
Theory And Practice In Sustainability: Building A Ladder Of Community Focused Education and Outreach

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Abstract: *Investigating the links between the emergence of the idea of "sustainability" and the rise of "participatory processes" in community planning and design offers a conceptual framework for developing and assessing programs and approaches to education, outreach, and professional practice in post-industrial society.*

The Idea of "Sustainability"

Current literature suggests that social sustainability and environmental sustainability are two inter-dependent and mutually supporting aspects of a comprehensive approach to sustainability. Much of the literature stresses the importance of intergenerational and intra-generational equity in the distribution of both environmental resources and environmental quality, suggesting that concern for future generations cannot be cause to ignore inequities within living generations

(Brown-Weiss 1990; Brundtland 1987; ICUN 1980; 1993; PCSD 1996; Sachs 1995). The roots of the idea of sustainability may be seen in the merging of the Social Justice Movement of the 1960s and the Environmental Movement of the 1970s (Eckersley 1992; Gare 1995; Merchant 1996; Rimmerman 1997). The discourse growing around the idea of sustainability suggests the need for research and reflection on how this merging of the two most powerful social movements of the late twentieth century may be affecting post-industrial society. Investigating the emergence of the idea of sustainability in the history of Western thought lays the

foundation for an understanding of changing social values and behaviors and suggests a definition of sustainability that may inform teaching, academic research, and professional practice in post-industrial society, .

A literature search found two classic studies that form a beginning point for this investigation one in the history and philosophy of science and one in sociology: *The Structure of Scientific Revolutions* (Kuhn 1962), and *American Ideologies* (Dolbeare and Dolbeare 1976), respectively. Thomas Kuhn's 1962 study of *The Structure of*

Scientific Revolutions is still required reading for courses in the natural and social sciences. Kuhn's observation and description of how new discoveries change the way scientists understand the world popularized the phrase "paradigm shift." Kuhn's claims created a major controversy in the era of "objective science" when he revealed the subjective side of science by asserting that a scientific "truth" under one paradigm (a heliocentric universe, pre-Darwinian biology, and Newtonian physics), and a totally contradictory "truth" under a different paradigm (geocentric universe, Darwinian evolution, and Einsteinian physics), can exist simultaneously. Kuhn's controversial assertion was that when faced with competing paradigms, a scientist must make a completely subjective choice: reject the dominant paradigm and adopt an emerging one; or refuse to accept the new and keep working with the familiar. Kuhn suggested an analogy between how a "paradigm shift" and a visual "gestalt switch" (the duck/rabbit drawing for example) each fundamentally changes the way the world is seen and understood (Kuhn 1962, p. 85). Significantly, Kuhn observed and described how this new understanding of the world redefines both the questions and the methods deemed appropriate in scientific inquiry (Kuhn 1962: pp. 6, 111–135).

Kenneth and Patricia Dolbeare's 1976 study of *American Ideologies* is still cited by political and social scientists today (Dolbeare and Dolbeare 1976). The Dolbeares's study suggests that ideologies may be investigated through three defining characteristics: 1. a *worldview* which reflects an understanding of the structure and function of society; 2. the *values and goals* believed legitimate and desirable for society as a whole; and 3. the *behaviors* deemed appropriate in attaining or maintaining those values and goals. The Dolbeares suggest that ideological characteristics vary over time, most commonly through long-term social processes (Fisher 1995, pp. 157–160).

This brief summary provides a glimpse into how a synthesis of Kuhn's "paradigm shifts" and the "three characteristics of ideologies" by the Dolbeares can inform an investigation into the emergence of the idea of sustainability and refine its definition. Figure 1 illustrates how these studies were synthesized to construct a model for this research. The model illustrates how shifts in a society's understanding of the structure and function of the natural world, its *science*, changes that society's understanding of the structure and function of the social world, its *worldview*. The model also illustrates how this dynamic relationship affects societal values and

eras. Medieval era "Science" was based on an understanding of the world as a "Great Chain of Being" which began with the Creator and ranks of angels, continued through the Pope, church hierarchy, monarchs and nobles, down to peasants and savages. From there, the hierarchy extended from mammals down to minerals. Contemplation of nature was an act of priestly devotion. The Medieval understanding of nature is consistent with that society's worldview as exemplified in the feudal structure. The path to eternal salvation was through duty and service, as dictated by church and feudal tradition, and was based on one's place in

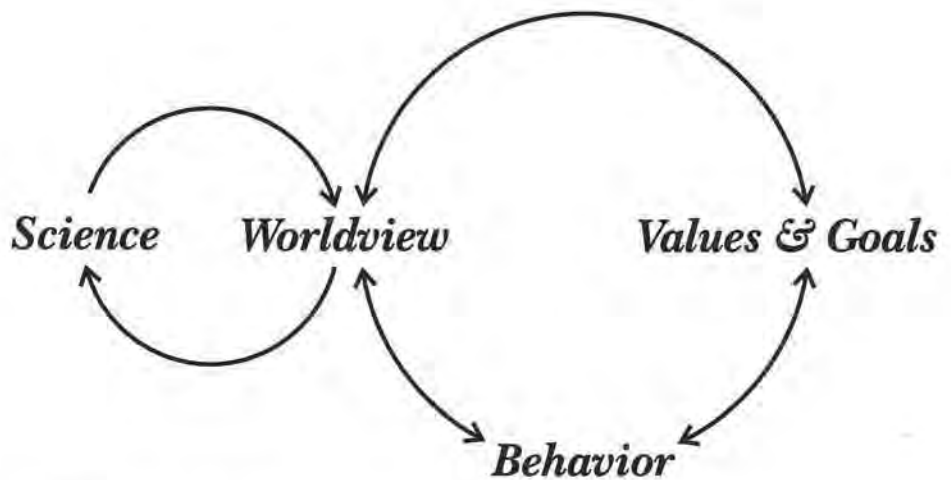


Figure 1. Paradigm Dynamics

behavioral norms. The model offers a line of inquiry to investigate these characteristics in major eras of Western civilization and an understanding of the emerging idea of sustainability.

Figure 2 outlines the characteristics of paradigm dynamics as revealed in an investigation of the Medieval, Renaissance, Enlightenment, Industrial, and Post-Industrial

the "Great Chain of Being" (Bowler 1992; Hart 1980; Livingstone 1992).

The era of Enlightenment was a time when scientific revolutions and social revolutions were mutually generating activities. The Reformation and the Protestant work ethic reinforced scientific discoveries that brought the earth centered universe and the Great Chain of Being into question. Nature was now the abundant providence of a beneficent creator accessible to all who would work hard and risk dangers. Conquering

nature through science promised to emancipate humankind from the fear of Nature, and from oppressive tradition and superstition. The authority of the church declined as the elite in state and merchant classes gained power (Berman 1988; Bowler 1992; Habermas 1993; Harvey 1990; Livingstone 1992; Porteous 1996).

With the loss of divinity in nature and the decline of Church authority, an increasingly powerful state and merchant elite called on science to explore and exploit the resources of the natural world. Unlike previous eras, which saw linear time in human history as *progress toward a clearly defined end* (salvation, revela-

(Bowler 1992; Gare 1995; Habermas 1993; Hart 1980; Harvey 1990; Henderson 1991; Horkheimer and Adorno 1973; Livingstone 1992; Marx 1964).

According to this conceptual model, current ecological science has helped shape an emerging worldview which understands the structure of society as a system of webs. While the connections between this worldview and social values that reflect a growing concern for environmental quality is very clear, what is striking are the indications of another major conceptual transformation in Western thought. Unlike previous eras, which understood the structure of society as hierarchical, with the church, feudal,

Traditional/Non-traditional Political Behaviors. Social scientists have researched, documented, and theorized about the declines in traditional forms of political participation throughout the second half of the twentieth century. Robert Putnam's studies of the decline in "social capital" indicate steady declines in voter turnout, participation in traditional social and political groups, and social trust in the age groups born since the late 1920s (Putnam 1995a; 1995b). However, recent studies are revealing meaningful *increases* in non-traditional forms of political participation in age groups born since the 1950s (Inglehart 1995; 1996).

Figure 2: Shifting Paradigms in Western Thought.

Era/Paradigm	Science	Worldview	Values&Goals	Behaviors
Medieval	Great Chain of Being	Feudal Order	Salvation	Church elite-directed
Renaissance	Humanism	Monarchy/Colonial Subjugation	Revelation	State & Church elite-directed
Enlightenment	Mechanical Control	Reformation	Emancipation	State & Merchant elite-directed
Industrial	Resources	Global Order	Progress	Technocracy elit-directed
Post-Industrial	Ecology/Complexity	Webs & Networks	Sustainability	Participatory elite-directing

tion, emancipation), the Industrial era underwent a conceptual transformation that undermined the teleological basis of Western thought: Technological and economic progress itself became the focus and goal of society. The technocracy (legitimated by the ideas of Social Darwinism) controlled decision making and directed behavior at all levels of social organization

monarchical, state, or technocratic elite dictating and directing social and behavioral norms, an emerging post-industrial worldview perceives a social structure based on the *non-hierarchical* idea of webs. New scientific understanding of the world, corresponding shifts in worldview, and growing concern for social justice and environmental quality suggest a major shift in post-industrial society. If the model of paradigm dynamics offered in figure one is conceptually sound, then current research would reveal evidence of changing social and political behaviors and give evidence of "sustainability" as an emerging societal level paradigm.

Based on nearly two decades of research in social and political trends of advanced industrial nations, Ronald Inglehart suggests that as a result of the rapid economic development and expansion of the welfare state following World War II, the formative experience of post-war birth cohorts differs from older cohorts in ways that lead them to develop fundamentally different value priorities. He argues that

Figure 3: Trends in Social and Political Behavior.

Declining Forms of Behavior: (Elite-directed)	Increasing Forms of Behavior: (Elite-directing)
Election Turnout Political Party Affiliation Social Group Affiliation Campaigning Donating to Political Campaigns	Neighborhood and Community Groups & Projects Grassroots Organizations Direct Action Activism Community "Visioning" Projects Voter Policy Initiatives and Referenda

throughout most of history, the threat of severe economic deprivation or even starvation had been a crucial concern for most people. The unprecedented degree of economic security experienced by the postwar generation in most industrial societies led to a gradual shift from "materialist" values toward "postmaterialist" priorities. These priorities include: protecting freedom of speech; a less impersonal, more humane society; giving people more say in important government decisions; giving people more say in their jobs and communities; a society in which ideas count more than money; less concern about respect for authority; and more concern for protecting the environment (Inglehart 1995; 1996).

The behaviors involved with "postmaterialist" values include: the growth of grassroots organizations; neighborhood based clean-up, green-up, and safety patrol groups; social and environmental direct action activism, including NIMBY protests and ACT-UP demonstrations; and community service programs (Inglehart 1995; 1996; Rimmerman 1997; Dowie 1995). Inglehart suggests these social and political behaviors indicate a decline in "elite-directed" behavior and an emergence of innovative "elite-directing" forms of political behavior (Inglehart 1995; 1996) (Figure 3).

Elite-directed vs. Elite-directing Political Behaviors. Analyzing the differences between elite-directing and elite-directed behaviors in several case studies of citizen activism reveals four key dissimilarities: 1) organizational structure; 2) spatial

focus; 3) temporal focus; and 4) decision-making processes (Alinski 1971; Braungart 1995; Inglehart 1995; Kemmis 1990; Rimmerman 1997; Schneekloth 1995; Teske 1997; Zepatos 1995) (Figure 4). Evident in this analysis is a shift in emphasis: *from* remote, delegated decision-making based on hierarchical structures and short-term focus; *toward* local, community based participatory decision-making focused on long-term social and environmental issues. Significantly, this shift in emphasis is where the connection between the *ethics and methods* of the social justice and environmental movements, and the roots of the idea of sustainability, are made evident.

A Working Definition. Defining "sustainability" based on the linking of history, theory, and research in both the natural and social sciences suggests that "sustainability" is an emerging paradigm in post-industrial society that is flattening traditional hierarchical social structures under the growing pressures generated by a positive feedback loop between the goals of the social justice and environmental movements. Researchers' projections suggest that post-materialist values and behaviors are growing and will continue to shift under conditions

of economic security in post-industrial societies (Capra, 1988; Eckersley, 1992; Inglehart, 1995; 1996; 1997; Zepatos, 1997). In the second part of this study an attempt is made to scratch the surface of how this definition and conceptualization of sustainability may inform professional practice, academic research, and teaching in post-industrial society.

Education and Outreach in the Era of Sustainability.

Current research and critiques of education suggest that with increasing concern for social and environmental conditions, communities increasingly turn to their institutions of higher education for lifetime learning and outreach, revealing conflicts between community needs and institutional structures and methods (Lempert 1996; Tierney 1998; Sinnott and Johnson 1996). Figure 5 outlines points of conflict that can be identified by comparing two general expressions of community needs (formulated from the research presented in part one of this study) with research and writing from current critiques of higher education (Berry and Gordon 1993; Brady et al. 1995; Guarsci and Cornwall 1997; Lempert 1996; Kemmis 1990; Tierney 1998; Sinnott and Johnson 1996; Snow 1992; Orr 1996; Verba 1993; Verba et al. 1995).

Increasing focus on long-term, community-level social and environmental issues and participatory democratic processes suggests: 1) the need for a multi-disciplinary approach to addressing complex social and environmental conditions;

Figure 4: Different Characteristics of Elite-directed & Elite-directing Behaviors.

Characteristics	Elite-directed	Elite-directing
Structure	Hierarchical	Webs & Networks
Spatial focus	Remote	Local
Temporal focus	Short-term (election cycle)	Long-term (future generations)
Decision making style	Delegated	Participatory

Figure 5: Points of Conflict Between Community Needs and Existing Institutions of Higher Education.

Community Needs	Existing Institutions
1. A problem-based, multi-disciplinary approach to complex social and environmental conditions.	Minimum interdisciplinary communication Lack of communication links between educational institutions, community groups, local governments, and NGOs.
2. Citizens from all social and cultural backgrounds and all skills and professions with knowledge and experience in participatory decision making processes.	Lack of social and cultural diversity in the student body, faculty, and administration. Lack of lifetime learning opportunities. Minimum opportunities to model participatory democratic processes within the structures and methods of traditional higher education.

and 2) the need for a citizenry from all social and cultural backgrounds and from all skills and professions to be practiced and active in the processes of participatory decision making.

The major conflicts with existing institutions include: 1) minimum inter-disciplinary communication; 2) a general lack of communication links between institutions, community organizations, local level government, and non-profit organizations; 3) a lack of social and cultural diversity in the student body, faculty, and administration; 4) a lack of lifetime learning opportunities; and 5) limited opportunities to model participatory democratic processes within the hierarchical structures and traditional methods of higher education. It is important to recognize that these conflicts are directly related to the historical development of formal institutions of higher education, which were structured in the Medieval era under feudal order and increasingly departmentalized through the scientific and industrial revolutions to facilitate attainment of the societal goals of those eras, i.e., efficient exploitation of resources, and technological and economic progress (Lucas 1994; Sinnott and Johnson 1996).

Community Focused Education.

Recognizing the deeply ingrained sources of conflict between community needs and traditional institutions of higher education reveals the need to turn a critical eye toward existing educational programs in a way that will reveal which aspects are congruous and which are incongruous with the needs of post-industrial society. To construct a systematic framework for this particular task, a literature search was undertaken to investigate possible links between participatory democratic processes and education. This research uncovered two classic studies in planning theory and education theory: Sherry Arnstein's "Ladder of Citizen Participation" (Arnstein 1969) and Benjamin Bloom's "Taxonomy of Cognitive Objectives" (Bloom 1956). A process of analysis and synthesis of these two studies suggests a basis for constructing the required evaluation framework.

Written in the late 1960s, Arnstein's study is still frequently quoted in planning and political science literature. Intentionally provocative, the Ladder progresses from "nonparticipation" to "tokenism" to "degrees of

citizen power" by ascending eight rungs of the "Ladder of Citizen Participation." The first two rungs are "Manipulation" and "Therapy": these approaches are intended as a vehicle for elites to "educate" or "cure" a target public under the guise of participation. "Informing" and "Consultation" are seen to allow citizens a time and place to voice their concerns, but offer no assurances that their voices will be heeded. "Placation" offers citizen an advisory role, but no decision-making powers. "Partnership," "Delegated Power," and "Citizen Control" demonstrate increasing levels of citizen decision-making power from negotiating, to majority in decision-making, to full managerial power (Arnstein 1969, p. 217). Arnstein's analysis details the steps from a pretense of participation to meaningful participation, demonstrating an understanding of and engagement in decision-making as a process.

Bloom's "Taxonomy of Cognitive Objectives" written in 1956, is still the cornerstone of much theory and discussion of objectives in educational programs. Bloom's taxonomy is a nested progression of cognitive skills intended to suggest approaches to setting educational objectives. The lowest objective is "Knowledge"; the behavior expected is remembering information received in a learning situation (Bloom 1956, p. 62). The second objective is "Comprehension": this looks for behaviors and responses which represent an understanding of the message contained in a communication (Bloom 1956, p. 89). The third objective is "Application": this level expects students to apply their comprehension of something in an appropriate situation with no outside guidance (Bloom 1956, p. 120). The fourth level is "Analysis": the objective is to break down the information material into its constituent parts and detect the relationships between, and organization of the parts (Bloom 1956, p. 144). The fifth objective is "Synthesis": this demonstrates a process of working with elements or parts and combining them in a way to reveal a pattern or structure not clearly evident before (Bloom 1956,

Figure 6: Arnstein's "Ladder" and Bloom's "Taxonomy."

Ladder of Citizen Participation	Taxonomy of Cognitive Objectives
Citizen Control	Evaluation
Delegated Power	Synthesis
Partnership	Analysis
Placation	Application
Consultation	Comprehension
Informing	Knowledge
Therapy	
Manipulation	

p. 162). The sixth and highest order is "Evaluation": this level demonstrates the capacity for making judgments about value and involves the use of criteria and standards for appraisal (Bloom 1956, p. 185).

These necessarily brief reviews of two very thoughtful authors set the stage for an analysis and synthesis of their contents and their structures to form a basis for evaluating educational programs aimed at meeting the needs of a society concerned with complex social and environmental issues and participatory decision-making processes (Figure 6). The following section details how this investigation analyzed and synthesized Arnstein's "Ladder" and Bloom's "Taxonomy" to construct an evaluation framework that reveals communication structures, levels of multi-disciplinary integration, educational approaches, and levels of cognitive objectives in a progression up six steps of a "Ladder of Community Outreach" (Figure 7).

"The Ladder of Community Outreach." At the lowest rung of this Ladder is "Educating the Public." Often similar to a public relations campaign, the intent is to promote a project designed by community and academic elites for issues identified by community and academic elites. This outreach expects no participation or cognitive engagement from the public. The second, third, and fourth rungs are traditional community outreach programs. Each of these offers a valuable community service. However, with each step up the "Ladder," opportunities for community participation, multi-disciplinary integration, and educational objectives are increased and the ideals of Community Focused Education are approached.

The fifth rung is represented by educational approaches being explored in a few experimental programs around the country. The idea

of "Community and Institutions in Partnership" reflects attempts to partner cultural and environmental awareness with educational curriculum development. The most familiar examples of this approach are the "Foxfire" program which began in the 1960s and is grounded in Dewey's principles of learning, and the "Ecoliteracy" program initiated in 1991 by Fritjof Capra, author of the *Tao of Physics* (Capra 1984, Bowers 1995). An important contribution to this approach is offered by "Second Nature," a nonprofit organization which has been working since the late 1980s to "expand the capacity of colleges and universities to make an environmentally just and sustainable future" (Second Nature, n.d.). Each of these programs aims at higher order cognitive objectives and development of skills in participatory processes.

The sixth and highest rung, "Community Making as Education," is offered here as an ideal form of Community Focused Education, as suggested by the highest orders of "participation" and "cognitive objectives" given by Arnstein and Bloom. The best illustrations of this ideal found by this investigation are experiments in community participation and "visioning" projects. Unlike the other forms of outreach, where the impetus, scope, and methods are largely determined by academic interests, these projects are generated within the community by broad-based concern for long-term social and envi-

Figure 7: Ladder of Community Outreach.

Ladder of Community Outreach	Structure	Integration	Approach	Objectives
Community Making	Webs/Networks	Maximum	Iterative	Evaluation
Partners in Education and \Community	Networks	Significant	Problem based	Synthesis
Public Meetings & Surveys	Interactive	Considerable	Product based	Analysis
Expert Services	Two-way	Limited	Issue based	Comprehension
Information dissemination	One-way	Minimal	Basic facts	Knowledge
Educating the Public	One-way	—	Public relations	Compliance

ronmental issues, i.e., sustainability. Also, unlike the other forms of outreach which focus on particular issues or problems, these projects focus on community-making as an iterative process by engaging a broad spectrum of actual stakeholders from a community (which may or may not formally include academia) in a process of defining community goals and, importantly, in developing participatory processes and tools to iteratively assess and evaluate the effectiveness of programs and policies aimed at attaining those goals (Hester 1985; 1990; Maclaren 1996; Mullaney 1997; PCSD 1996; Sawicki 1996; Sustainable Seattle 1995; Williams 1996).

Community Participation and Visioning Projects. Randy Hester's now classic retrospectives (Hester 1985; 1990) on his work with the small town of Manteo, North Carolina recall and outline the development of an experimental approach to citizen participation in community planning and design. This approach has since served as a model for community and neighborhood scale projects. The process began with information gathering that identified what residents liked most about their town and their concerns for the future. The need for economic development to support the rebuilding of structures and infrastructure, which were in various stages of decline and dilapidation, was identified as the major concern. This process also identified specific social activities and their places of enactment essential to community life and community identity. During the process of exploring how the tension between the importance of preserving these places and the necessity for development might inform community decision-making, the idea of a "Sacred Structure" was generated. Hester's analysis recalls how widespread community participation and support helped develop the Sacred Structure Inventory into both a preservation device and a design inspiration which helped draft development codes and guidelines (Hester 1985). Ten years after its develop-

ment, Hester reported how the Sacred Structure continued to act as a framework to evaluate changes in the community, both before and after implementation, in terms of impact on the most valued places and community life (Hester 1990).

Virginia Maclaren writes about participation and community visioning at the urban and regional scales (Maclaren 1996). The examples she draws on in her analysis include projects in Seattle, Washington, The Regional Municipality of Hamilton-Wentworth (Ontario, Canada), and the Province of British Columbia. Maclaren's study analyzes the processes followed by these municipalities to engage broad-based community participation in working toward a sustainable future. Her analysis reveals a common process that begins with a multi-stakeholder "visioning" exercise to identify how a community should appear at some specified future date in order to be regarded as a "sustainable community." Specific social and environmental "indicators" are then identified by the participant groups (examples: quantities of municipal solid waste; area of greenspace available for community use per capita; percentage living below the poverty line; carbon dioxide emissions per household; number of people participating in civic activities). Baseline measures of each "indicator" are collected and documented in a report which is disseminated throughout the community. Periodic measures of these indicators, published and disseminated in the form of a "Sustainability Report" then become the basis for assessing and evaluating the community's progress toward the "sustainable community" that was "visioned" in step one (Maclaren 1996).

Maclaren observes how evidence of positive progress is important for justifying past expenditures on sustainability initiatives and building support for new initiatives, while

evidence of lack of progress toward sustainability can provide incentives for community groups to demand more action from community leaders. Significantly, Maclaren observes how these reports are used by individuals to educate themselves about sustainability issues and to evaluate how their own actions may contribute to sustainability goals (Maclaren 1996).

Summary and Conclusions

The first part of this paper synthesizes history, theory, and research in both the natural and social sciences to illustrate and explore the connections between increasing concern for social justice and environmental quality, increasing demand for participatory decision-making, and the development of the idea of "Sustainability." Sustainability was defined as an emerging paradigm in post-industrial society that is flattening traditional hierarchical social structures under the growing pressures generated by a positive feedback loop between the goals of the social justice and environmental movements.

The second part of this study draws on the discussion and definition of sustainability to reveal and illustrate the incongruities between the growing need for a multi-disciplinary approach to complex social and environmental conditions, the need for an informed citizenry who are practiced in the skills and processes of participatory decision-making, and traditional structures and methods of higher education and outreach. A "Ladder of Community Outreach" was constructed as a framework to evaluate and assess different forms of community outreach and education programs. This critique reveals the highest ideals of community focused education: "evaluation" and "citizen control," are attained through broad based citizen participation and "visioning" projects. Analyses of the processes involved in these participatory projects reveals an iterative process of goal setting, development of strategies to attain these goals, and evaluation of progress toward those goals.

A Summary Story

Several years ago Cheryl Doble was approached by community leaders of a small town in Upstate New York. Community residents were concerned about the economic decline evident in the dilapidated and vacant structures and empty lots in their once busy and well maintained village. These concerns were motivated by an understanding of how the cycle of economic and physical decline affects the social and environmental future of their community. After several weeks of careful information gathering and an iterative process of participatory planning *charrettes*, a community "vision" was generated, a plan developed, and a strategy for implementation was worked out with widespread community support. Unfortunately, at the last moment the town council withdrew its support for the project. This was, of course, very disappointing for everyone involved, who by that time had feelings of "ownership" in the project and dedication to its goals. However, nearly a year later a note arrived from one of the community members involved in the visioning project. Attached to the note was a clipping from the local newspaper that informed her that the two town councilors who were up for reelection had been unseated. The note explained how the community members who had participated in the visioning project had organized and chosen candidates from among themselves to run against the uncooperative incumbents. Consequently, the project is currently underway.

Progress or Sustainability? Our conclusions about theory and practice in sustainability are directed specifically toward practice, teaching, and research in landscape architecture, and are largely informed by citizen participation and visioning projects like those discussed above. These studies and stories exemplify the connections between participatory processes, objectives in community education, and sustainability. In each

case, broad-based concern for both social and environmental issues produced innovative social processes through which participants practice and demonstrate "the capacity for making judgments about value that involves the use of criteria and standards," (see Bloom's taxonomy in Figure 6) while they participate in an iterative process of "citizen control" (see Arnstein's ladder in Figure 6) over decision making affecting the future of their communities. These are the qualities at the highest level of the Ladder of Community Outreach.

Significantly, the evaluative framework of the Ladder of Community Focused Education and Outreach reveals how some unique aspects of landscape architecture education can be models for preparing future practitioners and academics in many fields to participate in sustainable community making as concerned citizens and as professionals. These aspects include: the "problem based" studio approach; the synthesis of ecological and social issues; frequent group projects in which the skills involved in participatory decision making are practiced; and importantly, current experiments in community outreach modeled after citizen participation and visioning projects (Bloomer 1998; Hester 1990; Lee 1993; Lewis 1996; Lyle 1994; Thayer 1994). These findings suggest the need for the profession of landscape architecture to continue to research, develop, refine, demonstrate, document, and disseminate innovative approaches to practice, teaching, and outreach that build on these unique aspects of the profession while recognizing and engaging new challenges being revealed by the emergence of the era of sustainability.

Our conclusions suggest that traditional structures and methods of higher education, formed from Medieval hierarchies and departmen-

talized during the industrial revolution, are increasingly incongruous with the growing ecological thought and social conditions of post-industrial society. As concern for social justice and environmental quality increases demand for participatory processes in community decision making, the Kuhnian "choice" looms ever larger. Just as practitioners at the turn of nineteenth century were compelled to grapple with a new understanding of the dynamic processes at work in nature when the enlightenment and the scientific revolution challenged the static understanding of the world (Disponzio 1998), practitioners today are grappling with a new understanding of how the synthesis of natural and social processes are at work in shaping the landscape.

At the turn of the nineteenth century some practitioners chose to experiment with the new questions and methods revealed by the new paradigm and they transformed the art of garden design into the profession of landscape architecture (Disponzio 1998). If, as we conclude here, Sustainability is a new paradigm, redefining and revealing new sets of questions and new methods to approach the challenge at the core of the profession: the artful integration of social and environmental systems, we now have a choice to make as practitioners and educators. We can choose to recognize the changes in our society as indications of an emerging paradigm that may grow to fundamentally change the way we understand the world. We can approach our work as practitioners, academics, and educators questioning the underlying logic, structures, and values of what we do through the lens of this new paradigm. We can explore this new way of looking at and thinking about the world to see what opportunities it opens up, testing its limits and constraints, and participating in its definition and development. And we can recognize the increasingly significant evidence of how the processes and methods we choose as we engage in practice, teaching, and research in landscape architecture contribute to the possibility of a sustainable future.

John Lyle, who made an important contribution to understanding the idea of sustainability in Landscape Architecture with his book *Regenerative Design for Sustainable Development*, wrote about the significance of the intersection of participatory processes and education. Revealingly, Lyle quoted Thomas Jefferson: "I know no safe depository of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education" (Jefferson quoted in Lyle 1994, p. 269).

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