame, but rather by actions that cause them either personal pain or bring them individual benefits. In searching for motives to achieve environmental goals, this means increasing the costs of being a resource free-rider and increasing the benefits of being a cooperator. To effect change, we need to tap into these rational and consistent motivations as individuals, and bene-

fits will filter up into larger scales. Roger Walsh, in his article "Toward a Psychology of Sustainability" (1991), also asserts that we must appeal to personal motives to achieve sustainability, but argues that, in the long run, it is better to build trust by appealing to people's positive motives, rather than by condemning or threatening them.

Studies by behavioral analysts and others show the importance of human behavior modification in avoiding the "tragedy of the commons." Effective behavior-change techniques include establishing material and social incentives and disincentives, persuasion, prompting personal insight and intrinsic satisfaction, identifying attitude-consistent behaviors, providing specific information, and training. The success of these in accomplishing goals of sustainability often depend on change occurring on an individual scale (De Young 1993, Dwyer and Leeming 1993). De Young writes that individually initiated changes may be the key to crafting a conserving society where a sense of challenge, excitement, and enjoyment are the most important, long-term intangible dividends.

Organizations must recognize this shift toward self-focus and the growing need for personal empowerment. The USNPS, in its 75th anniversary summary (the Vail Agenda), has gone through agency-scale self-examination and has realized the importance of organizational renewal. Personal renewal is also important, and building communication, cooperation, and a sense of contribution is particularly powerful to effect change on larger scales. In Buddhist writings, it is said that to straighten the crooked, you must do a harder thing: you must first straighten yourself.

Increasing knowledge and skills

Providing access to information and a process through which to assimilate this information is at the heart of developing knowledge and skills needed to meet the goals of the sustainable design movement. Studies show that providing information increases knowledge and emotional arousal regarding environmental issues and results in increased motivation and activism (Symes et al. 1993). Providing effective information about sustainable practices is underway within USNPS, especially within the Denver Service Center. Through frequent educational seminars, publications, and personal and computer networks, designers have growing access to technical information such as efficient energy systems design, biological sewage treatment systems design, environmentally responsible building products, etc.

Increasing individual skills is dependent on having an appropriate method by which to assimilate and apply information. Without a clear design process in place along with the rapidly accumulating data and numerous complex goals, designers are in a situation akin to drinking from a fire hose. Over the last twenty-five years, USNPS design has been informed largely by an accountable overlay process (McHarg 1969), inspired by the need to evaluate alternatives and impacts, as required by the National Environmental Policy Act. This method of compiling and overlaying resource data layers has become distilled into

an approach acclaimed for enabling a thorough consideration of existing resource conditions, but criticized for not addressing the spatial and temporal qualities of the site. Although language has recently been included within updated design-process documents that encourages designers to think in connected, dynamic terms, specific examples have not yet been included demonstrating how to feature cycles, flows, connections, and change over time (Johnson 1990). Furthermore, USNPS's Sustainable Design Initiative does not yet include a detailed process within the *Guiding Principles* document that instructs designers on how to specifically analyze, model, and design site structure and function (Lopenske 1993). Integrating process and principles is a vital next step needed to provide designers with confidence and skills in assimilating the dozens of complex guidelines included in the document.

The ecosystematic design process developed by Lyle (1985) and utilized in design studios is one of several processes that can be appropriately applied to the USNPS Sustainable Design Initiative. The ecosystematic design process is inspired by patterning change based on the essential order of ecosystems: their structure, function, and location. The goal is to create forms reflecting inner ecological processes, or, as a popular statement summarizes, "form follows flows." Seven steps are followed in the design process that encourage alternating between intuitive, creative right-brain cognition and more disciplined left-brain thinking. Briefly, the initial step (inception) is flavored by exhilaration and uncertainty, where designers collect initial impressions and early project information. The second and third steps (information and modeling), are more precise and analytical. The process emphasizes use of models to define and clarify underlying or invisible processes. Descriptive models most often include representations of a site's vegetation structure, hydrological functioning, and locational patterns, such as existing land use. Predictive models indicate how change will affect site structure, function, and locational patterns. These models are used in the next creative stage, where the final four steps occur (possibilities, predictions, plan, management). Here goals and objectives are refined, concepts and alternatives generated, a plan selected based on information from predictive models, and post-planning management detailed. This process has driven over eighty-four design projects over the last seventeen years, and has resulted in award-winning designs, recognized for their ability to balance present-day and future human needs with landscape structure and function (Hirschman in press).

Increasing abilities

If information and processes are the water of the phrase: "You can lead a horse to water but you can't make it drink," then abilities comprise the drinking. How individuals transform information and methods into abilities that propel them to address complex projects and plans depends on their personal motivations. Many externally applied incentives can be employed by an agency to assist this transformation, such as tying performance standards with utilization of sustainable

design information and techniques, providing material incentives and disincentives, etc. However, drawing from De Young (a behavioral scientist) and Walsh (a psychologist), how can agencies spark more individually initiated approaches to assisting the process of transforming knowledge and skills into long-lasting, creative, energized, inherent abilities?

I would like to call attention to a small but potent USNPS program designed to help strengthen and emphasize personal abilities for larger-scale benefits. The Denver Service Center's Office of Professional Employee Development has created a communications coordinator position, held by a landscape architect, Linda Wright. Suggested by the DSC's Management Advisory Group, the intent of this position is to help DSC strengthen the "Service" portion of the organization's title.

Wright approaches her tasks from a personal perspective. Many of her activities, such as administering personality type indicator tests and leading communications workshops, aim at assisting individual employees in recognizing their own motivational bases, their strengths, and blocks toward achieving goals. The goal is to reinforce the idea that people have diverse viewpoints, but once personal preferences and styles of communication and working are recognized, stronger abilities to communicate, cooperate, and lead can be developed. Moving up in scale, individuals who foster a cooperative spirit as a normal mode of operating can work more effectively in interdisciplinary teams, which can be more instrumental in bridging the organizational gaps in USNPS between parks, regions, and central offices. The key is individual ownership and accountability and a sense of contributing at a personal scale, which filters up to larger scales.

Wright works closely with the Sustainable Design Initiative coordinators, Rich Giamberdine and Bob Lopenske, to help communicate the larger goals of the sustainability initiative while helping people develop their own personal role in fulfilling this vision. Strengthening individuals' sense of value and increasing their ability to achieve personal goals is a strong motivational force that links well with the larger goals of sustainability.

This program is in its early stages and should be encouraged to develop a system for evaluating long-term effectiveness. The ultimate success will lie not in one office's attempt to strengthen communication and abilities, but in the overall reinforcement of a sense of personal responsibility. Each individual must be encouraged to ask key questions: "What is inherently interesting about this project, what motivates me?" "What is the greatest good I can achieve with this project?" and "How can I look at standard operating procedures with new eyes, informed by the values of sustainability?" However, values and motivations are not enough to accomplish the shift toward sustainability: each individual must also be permitted by the agency to act on the answers to those questions. This is where Ruckelshaus' trilogy of values, motivations, and institutions come together to cre

ate beneficial change.

Personal development of knowledge, skills, and abilities

In line with the focus of this essay, I illustrate the importance of attending to the personal scale by drawing from personal examples. I feel these experiences demonstrate one individual's attempt to sift out inherent interests and motivations that lead to accepting the more complicated work of sustainable design. As Walsh states: "There is a growing trap that a lot of us fall into of thinking that a real contribution has to entail suffering for us. But we are in this for the long term, and if it is not reinforcing we are going to burn out" (p. 66).

As I peer into my own roots, I find that my primary motivators are consistently to seek niches and previously unlinked connections. Development of knowledge, skills, and abilities applicable to sustainable design came as I contentedly worked on park design projects while employed as an USNPS landscape architect and began noticing a gap. I witnessed or read about recycling, solar design, and wetland sewage treatment technologies around the country, yet they still at that time were not applied to national parks. The gap between our mandate and our practices grew increasingly evident. Others recognized this gap as well and the Sustainable Design Initiative grew from this realization.

I joined the faculty at California State Polytechnic University, Pomona, to teach design and participate in the Center for Regenerative Studies, where up to 90 students will grow their own food, cycle their own wastes, and generate their own power. "Regenerative" was felt to be a more dynamic term than "sustainable," implying renewal, and therefore was selected as the center's focus. Information from this center can be applied to national park design issues, and the center is one of the first institutional construction projects built almost entirely with "green" materials. My interests in leaving USNPS for Cal Poly Pomona were in part to absorb as much technical data as possible in the interest of eventually applying these back to park design. My motive rears its head again: to connect USNPS sustainability and Cal Poly regenerativity.

While technical knowledge is useful, the heart of what I do to contribute toward sustainability is to teach processes by which design students can treat land as dynamic, three-dimensional, connected systems. By combining Lyle's methods with my previous background in landscape ecology, a hybrid design approach that emphasizes cultural modeling is developing and my skills are growing from this experience. Connection and niche motivators are quite evident here as well.

In developing sustainable design abilities, I have to dig deeper to find out what is inherently interesting to me that makes it easy to shift to the complex ecosystematic design process. My own design-process roots are deeply intertwined in the overlay process, yet I draw more now from other sources as my knowledge and skills grow. What appeals to me about dynamic, natural-system-driven design approaches is that the act of designing systems is a marvelous system in itself, and prominent models, such as water and mineral cycling, energy flows, and

succession and disturbance are models themselves for how design occurs. Design *is* like the hydrologic cycle: ideas burst forth from creative designers, are applied to a particular site, are changed and modified over time, become accepted and evaporate in importance, then burst forth again, sometimes centuries later, as in the case of many arid-land approaches to water harvesting, for example. Design *is* like energy flow: during creative stages of inception and possibilities, many ideas come forth that must be stored like potential energy for use when supplies run low. They are renewable and enlighten the process. And if there was a second law of idea thermodynamics, it would state that in a closed system (i.e., an office removed from the design site), the amount of ideas in forms available to do useful work diminishes over time. In design, succession and disturbance are constant companions as one alternative idea builds on another until a climax plan arises. But often a disturbance, such as a funding cut or political change, can unpredictably strike and burn the plan to the ground. Then it starts again slowly, utilizing the nutrients from the ashes of the last effort to move toward beneficial change. Thinking that design is a linear process, somehow separate from natural processes, has lost its appeal to me. We must think in terms of cycles and layers, time and space, to provide for future generations.

As I write of my own motives, I speculate whether I'm tapping into the universalities of a changing design era. I trust my goals are shared by others. In design I seek simplicity (one design that serves multiple purposes, such as trail corridors that interpret history, ecology, and community), I seek diversity (because without planning for diversity, we get sameness), I seek context (articulating what makes a place and its people who are committed to it so unique through plants, design materials, language, symbols, etc.), and I seek healing. I seek the appreciation—not the fear of—change over time and ways to celebrate change in a variety of ways: by using building materials that change with the natural elements over time, or perhaps by safely featuring dead trees and their teeming bird and insect life in a design. I seek to provide in design what I seek for my own well-being. It is essentially a personal task, but acknowledging what motivates us individually gives us valuable information to know how to extrapolate outward in scale to design for other humans, species, and generations. Tackling the more difficult tasks of creating sustainable designs does not then seem so difficult; it becomes a necessity.

Achieving sustainability in the Context Era

A new era is upon us. The environmental-regulation-inspired overlay era of the last quarter of a century is blending into what could be called the Context Era, an era focusing on environmental and personal context. Environmental context is more strongly recognized by managers, designers, and visitors as they move even farther beyond thinking of parks as collections of "scenic objects" by thinking in systems that include ecological and social processes. Personal context involves acknowledging our own history, strengths, blocks, and inherent mo-

tives, and drawing from these for better communication and cooperation. When we stop and scrutinize our own motivations, test them through the vehicle we select (design, resource management, etc.), evaluate them, change them appropriately in line with sustainable values, communicate them, and encourage institutions to accommodate them, will we begin to strengthen the "ability" part of sustainability.

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