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Human Ecology Review

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On the Cover

"Paradise Lost," Spring City, Utah, by *Scott D. Wright*

Human Ecology Review

From the Editor

Linda Kalof
George Mason University

Volume 7 of *Human Ecology Review* marks the second year that the journal has been produced at George Mason University. With continued funding from **Dean Daniele Struppa** of The College of Arts and Sciences, the support and encouragement from our most valuable peer reviewers, and of course **Jenny Growney's** superb skills, we have made substantial strides toward our goal of making *HER* a visible and viable first choice publication option for scholars of human ecology. We also appreciate the support of **Joe Scimecca**, Chair of Sociology and Anthropology, in providing part of the Department's graduate student tuition waiver funds for the journal.

Congratulations to **Jenny Growney** for receiving the coveted Most Valued Graduate Student Award from Alpha Kappa Delta, the Sociology Honor Society, Department of Sociology and Anthropology. It was quite a feat indeed to capture award winning grades as a graduate student *and* ensure the efficient operation of our beloved *Human Ecology Review*. I am sorry to report that this issue marks **Jenny's** last as she completes her graduate degree at George Mason. She will be sorely missed, but we wish her well.

Congratulations also to **Tom Cheetham** whose Forum essay, Dogmas, Idols and the Edge of Chaos, has just won a prestigious **John Templeton Foundation Exemplary Award**. The award (worth $3,500) was announced just as *HER* was going to press. The Templeton Foundation sponsored scholarship on the relationship between science and religion, and the competition required that submitted essays were either published or accepted for publication in a recognized journal during the period of the competition, January 15 to March 1, 2000. Tom's revised essay was accepted for publication in *HER* on January 25, 2000. I am very proud that Tom chose *HER* as a forum for his work. His essay exemplifies the excellent interdisciplinary scholarship that we seek to publish in *Human Ecology Review*.

We now have a separate URL for *Human Ecology Review*, thanks to **John Broiche**. You may access our web site at humanecologyreview.org, which provides current *HER* contents, abstracts of current articles, information for contributors and the names of those affiliated with the editorial work of the journal.

Again I make my plea that you ensure *Human Ecology Review* is in your library. A library subscription form is in the back of this issue. Please fill it out and take it to your librarian for consideration. We will be pleased to provide sample copies of the journal, given availability. Library subscriptions are the journal's most solid base of visibility and funding. Please help us in this effort.

The 11th annual meeting of the Society for Human Ecology is fast approaching. For more information on the SHE meeting in beautiful Jackson Hole, Wyoming, this October, please see societyforhumanecology.org, or contact **Jonathan Taylor** (see email or the back cover). This will be an exciting and stimulating meeting, and we hope for a strong and enthusiastic response to the Call for Papers. For information on participation options and deadlines for submission of information, please see the SHE web site.

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Risk, Remediation and the Stigma of a Technological Accident in an African-American Community

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Abstract

Technological stigma — the tainting of products or places as dangerous due to associated fears about health — is gaining prominence in the social and policy sciences as a theoretical construct. The consequences of this new stigma is defined primarily in economic terms such as the devaluation of real property nearest a technological hazard or the demise of a product's value (e.g., British "Mad Cow" beef) in the wake of fears about contaminants. This paper argues that a preoccupation with market or economic impacts obscures the profound social and psychological repercussions for those exposed to technological hazards, of their inward reflections and outward responses to a world that has projected its fears and its lethal byproducts upon them. It will detail the physical, psychological and sociopolitical experience of living in a contaminated African-American community and in so doing paint a decidedly noneconomic portrait of the stigmatization of body and place.

Keywords: *stigma, contaminated communities, African Americans and the environment, community studies of risk, social and environmental impact, environmental justice*

Introduction

This paper documents the experience of contamination in an African American community in rural Georgia.[2] It begins with a description of the setting in which events took place. This is succeeded by a brief discussion of the theoretical construct: technological stigma. Thereafter, it is argued that this new construct need properly explore and incorporate the social, psychological and bodily consequences of exposure and thus recognize the relationship between technological stigma, social stigma and the contamination experience. The approach taken herein relies on both quantitative and qualitative findings with the ultimate goal of speaking to and of experience rather than data per se. Consistently, the paper's discursive format is part narrative in that it tells an image-laden story, and part expository in that it presents some quantitative evidence for its central points.

Context

Marshall, Georgia, situated in Pecan County in southern Georgia, hosts an historically Black college, a population of 5,000, and a very limited stock of inexpensive housing. Railroad tracks and a major thoroughfare separate the Alouette Chemical Works plant and an adjacent African-American neighborhood from the town's more prosperous residential and commercial center. The Alouette Company began operating in 1910 as a lime-sulfur plant, later (1927) becoming a supplier of arsenic-based pesticides for agricultural, lawn and garden markets (Hillsman and Krafter 1996). Locals refer to the plant as "the dust house," a designation that invokes the particulate matter that once permeated neighborhood air and life. A ditch carrying untreated waste from the plant traveled through the adjacent neighborhood until it was covered in the late 1970s. Adult residents of the neighborhood recall playing in the ditch as children while their parents were said to have waded across the ditch to avoid the longer walk to the plank bridges at the ends of each block.

For most of its history, the plant was owned and operated by a prominent local White family; it was sold to a corporate chemical manufacturer in 1985. In 1986 the state Department of Environmental Quality requested that the company clean contaminated areas within the commercial facility where arsenic had adhered to the soil on plant property. Nothing was said to the predominantly African-American residents living nearest the plant at that time.[3] In 1990 the site was recommended to the U.S. Environmental Protection Agency (EPA) for listing on the National Priority or "Superfund" list. Three years passed before the EPA notified affected citizens and issued cleanup orders to the plant.

Beginning in 1993, residents of the plant neighborhood learned that several probable carcinogens, in particular arsenical compounds, had permeated the soil in neighborhood yards and the dust inside local homes. Testing in 1994 through 1997 on the plant property and throughout the adjacent neighborhood indicated dust- and soil-based arsenic levels of 15 to 800 parts per million despite the cessation of arsenic production during the mid-1980s. The plant grounds include hot spots of up to 30,000 parts per million (ppm).

The background level for arsenic in comparable geographic regimes was judged to be about 7 ppm. Chronic arsenic exposure has been associated with skin, lung, liver, bladder, kidney, and colon cancers (ATSDR, 1990); arsenic is also believed to be a cancer "progressor" as is benzene and asbestos (Steingraber 1997, 244). A 1996 study conducted in Marshall, Georgia by the Federal Agency for Toxic Substances and Disease Registry (ATSDR) concluded that significant dangerous exposures had occurred in the past, but that current post-remediation levels of exposure were not dangerous to residents (ATSDR).

Theoretical Framework

Risk scholars recognize that physical harm results from exposure to chemicals, heavy metals, and/or radioactive isotopes, and that the social and psychological experience of that harm is both fully rational and central to the risk experience (Slovic 1987, 1992; Edelstein 1987; Erikson 1994; Kasperson 1992). A prominent extension of risk work involves the study of technological stigmas as first defined by Edelstein (1987) and later spelled out by Gregory, Flynn and Slovic (1995) in the periodical, *American Scientist*. Technological stigma occurs when certain products, places, or technologies are identified by the public as dangerous and subject to avoidance given their affiliation with health risks (Gregory, Flynn and Slovic 1995). Stigma targets are generally affiliated with risks the public views as dreaded, potentially fatal; involuntarily imposed, or regarded as beyond individual control (Slovic 1987).

The primary evidence for technological stigmas is the co-existence of negative cognitions about a place, product, or technology — negative word associations, imagery, affective descriptors, and perceived risks — with detrimental changes in consumer behavior (Flynn, Kasperson, Kunreuther and Slovic 1997; Flynn, Peters, Mertz and Slovic 1998). Ultimately the stigmatized object becomes an epicenter from which severe economic impacts emanate. The millions in lost revenues incurred by Johnson and Johnson in the wake of fear about further Tylenol poisonings, the collapse of the British beef industry in the face of reports about Creutzfeldt-Jakob or "Mad Cow" disease, the decline in land values near nuclear facilities or chemical plants, and the devaluation of real property alongside electromagnetic fields are classic cases of (respectively) product, place and technological stigma (Mitchell 1989; MacGregor, Slovic and Morgan 1994; Slovic, Layman and Flynn 1990).

Defining technological stigma in terms of market impacts is logical to the extent that economic viability and public acceptance are necessary for the commercial development of modern technologies. An emphasis on economic impacts may also be driven by tort laws that permit citizens to sue for damages when real property is devalued due to its proximity to a hazardous facility. Regardless, a focus on pecuniary impacts sustains a model of stigma that implicitly narrows the definition of impact to altered purchase habits or fluctuating market values. This reduces the position of human proponents to one of consumers whose spending drops to *avoid* suspect pain killers (Tylenol) or buyers whose worries prompt them to *think negatively about* housing purchases; in so doing something of the "complex interplay of psychological, social and political forces" that fall within the web cast by technological stigmas is lost (Gregory, Flynn and Slovic 1995, 222).

In contrast, a model that recognizes the full social expression of stigma has the potential to accommodate the important association between the stigmatizing of a technology or place by external society and the adverse effects on the people most immediately impacted. The relationship becomes more pertinent in light of recent speculation about the disproportionate presence of technological hazards in socially stigmatized especially minority communities (Bullard 1990; Szasz 1994; Johnston 1994, 1997; Lee 1987).[4] Those historically subject to social stigmas — defamation due to race, class, or economic status — might also be those contemporarily subject to technological hazards, and thus in some circumstances, technological stigmas.

Hereafter, this paper seeks to demonstrate the noneconomic effects of stigma on one community subjected to the experience of contamination. Research conducted in Marshall shows that the experience of living in a contaminated and stigmatized place includes both physical and psychological invasions. Neighborhoods are structurally altered; domestic routines are profoundly disrupted and long-time residents come to be haunted by the inversion of home as a safe haven, an inversion that insinuates itself into thoughts about health and leads to the nagging fear that one's body has been infected by toxic substances. Residents notably invoke their sociopolitical experiences of racism, of being socially marginalized, to interpret how it is that they are viewed by the outside world, to explain why some citizens are protected from contaminants while others are not, why their concerns go unheard, or how it is that they are blamed for the economic woes of the larger community. This study suggests that these opinions may be tied to the defeating social climate that can accompany the experience of contamination and thus warrant study as symptoms of the link between technological and social stigmas.

Methods

In the spring and summer of 1996, 206 questionnaire-based interviews employing open- and closed-ended questions were administered to 66 past and 140 current residents of the contaminated neighborhood. Interviewees were selected from over 600 past and current residents listed as plaintiffs in litigation pending against the Alouette plant. Plaintiffs included all but a few past and present residents of the plant neighborhood who were (a) traceable, (b) had lived in the neighborhood for at least five years, and (c) were said, by a medical doctor, to have clinical signs of arsenic exposure. Interviewees (all 206) were selected not at random but because they lived or had lived in the houses closest to the plant and/or because their house or yard had already been tested for the presence of arsenic. Only one of the 206 interviewees currently works at the plant and fewer than 10 have ever worked at the plant for more than three months. All but three of those interviewed were African-American, although a larger proportion of the 600 litigants (approximately five percent) were White.[5]

Twenty-six of the 140 people referred to here as current residents moved or were moved in response to the news about contamination. The other 114 (of 140) still live in the neighborhood. The second group of people referred to here as past residents (66) include only those people who left the neighborhood well before (often many years before) the news of contamination broke. Most in this latter subset of interviewees live in comparable though not contaminated communities elsewhere in rural Georgia. They do not otherwise differ from current residents with regard to age, gender, or race: the mean age of past residents is 46.3 years; present residents' mean age is 46.9 years.[6] Thirty-nine percent of all present residents are male, 61% are female. Thirty-five percent of past residents are male, while 64% are female.

Questionnaire items were developed with reference to the extant literature on social responses to technological hazards, and on the basis of background ethnographic interviews conducted by the author. Questionnaire items were pretested and when necessary rewritten for simplicity and ease of administration. The instrument included word-association tasks, affective ratings, reported behaviors, and opinions about remediation procedures. The questionnaire was read aloud to each interviewee and answers were recorded by the interviewer. Questionnaires were administered by nine African-American school teachers, all of whom were trained as interviewers. Many of the teachers had taught in the neighborhood but none of them lived there. After the questionnaires had been completed, approximately 15 follow-up interviews were conducted by the author. This last group of interviews was, again, open-ended.

The Stigmatization of Place: Reconfiguring Home and Environment

Community studies have documented the physical deterioration of contaminated places including the potential for infrastructural, social, and psychological upheaval that follows a disclosure of contamination (Edelstein 1988; Fitchen 1989; Erikson 1994). In Marshall, Georgia, multiple houses on each of the blocks closest to the plant were purchased by the company, torn down and/or encircled with chain-link fences. The *hazardous — keep out* signs that hang on the fencing inform residents that the fractured landscape they occupy is no longer, and perhaps never has been, safe. The soil on the plant-purchased lots remains too contaminated for habitation (the plant is not obligated to clean its purchased properties) which negates the potential for rebuilding the neighborhood's residential infrastructure. Neighborhood gardens, fruit trees, and farm animals (e.g. chickens and some goats) were removed from properties registering 30 ppm of arsenic or greater. Remaining residents see the fences and signs appearing where neighbors once lived and conclude that perhaps their properties are also unsafe; consequently, they cease to garden or trade locally produced fruits and vegetables. The overall inability for neighbors to maintain the quotidian behaviors that typify a comfortable domestic routine — to garden, permit children to play outside, complete yard work, visit neighbors, etcetera — represents a "collective trauma . . . a blow to the basic tissues of social life" that "impairs [any] prevailing sense of communality" (Erikson 1994, 233).

Residents also portray their immediate neighborhood as a "ghost town" of vacant lots and the aesthetic quality of the neighborhood as "concentration-camp like."[7] Houses are uneasily occupied, devoid of the intrinsic merits of home as a safe haven from the predicaments of public life. Betty Fields thus prefers to stay late at her job rather than face "going home to my *arsenic house* [where] I can't breathe." Her neighbor, Helene Johnson, finds only that her home "feels like a trap. . . like there's something hiding in the shadows waiting to jump." Many feel there is little they can do to protect themselves, a defenselessness articulated by Leroy Roberts as the feeling of "living in a place I'm afraid of, like it's [the contamination] coming in the cracks." Long-term neighbors regard these insults as historically rooted, a continuation of decades of plant encroachment into residential territory given the meteoric rise of the plant's productive capacity after the second World War.[8]

Individual expressions of "feeling trapped" or feeling "unable to breathe" should not be mistaken as idiosyncratic, indicative only of exemplars of severe impact. Word-association tasks, credited for revealing the content and thought

pattern of the respondents' minds without the complication or burden of discursive language (Szalay and Deese 1978), confirmed that both past and current residents define their environs in extremely negative terms. Respondents were asked to provide image or word associations for context specific prompts (fences, soil, dust, etc.), and subsequently rated their responses using a five-point affective rating scale: very bad (-2); bad (-1); neutral (0); good (+1); or very good (+2). The rating scores for each stimuli and a sampling of the consistently immoderate image content are displayed in Figure 1 below.

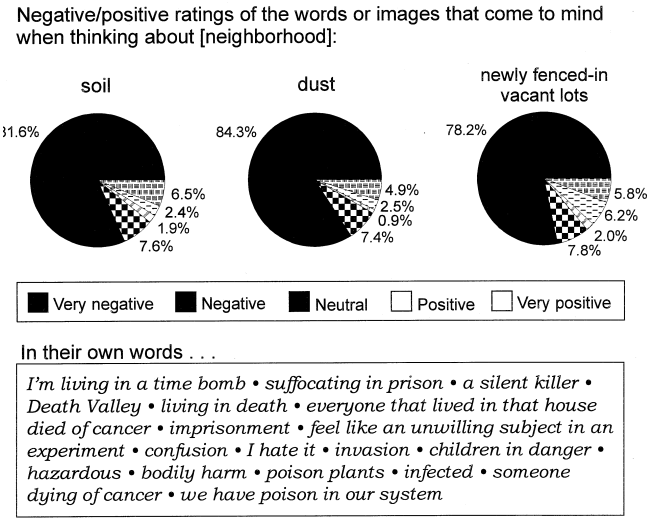

Figure 1. Image/word associations and affect ratings (N = 206).

Seventy-eight percent of respondents rated their associations with the fenced-in areas in the neighborhood as highly negative ("very bad" or "-2" on the affect scale), whereas 81.6% and 84.3% of respondents, respectively, rated images associated with "soil" and "dust" as highly negative. Across all three stimuli, no single item generated a combined very positive, positive, and neutral response in excess of 14.0%. The apparent absence of neutral responses, which usually include synonyms and visual or sensory descriptors (e.g., dimension, color, sound, etc.), is distinctly revealing in that responses of this kind would be expected in circumstances perceived as benign or generally less threatening. The logical coherence to these affective scores is that the stimuli closest to home and thus closest to one's physical body (dust inside a house and soil immediately outside a house) are rated more negatively than are more distant stimuli (such as fenced-in lots).

Avoidance Behaviors

The decayed sense of safety within and around the homes is confirmed, equally, by parallel efforts of residents to avoid activities that normally comprise the acts of everyday life (Edelstein 1988). Current residents were asked whether they found themselves unable to do some activities given concern about the plant. If the response was affirmative, respondents were then asked if the avoided behaviors were missed a great deal, missed slightly, or not at all missed ("I don't miss it," "I miss it slightly," or "I miss it a great deal"). The majority of residents reported changes in their domestic routines. Residents easily distinguished restrictions that were extremely bothersome from those that were less so. Table 1 demonstrates activity avoidance attributed to the plant, and reports frequency distributions for those who missed the avoided activity "a great deal."

Table 1. Activity Restrictions: Residents

Percentage who do an activity "less often because of the plant," who miss the activity "a great deal," and the percent of total respondents who agreed to both (n = 114).

Activity	"I do it less often because of the plant"	"I miss it a great deal"	Percent of total sample[a]
Opening the windows in your house on a breezy day	79.8%	84.6%	67.5%
Sitting in your yard on a nice day	74.6%	84.7%	63.2%
Yard work	66.7%	64.5%	43.0%
Flower gardening	65.8%	70.7%	46.5%
Allowing children in your care to play in your yard	64.0%	72.6%	46.5%
Investing money or time to improve the quality of your house or fix something that is broken	63.2%	66.7%	42.1%
Allowing children in your care to play in a friend's or relative's yard that is near the plant	62.3%	71.8%	44.7%
Walking near the open ditch	54.4%	29.0%	15.8%
Visiting someone whose house or yard is said to have high arsenic levels	50.9%	51.7%	26.3%
Going up in the attic of your house	47.4%	53.7%	25.4%
Going under the house to fix something	44.7%	47.1%	21.1%
Allowing children in your care to play in uncovered ditches	43.0%	34.7%	14.9%

[a] Percentage of total sample who do the activity less often because of the plant and reported that they "miss it a great deal."

Residents were much more likely to avoid ordinary activities like opening a window on a breezy day (79.8%) or

sitting in the yard on a nice day (74.6%) than less frequent or necessary activities such as going under the house to repair something (44.7%), going up into the attic (47.4%), or allowing children to play in exposed ditches at the edge of the neighborhood (43.0%). When asked which activities respondents "miss a great deal," a similar pattern emerges. Commonplace activities generally associated with a pleasant sense of domestic environment were those most heartily missed. These included opening windows on a breezy day (84.6%), sitting in the yard on a nice day (74.6%), and allowing children to play in the yard (72.6%). Alternately, activities such as walking near the remaining, though distant, open ditches (29.0%), or allowing children to play in those ditches (34.7%) were "missed a lot" by a minority of respondents.

Embodied Stigma

Alterations in household routines signify the inclination of individuals to protect their physical bodies. Worry about bodily harm is often regarded as the defining feature of toxic emergencies: the fear is that contaminants have been absorbed into one's tissues and perhaps the genetic material of survivors (Erikson 1990, 121; see also Edelstein 1988; Oliver-Smith 1996; Kroll-Smith and Floyd 1997). In Marshall, Georgia, residents were forced to interpret these fears while haunted by the image of remediation workers protected from exposure to contaminants, an invading army of cleanup contractors and soil-testing technicians, each of whom benefited from the prophylactic suits used in industrial hygiene. This other-worldly attire seals face, head, body, feet, and hands from external contaminants. Workers also were protected and physically distanced from soil and dust through the use of immense backhoes and hep-o-vacs (backhoes assist the removal of contaminated topsoil, while hep-o-vacs function as powerful dust-extracting vacuum cleaners). Such acts of caution are understandable under the circumstances, yet the symbolic weight of these protected workers lingered in neighborhood residents' discourse, and helped articulate poignant misgivings. Visually compelling recollections of heavy machinery and "suited knights" seemed to say that the residents ought to have been safeguarded these many years, that the residents' bodies were already "poisoned" rendering protection futile, or, more cynically, that the residents were a socially disposable population, unworthy of protection in the first place.

Congruent with this symbolically charged backdrop of protected workers versus vulnerable residents, the interview notes reveal the markings of residents' physical selves. Residents learned to regard the long-familiar patches of atypical skin color and density on different parts of their bodies as evidence that contaminants were systemically present. Hyperpigmentation, hypopigmentation, and hyperkeratoses manifest as epidermal discolorations and lesions, constitute the primary clinical sign of chronic inorganic arsenic exposure (ATSDR 1990). ATSDR physicians and clinicians examined the health records of 274 current and past residents for signs of exposure. A subset (n = 75) of this group showed evidence of simultaneous occurrence of hyperkeratosis, hyperpigmentation, and hypopigmentation. Though clinically associated with exposure, these signs are not expertly defined as health risks unless they progress to cancer (Kess 1996, 3-6). Those diagnosed with skin cancers as well as those merely suspicious about the implications of their symptoms treated their skin discolorations as constant reminders that their physical well-being was potentially amiss. During interviews, individuals would draw attention to their "spots," point them out, or absentmindedly press upon them as though they were a kind of worry bead, a point of reference that redirected thoughts to the consequences of contamination.

Toxicologists speak of "body burdens," the sum total or physical history of exposures through all routes of entry (inhalation, ingestion, skin absorption) and through all sources (food, air, water, office building, etc.) (Steingraber 1997, 236). Denizens of the plant neighborhood refer instead to the burden of worry, worry about health, childhood exposures, and especially the heightened expectation of pending disease. Eighty-eight percent and 83% of all respondents defined themselves, respectively, as "worrying a lot" about "birth defects in children" and "the impact of the plant on my health." Every child with asthma and every virus is thought to be symptomatic of something larger, more foreboding: "Am I going to come down with something in my throat and die?" Individual bodies have become physically inscribed (i.e., marked) in the eyes of the owners; atypical pigmentation, perceived risks, and socially mediated fears about health have, together, gotten under the collective skin of neighborhood residents (Erikson 1994). Residents thus come to regard their lives as "one long lethal injection" or "feel that they are something that will slowly kill" them. These observations are corroborated by the vast majority of respondents reporting a deep sense of dread, "a quality well-documented as central to lay characterizations of toxins" (Slovic 1987) as well as persistent thoughts about the inhalation and ingestion of contaminants. A full 94.2% of past and current neighborhood residents agreed that thinking about the contaminants left them with "a creepy, frightened feeling," while 90% of current residents agreed with the statement: "When I'm in my house, I often wonder if I'm breathing in something poisonous."

Older residents carry the additional burden of prior wounds and the unexplained deaths of loved ones. Further, the opportunity to reconsider old griefs in light of recent

knowledge about contamination is, for many, unavoidable. Mary Aimes is in her late 60s. Her first child, a daughter, lived only 20 days — the result of a heart defect. Her disabled adult son died of asphyxiation in 1982, the result of a severe allergic reaction to "something" in the air. Mary's "bad nerves" began after the release of information about contamination and the concurrent threat that she might be moved from her home.

> *You don't worry about it if you don't know, but once you know it makes you remember everything that happened before. . . . All these things I remember. I have nightmares about them now. Like when [as a child and teenager in the late 1940s and 1950s] men from the plant would knock on doors in the middle of the night and tell me and my family to leave the house immediately. There was a leak at the plant. They had giant gas masks, like creatures from outer space. They would tell us we had to run, and my mother would try to get all of us up; I was the youngest. When they told me I had to move [due to remediation], I woke up one night in the middle of the night, like as if my mother was trying to get me out of the house. I don't know [Mary stops herself] it's almost more than a body can stand after a certain age.*

Mary's psychological and bodily peace is greatly disturbed by this recurrent nightmare and anxious ruminations about the premature deaths of both her children. Her fixation on the "middle of the night" memory has a particular capacity to crystallize and recreate a pivotal moment of horror for her, and is indicative of the "intrusive" states that characterize trauma (Herman 1997, 38).

Extreme distress of this kind is unusual though most residents speak at length about their diseased life histories, and typically enumerate kinship ties and deaths-by-cancers in the same breath ("He was my uncle, he died of bladder cancer, and my sister died last year from breast cancer," and so on). The reporting of physiological expressions of stress was equally common. A majority of current and past residents reported suffering from "nausea," "feelings of hopelessness," the "feeling of being trapped," "nervous/shaky feelings," and the feeling of being "tense or keyed up." Over 60% of the subset of respondents who reported being "bothered a lot" by these symptoms attributed their symptoms to the plant. This did not, however, preclude a credible tendency to attribute other symptoms to noncontaminant causes. Only a minority of respondents reporting symptoms of lower back pain, crying easily, or temper outbursts subsequently attributed their sufferings to the plant (Table 2, column 2). Similarly, only one symptom, low energy, was reported by a slim majority of all respondents (50.5%) both as "bothering them a lot" and as "caused by the plant" (Table 2, column 3). Table 2 depicts both the distribution of symptoms and the subset of respondents who thereafter attributed their symptoms to the plant.

Table 2. Stress-Related Symptoms (N = 206)

Symptom	Symptom "bothers me a lot"[a]	Believe plant is the cause[b]	Percent of total sample[c]
Low energy	85.4%	59.1%	50.5%
Lower back pain	68.4%	41.8%	28.6%
Headaches	68.4%	60.3%	41.3%
Body weakness	65.5%	65.2%	42.7%
Memory trouble	64.1%	50.0%	32.0%
Nervous/shaky feeling	63.6%	62.6%	39.8%
Sore muscles	61.7%	44.9%	27.7%
Trouble getting breath	60.2%	73.4%	44.2%
Tense/keyed up	59.7%	60.2%	35.0%
Heart/chest pains	59.7%	58.5%	35.9%
Heaviness in arms/legs	57.8%	54.6%	31.6%
Depression	53.4%	62.7%	33.5%
Easily annoyed/irritated	52.4%	52.8%	27.7%
Nausea/upset stomach	51.9%	70.1%	36.4%
Trouble concentrating	51.5%	49.1%	25.2%
Heart pounding/racing	51.5%	62.3%	32.0%
Hopelessness	51.0%	74.3%	37.9%
Feeling trapped	49.0%	77.2%	37.9%
Confusion	48.5%	51.0%	24.8%
Faintness/dizziness	48.5%	58.0%	28.2%
Fear	44.2%	64.8%	28.6%
Others do not understand you	43.7%	35.6%	15.5%
Easily hurt feelings	42.7%	38.6%	16.5%
Feeling lonely/alone	41.7%	44.2%	18.4%
Avoidance due to fear	40.8%	67.9%	27.7%
Blaming yourself	37.4%	40.3%	15.0%
Crying easily	33.5%	40.6%	13.6%
Temper outbursts	26.2%	46.3%	12.1%
Critical of others	25.7%	47.2%	12.1%
Poor appetite	22.8%	55.3%	12.6%

[a] Percentage who answered "yes" to being bothered a lot by the symptom or problem.

[b] Of those who are bothered "a lot," percentage who believe the plant is the cause.

[c] Percent of total sample who are bothered "a lot" and believe the plant is the cause.

Sociopolitical Stigma

Stigma is a discrediting judgment that in turn evokes a response from those stigmatized (Goffman 1963; Jones, Farina, Hastorf, Markus, Miller, Scott and French 1984; Gregory, Flynn and Slovic 1995). In contaminated communities the complex interplay between technological and social stigmas constructs a tangled mass of attributional actions and reactions. That is, we can speak of those "constructing" the stigma versus those managing it, we can speak of the racial

stigmatization that is likely at play in minority communities versus the technologically derived stigma that residents simultaneously project and suffer because of the plant. Some of this complexity is clarified by acknowledging two basic points. The first is that the occupant of a stigmatized environment can suffer damage simply because of association with that place. This "suggests that beyond a direct fear of a stigmatizing condition in its own right, there is a concern that any association with the marked setting may serve to mark oneself" (Edelstein 1987). To this end, residents consciously worry that they are viewed by the outside world as socially contaminated, contagious and therefore unfit as members of the larger human community. Consider by way of example Marvia Lou Smith's characterization of herself as chaffing under media's occasionally ghoulish eye.

> *People come through here now and you see them outside with TV cameras taking pictures and all that. I reckon they said: well what kind of neighborhood is this that has fences and barbed wire. That must be a bad neighborhood. They bad folks that got fences up around here.*

Marvia faults both the physical consequences of remediation (fencing, barbed wire) and the media's amplification of those effects (see Kasperson 1992) for the negative light they cast upon herself and her community.

Troubling reflections of this kind co-exist with a second basic point — that contamination events often involve the stigmatization of the already stigmatized. Exposure to environmental hazards is not random but rather selective of socially and economically vulnerable populations. Risks are not distributed equally across social groups, there is a greater-than-average likelihood that the victims of hazardous technologies will be people of color and/or those occupying the economic margins of society (Bullard 1990; Johnston 1997). At the same time, those living in environmentally degraded contexts are often subject to psychosocial debasement and dehumanizing innuendo (lazy, ignorant, backward) that destroys self-esteem and the motivation of individuals to control their destiny (Appell quoted in Johnston 1994, 10).

In Marshall, this fusion of social stigma and environmental risk engulfs local disputes about the consequences of exposure. To this end all talk about "the plant" is somehow also talk about race. Arguments about the nature of legitimate evidence for injury, the appropriateness of different compensatory actions, or the logic of soil testing were invariably articulated as "concerns that would have been addressed" or events that "never would have happened in a White neighborhood." These articulations closely follow Capek's (1993) environmental justice frame, a set of dimensions common to the "claims-making" interactions that characterize most antitoxic movements. The civil rights movement is the shaping historical event with regard to these claims. Community members define their struggle as one in which political access; fair treatment from elected officials, agency (EPA, ATSDR, etc.) representatives, and legal institutions; access to information; and the right to protection and compensation are paramount (Capek 1993, 7-9).

In Marshall, most residents of the contaminated neighborhood believed the plant and the EPA ignored pertinent local input that might have ensured a mutually agreeable plan for the testing of soils and thus cleanup. EPA engineers posited a linear model of contaminant dissemination; properties immediately adjacent to the facility were tested as were those radiating outward from the source. When a safe property was encountered, testing would extend one or two houses further and then cease. It was assumed that all further properties were safe. Locals opposed this model by insisting that wind patterns, the ditch's history of flooding into some properties and not others, the plant's trucking routes through the neighborhood, and the historical tendency for employees to carry contaminants into their homes via soiled work clothing had each contributed to an erratic dispersal of contaminants. Widespread discontent of this kind was expressed by survey respondents: 71.8% disagreed with the contention that "EPA experts considered all the important ways in which chemicals traveled from the plant into the neighborhood," while 74.8% believed that the EPA did a poor job of "testing for contaminants in the neighborhood." The dismissal of local concerns was eventually tempered by the hiring (on behalf of residents) of outside experts who confirmed a more extensive pattern of contaminant dissemination; the EPA subsequently verified these findings with further testing by their own technical staff.

Racist motives were also attributed to the EPA's procrastination regarding the distribution of knowledge about contaminants. The time lag between the 1990 Superfund listing and the 1993 official proclamation of exposure (a fact noted earlier in this article) was widely interpreted as an act dismissing Marshall's African American community as marginal and thereby unworthy of urgent attention. Further, African-American residents cite a late 1980s exodus of White residents from the plant neighborhood's periphery as evidence that knowledge of contamination was divulged well in advance to White residents. The suspicion is that White residents knew about the contamination early on and thus sold damaged residential properties at "good prices" to unsuspecting African-Americans.

Representatives of Marshall's White community deny the persistent accusations of racism, and instead accuse (African-American) plant-neighborhood residents of acting against the plant for "easy" economic gain via the several pending litigation efforts. Residents of the plant neighbor-

hood are also censured by more affluent locals (White and some African-American) for denigrating the town's reputation and its commercial prospects through exaggerated and false claims of plant-derived health impacts. Other White residents are not critical per se, but fear the repercussion of voicing support for those in the plant neighborhood and fear being socially isolated because of perceived disloyalty toward their White peers (including the plant's founding family) or for being "too close" to the town's poorest and racially stigmatized residents.[9]

Local African-Americans' pointed critiques of testing procedures and the racist undertones of interactions between some local citizens and responsible parties can be read as healthy, pro-active signs of resistance to economic and racial stigmatization (Schwab 1994; Szasz 1994). Yet the impressions from (my own) field observations confirm something different. Neighborhood residents often appeared to be overwhelmed by a pervasive mood of hopelessness, a few resilient activist voices aside. The neighborhood's emotional landscape was marred by despair and a resignation not unlike the psychological numbing described in Lifton's (1967) work on radiation poisoning. Similarly, Jones et al. (1984, 4) defined the "essence of the stigmatizing process" as producing "devastating consequences for emotions, thought and behavior." The argument is that marked individuals are often unsuccessful at maintaining positive self-regard when the "evaluations elicited from other people [are] disproportionately negative" (Jones et al. 1984, 111). Other scholars of power and subordination have defined this defeated disposition as a "quiescence" of political participation despite a relatively open political system (Scott 1990, 71).

In order to obtain some indication of the injuries of racism as they apply to political will, Srole's (1965) political alienation questions were modified to fit the Georgia context. The responses produced suggestive results. Compare, especially, responses of current residents with those offered by prior residents. These demographically similar groups differ from one another to the extent that current residents have lived through the full range of consequences of exposure — the parade of suited hygiene experts, exacerbated racial tensions, battles for voice in decisions about remediation, and, most dramatically, the resonating presence of a denuded landscape signified as hazardous — while prior residents have faced these events from a more removed and thus arguably protected position.

Both current residents and prior residents demonstrate an impaired sense of political efficacy. This impaired political efficacy is more prominent among current residents than prior residents on each of four questions, though only one of these differences is statistically significant at greater than .05. Figure 2 demonstrates that current residents are more likely

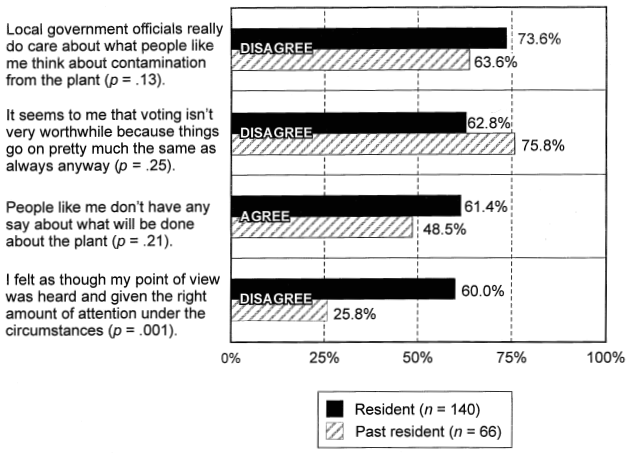

Figure 2. Expressions of political efficacy.

(by 10.0%) than prior residents to disagree that *local officials really do care about what I think*; less likely (by 12.9%) to believe that *people like me have a say about what will be done about the plant*; and much more likely to disagree with the suggestion that their *point of view was heard and attended to* (by 34.2%). Both respondent groups disagreed with the contention that voting was no longer "worthwhile," though prior residents were more supportive of voting (by a margin of 13%) than were current residents. The combined findings capture something of the flat affect about political efficacy expressed by both groups. The between-group differences suggest, however, that current residents share a greater sense of defeat with regard to political processes than do prior residents. Given that the two groups are demographically similar, save for current residents' greater exposure to plant and clean-up specific events, it is likely that remediation procedures have contributed to the loss of democratic control expressed by current residents.

Discussion

This paper began with the contention that the personal trauma of toxic exposure merits a central position in theorizing about technological, product or geographic stigma. An expanded theory of stigma requires an understanding that extends well beyond the measure of market losses or adverse behavior by consumers. Accordingly, we considered the ravaging of home, neighborhood, and individual well-being that characterize Marshall's contamination events. An overwhelming majority of residents adjacent to the chemical plant think only negatively about soil, home, and neighborhood. Individuals change their daily routines, close windows, rest uneasily both inside and outside their homes, and abhor the "concentration camp" aesthetic that has taken over their lives.

Implicit and explicit definitions of home as a place that promises safety for self and family, as an affective anchor in an otherwise chaotic world (Fitchen 1989), are supplanted by the fear of dust in the attic and the feeling that "something will slowly kill me." The fear among Marshall's plant-adjacent residents is a state of mind that "gathers force slowly and insidiously, creeping around one's defenses rather than smashing through them" (Erikson 1994, 21). This insidious "creeping" quality is evident in the psychological recoil that follows the sight of workers in hygiene suits and in individuals' graphic articulations of invasion (e.g., "My life feels like one long lethal injection").

Both body and place assist the reflective processes fundamental to human thought. The body is the means by which we experience and apprehend the world (Merleau-Ponty 1962), while place (as in home, neighborhood, environment, etc.) is a basis for direction and self-reflection, for who one is in the larger social world (Basso 1996). In Marshall, Georgia, the physical experience of a contaminated neighborhood and body intersect with disturbing reflections about the self. In this sense, the hazard signs, the emergence of vacant lots, and browning of the neighborhood can be understood as discrete injuries and as vehicles that repeatedly summon, indeed trap residents, in a vacuum of negative reflections. Dramatic changes in the landscape become insistent reminders of the presence of contaminants, forcing those who live there to cognitively register and re-register the possibility of "poison in [their] systems."

These reflections interact with larger sociopolitical realities. In the contaminated neighborhood studied here, worry about one's health or the safety of one's home merged with racial discrimination from some sectors of the town's White community, with anguished musings about denigrating the portrait of one's neighborhood and its residents on television, with implications about the "worthiness" of protecting remediation workers but not residents, and with experts' rejection of local complaints about remediation or the testing of soil. This combination of affronts encourages resignation among residents who define themselves as *not* cared for, listened to, or able to have a say in what will be done about the plant.

Ultimately, the Marshall, Georgia, experience can enhance our understanding of the contamination experience and of stigmas. Much of what is documented here refers to the contamination experience, that is the physical, psychological, and social consequences of exposure. These are direct reactions to hazardous environmental stimuli. Stigmatizing influences consist instead of signals that exacerbate the experience of contamination. The origin of stigmatizing impacts is in part media-fueled, as suggested by Kasperson, Renn, Slovic, Brown, Emel, Goble, Kasperson and Ratick (1988), and as evidenced by one woman's response to the presence of camera crews in her neighborhood. More importantly, the Marshall, Georgia, context demonstrates unremittingly that public agency (EPA, ATSDR) efforts to remedy hazards often contribute to the experience of stigmas locally. "Remedies" for protecting exposed communities (e.g., the stripping of vegetation, the removal of contaminated properties, the invasion of "suited knights," and/or the relabelling of pigmentation patterns as exposure symptoms) can foster the very fears they ought ideally to alleviate.

Finally, in this context one must come to some understanding of the combination of racial and technological stigmatization. We know from Goffman's (1963) early work that some visible minorities are fully cognizant of and need to actively manage their "spoiled" identities.[10] In minority communities faced with the ramifications of extant hazards, pre-existing experiences of racial stigmatization can constitute a dominant lens through which the new experience of contamination and technological stigma passes. Technological and social stigmas can thus form an ugly loop, where each follows and so intensifies the impact of the other. A more comprehensive, interactive, and socially astute model of technological stigma would acknowledge this interplay and thereby seek to define the links and relationships between social stigmas, technological stigmas and the local experience of contamination.

Endnotes

1. Phone: 541-485-2400 or 604-215-2650 e-mail: *satterfd@interchange.ubc.ca*
2. All person, place, and company names cited herein have been altered to respect the privacy of those involved.
3. A small White population lived on the periphery of the neighborhood until the late 1980's. As well, middle-class Whites and African-Americans work and live in the proximate areas across the railroad tracks. It is probable that both groups were exposed to contaminants over the years. Few came forward in the period covered by this research, and almost all avoided litigation efforts (see methods section). Recently, a small handful of this group have become active in a remediation task force led by the mayor.
4. I use the term "speculation" here because the validity of claims of widespread environmental justice are still being examined (see, for example, Zimmerman 1993).
5. Relying on a litigant sample is admittedly problematic. On the one hand, the legal team did not exclude anyone who fit the above criteria and reported to me that only a very few (less than 10) of all traceable past and present residents declined participation. At the same time, current residents refer to an earlier period (see page 197) where more Whites resided on the periphery of the plant neighborhood. This seems to suggest that more Whites should have been included in the litigant list. Regardless, the litigants that make up the sample for this paper are drawn from the areas closest to the plant and include

those with properties designated by EPA and litigant experts as appropriate for contaminant testing. Further, this subset represents neighborhood areas that are currently, and were historically, primarily African-American.

6. Thirty-four percent of the resident group are between 18 and 39 years of age, 43.6% are between 40 and 59, and 20.7% are 60 or older (remaining ages unknown). Thirty-three percent of nonresidents are between 18 and 39 years of age, 39.4% are between 40 and 59, 19.7% are over 60 (remaining ages unknown).
7. All quoted unreferenced speech is derived from word-association tasks and open-ended interview notes.
8. In the United States, the post-1945 production of synthetic organic chemicals accelerated exponentially and by 1955 had captured 90% of the agricultural pesticide market. By the early 1990s there were 860 active pesticidal ingredients registered with the federal government (as compared to 32 ingredients in 1939). They are disbursed into more than 20,000 products (Steingraber 1997, 95).
9. Though I think the above paragraph accurately represents the tenor of racial tensions in the period covered by this paper, I do not mean to deny the presence of White residents working actively toward a better end for those in the plant neighborhood. Two recent events bode well: the replacement of a white EPA site coordinator regarded by many in the plant neighborhood as ill-disposed toward the community and the election of a new mayor who is White but is actively supported by residents of the plant neighborhood, has close ties to the community's African-American churches, and recognizes the continued "clean-up" as a first order priority.
10. I do not mean to ignore subsequent work which argues that minorities do not necessarily have "spoiled" identities or low self-images (e.g., Porter and Washington 1982). I simply mean to state that the evidence here suggests a strong interaction between experiences of discrimination and injustices specific to contamination events (Capek 1993 makes this point as well).

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Race, Residence and Environmental Concern: New Englanders and the White Mountain National Forest

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Abstract

This study explores the influence of racial identity and place of residence on environmental concern, as measured in terms of environmental values and ethics. A survey of representative samples of Massachusetts residents was conducted, and focused on the White Mountain National Forest. Objectives of the study were (1) to discover how environmental values and ethics vary across a diverse cross-section of New Englanders and (2) to explore the constructs of environmental values and environmental ethics as alternatives to environmental concern. Relatively few differences in environmental values and ethics were found between African American and white, and rural and urban subgroups. Environmental values and ethics were found to be potentially useful constructs that may measure a more fundamental relationship between people and the environment than environmental concern. Research and management implications of these findings are discussed.

Keywords: *race, residence, environmental concern, environmental values, environmental ethics, national forests*

Introduction

The White Mountain National Forest, often called "New England's national forest," provides an interesting setting in which to study the relationships between social and cultural diversity and environmental concern. Historical writings about this area reveal that the White Mountains have been many things to many people, from a source of prime timber to an inspiration for contemplative thought (Wallace 1980). Assuming the existence of such a wide range of values, this study inquires into both the specifics about, and the social distribution of, these values. As Nash (1982) has asserted, concern for the environment is often seen as a "full stomach" phenomenon . . . a luxury that can only be afforded by the wealthy and by those who do not have to extract their living from the land. This study inquires further into this assertion by measuring environmental values and ethics among rural and urban as well as black and white residents of New England, asking questions that are of significance not only to the issue of environmental concern, but also to our social and cultural diversity.

This study had two specific objectives. The first was to discover how environmental concern — measured in terms of environmental values and ethics — varies across a diverse cross-section of New Englanders. More specifically, we wished to explore the influence of racial identity and place of residence on environmental values and ethics. Studying the influence of social factors on environmental issues, most commonly operationalized through the construct of "environmental concern," is not a new phenomenon. Environmental sociologists have been studying the social bases of environmental concern for decades (e.g., Van Liere and Dunlap 1980; Jones and Dunlap 1992), and this body of literature may represent the most prominent work on the societal dimension of the environmental movement. In light of this body of work, therefore, the study's second, more methodological, objective was to explore the constructs of environmental values and environmental ethics as alternatives to environmental concern. Can alternative measures of people's feelings about nature shed additional light on the role of race and residence in environmental concern?

Studies of Race, Residence, and the Environment

Race and Environmental Concern

Early studies of black/white differences in environmental concern and related constructs have often found race to be a significant predictor of attitudes toward environmental issues (Taylor 1989). For example, using Dunlap and Van Liere's New Environmental Paradigm (1978), a survey in a metropolitan Virginia area found African-Americans to be less environmentally concerned than Anglo-Americans

(Caron and Sheppard 1995). This finding is somewhat complicated by an earlier study from this sociologist (Caron 1989), however, which indicated that while blacks and whites differ on types of environmental issues of concern, they do not significantly differ on their level of environmental concern.

Further evidence of possible racial differences in environmental concern comes from studies of African-American participation in outdoor recreation activities. Some researchers suggest that outdoor recreation participation may be a manifestation of concern with nature, and that studies of participation in outdoor recreation may be relevant to understanding the role of race in environmental concern. Such studies have generally found relatively low levels of participation by blacks in traditional, nature-based outdoor recreation activities (e.g. Washburne 1978; West 1989; Floyd, Shinew, McGuire and Noe 1994). These findings may suggest that African-Americans are less environmentally concerned than Anglo-Americans. One of the main themes in this body of literature involves explaining differences in black/white participation in outdoor recreation. Some studies attribute low participation by blacks to ethnicity, by which is meant cultural differences in value systems (Washburne 1978; Klobus-Edwards 1981). Other studies attribute the racial recreation gap primarily to what is known as the marginality theory, which posits that African-Americans have limited economic resources for such activity as a result of past and present discrimination (West 1989). Other studies suggest that both of these factors may be operative (Hutchison 1988; Floyd, Shinew, McGuire and Noe 1994).

While the prevailing notion regarding racial differences in environmental concern has been that African-Americans may be generally less concerned about the environment than are Anglo-Americans (see Taylor 1989 for a review), more recent evidence suggests that may not be the case. In a study based on National Opinion Research Center General Social Survey data and an analysis of related research, Jones and Carter (1994) suggest that the idea that blacks are less concerned about environmental problems than are whites may be a common misconception. They argue that while blacks may prioritize environmental issues differently among other social concerns than do whites, this prioritization should not be interpreted as a lack of interest in environmental issues by blacks, and that differences in black/white environmental concern may be more myth than reality (Jones 1998). Additionally, Mohai (1990) found black concern for the environment to be nearly identical to that of whites based on national survey data. Parker and McDonough (1999) further question the racial gap in environmental concern, finding African-Americans and European-Americans to both show significant concern for the environment.

Some race and environmental concern research focuses on other racial and ethnic groups through the outdoor recreation literature; most of this literature concerns Hispanic recreation patterns. Studies have suggested that ethnicity and degree of acculturation both play a role in Hispanic recreation patterns (Baas, Ewert and Chavez 1993; Carr and Williams 1993; Caro and Ewert 1995). For example, most groups of Hispanic-Americans in a 1993 California study preferred what may be interpreted as family-oriented recreation activities such as picnicking, while Anglo ethnic groups preferred outdoor recreation activities that may be interpreted as more directly focused on the natural environment, such as hiking or walking (Baas, Ewert and Chavez 1993).

Residence and Environmental Concern

Rural/urban differences in environmental concern have been the subject of substantial inquiry in recent years. Although findings on the relationship of rural/urban residence to environmental concern have been somewhat mixed, they have generally concluded that urban residents are more concerned about the quality of their environment than are rural residents (e.g., Christenson 1978; Tremblay and Dunlap 1978; Van Liere and Dunlap 1980; Lowe and Pinhey 1982; Rickson and Stabler 1985). For example, Christenson (1978) found rural/urban residence significant in explaining variance in support for land use planning, and found rural residents to be less supportive of such measures than urban residents. Tremblay and Dunlap (1978) reported similar findings in their study of concern about pollution, but also concluded that rural/urban differences were most pronounced when the environmental issue studied was of local, rather than statewide or national concern.

Additionally, in Van Liere and Dunlap's review of environmental concern literature (1980), urban residence was found to be positively correlated with environmental concern. The authors caution, however, that the strength of relationship may depend on the measure of concern used. Lowe and Pinhey (1982) examined General Social Survey data to explain low levels of environmental support by rural residents and concluded that area of socialization, rather than area of current residence, may be the important factor. Rickson and Stabler (1985) found urban residents to be more concerned than rural residents about the issue of non-point agricultural pollution, although they attributed the attitudes of rural residents more to residential self-interest than to rural resistance to environmental management. Finally, Buttel and Flinn (1978) drew a methodological distinction between environmental awareness and support for environmental reform, and found urban residents to be more aware of environmental problems than rural residents. While this study found residence to be a predictor of awareness, it also found residence

to be only a weak predictor of attitudes toward environmental reform.

Other studies have questioned such rural-urban differences in environmental concern. Recent work by Jones, Fly and Cordell (1999) indicates no significant differences between urban and rural residents of the Southern Appalachian region on issues related to the environment. Fortmann and Kusel (1990) also found no rural/urban difference in environmental concern. The definition of residence used in this study, however, casts doubt on its relevance to the current study involving rural/urban residence; Fortmann and Kusel defined urban in this study as residents in a rural area who had recently migrated from a city. It could be argued, therefore, that the study actually measured environmental concern *within* a rural population. Freudenburg (1991) also challenges rural-urban differences finding that farmers actually have the highest levels of environmental concern, as compared to urban and other rural residents. Freudenburg's study, however, defines rural residence in terms of occupational dependence on the land; thus, the results cannot easily be applied to rural areas in general, as some rural areas do not depend on such industries as agriculture or mining.

Environmental Values and Ethics: Alternative Constructs of Environmental Concern

Reexamining some of the above studies with a more methodological focus may help clarify the conceptual construct of environmental concern. Subsequently, by defining and explaining alternative constructs — environmental values and ethics — appropriate uses for alternative measures of environmental concern may begin to become clearer: environmental concern and environmental values and ethics illuminate different facets of urban and rural or black and white interaction with the environment.

The majority of residence and environmental concern studies are focused on environmental advocacy or contemporary environmental issues. Tremblay and Dunlap (1978), for example, asked respondents' level of concern with various types of pollution. Fortmann and Kusel's (1990) rural/urban environmental concern study measured environmentalism — specifically, forest environmentalism — with questions about "contentious environmental issues," such as clearcutting or herbicide spraying. Rickson and Stabler (1985) operationalized environmental concern on a similarly issue-based level, measuring the concept with questions on how important lake pollution was to the respondent, and if respondents would be willing to pay more in taxes for the elimination of pollution. Buttel and Flinn (1978) based their conclusions regarding residence and awareness of environmental problems on environmental issues, such as air and water pollution and local crowding.

Most studies examining the role of race in environmental concern also employ an issue-based measure. Caro and Ewert's (1995) study of Hispanic acculturation and environmental concern measured the concept with questions about the harmful nature of eleven environmental issues, ranging from wildfires to off-road vehicle use. To study the environmental concerns of blacks, Arp and Kenny (1996) used questions that addressed the use of pollution control measures and the siting of hazardous facilities. Likewise, Caron and Sheppard's (1995) examination of black-white differences in environmental concern operationalized concern in terms of Dunlap and Van Liere's (1978) NEP construct. The NEP scale represented an attempt to capture people's belief systems in regard to the environment by asking questions such as whether or not economic growth should be limited to protect environmental quality.

Before moving on to a look at environmental values and ethics constructs as alternatives to issue-based environmental concern, it should be noted that researchers have questioned the degree of internal consistency within the environmental concern construct itself. The concept of environmental concern has varied in its application in racial as well as residential studies. Several researchers have cautioned that this variance in indicators used may impact demographic/environmental concern relationships (Van Liere and Dunlap 1981; Jones and Carter 1994; Klineberg, McKeever and Rothenbach 1998). Environmental concern has been conceptualized and applied variously as support for spending on behalf of the environment, the perceived seriousness of environmental problems, and involvement in pro-environmental behaviors. Environmental concern thus appears to be a multidimensional concept, and study findings consequently must be interpreted in accordance with how environmental concern is conceptualized and measured.

The environmental concern construct, as seen through the examples from residence and race literature, typically measures people's degree of concern about various environmental issues, rather than their degree of concern about the environment in general, or, at an even more fundamental level, their type and degree of interest in nature. An environmental values construct measures interest in the environment at a more fundamental level, thus offering an alternative to the more issue-specific and activism-oriented environmental concern construct. As might be expected, human values have been the subject of considerable attention across a variety of academic disciplines (Rokeach 1973; Andrews and Waits 1980; Brown 1984; Bengston 1994). While several theoretical dimensions of value have been identified, this study focuses on preference-based held values. Held values have been defined as "an enduring conception of the preferable which influences choice and action" (Brown 1984, 232).

Applied to forests, Bengston (1994, 520) defines a held value more specifically as "an enduring concept of the good related to forest and forest ecosystems." The preference-based component of this concept of value signifies that value is assigned through human preference as opposed to social obligation (e.g., societal norms that suggest what people should value) or physical/biological function (e.g., the ecological dependence of tree growth on soil nutrients). Recent commentary suggests that preference-based held values are the appropriate focus of forest values research (Bengston 1994; Hetherington Daniel and Brown 1994). As used in this study, values are specific notions that define "an enduring concept of the good" as applied to a specific national forest.

Environmental ethics offer another construct of environmental concern. Like values, ethics have received considerable academic attention, particularly in the discipline of philosophy. Ethics can be defined as the "study or discipline which concerns itself with judgments of approval and disapproval, judgments as to the rightness or wrongness, goodness or badness, virtue or vice, desirability or wisdom of actions, disposition, ends, objects, or states of affairs" (Runes 1983, 113). Environmental ethics deal more specifically with human conduct toward the natural environment. It is inevitable that humans interact with the natural environment. But what ideas govern or structure this interaction? What is the appropriate relationship between humans and the natural environment? For purposes of this study, environmental ethics are defined as the diversity of ideas that drive human relationships with the natural environment. Examples include stewardship of nature as a religious duty and intrinsic rights of nature. As used in this study, environmental ethics are broader and more abstract constructs than values, as they apply to human/environment relationships generally rather than the values of national forests specifically.

Review of the above bodies of literature lead back to the study objectives posed at the beginning of this paper. Can alternative constructs to issue-based expressions of environmental concern — specifically, environmental values and ethics — be used to measure human-nature relationships, and how do such measures of environmental concern vary across social strata, such as race and residence?

Study Methods

The principal research method was a mail-back survey that measured environmental values and ethics of respondents. The study was designed to maximize diversity of the study population according to the two principal study variables, black/white racial identity and urban/rural residence, and was completed in regard to the White Mountain National Forest (WMNF). Sampling was carried out in such a way that numbers of each subgroup — black, white, urban, and rural respondents — would be maximized, and data were analyzed for structural relationships between environmental values and ethics and each of these variables. Sampling procedures, measurement of study variables, and data analysis procedures are described in the following sections.

Sampling

Using telephone directories, two samples were drawn for the study: a stratified random sample of Massachusetts residents, and a second, separate sample of one of the original strata. Massachusetts was chosen because the study was part of a larger research project focused on the WMNF and residents of New England, and because Massachusetts has the most racially and residentially diverse population of the six New England states. For the first sample, 1500 addresses were chosen at random within three specific geographic strata of Massachusetts. These areas were chosen so as to best capture the state's racial and residential diversity. Based on 1990 census data, three zip code areas were found that were characterized by the following social structures: 1) a primarily African-American, urban area, 2) a primarily white, urban area, and 3) a primarily white rural area. A primarily African-American rural area does not exist in Massachusetts, and the sampling procedure was only able to produce three strata of respondent groups, rather than the four originally desired. Accordingly, 500 questionnaires were sent to randomly selected residential addresses in an 85% urban African-American zip code, 500 were sent to people in an 87% urban white zip code, and 500 were sent to addresses in a rural, predominantly white county. The mail survey followed a modified procedure recommended by Dillman (1979), whereby a first mailing of the questionnaire and cover letter was followed a week later by a postcard reminder, and a second mailing to non-respondents two weeks after the postcard reminders.

Out of the 1500 questionnaires mailed in the first sample, 216 were undeliverable due to invalid addresses and other reasons. Out of the 1284 delivered, 508 were completed and returned, yielding a response rate of 40%. Out of those 508, 30 questionnaires were unusable, leaving a sample size of 478. The response rate for the primarily African-American, urban area was especially low (22.9%) and yielded an insufficient sample size. Consequently, a second sample of 500 was drawn from this area. Of the 500 questionnaires sent in the second sample, 58 were undeliverable. Of the remaining 442, 46 were completed and returned, yielding a response rate of 10.4%. The low response rates in the primarily urban, African-American strata are discussed later in this paper. Final size of the total sample was 524. The study questionnaire asked respondents to self-identify their racial

and residential group, and the sample yielded the following racial and residential subgroups: 144 urban whites, 130 urban minorities, and 250 rural residents.

A telephone survey of nonrespondents was conducted to explore potential nonresponse bias. All non-respondents were called once, and persons who were reached by telephone and agreed to participate were administered a shortened version of the study questionnaire, which included eight measures of respondents' demographic and socio-economic characteristics, and five items from each of the batteries of questions measuring forest use values, forest temporal values, environmental ethics, and attitudes toward national forest management policy issues. The sample size of nonrespondents was 71. Differences between respondents and nonrespondents were tested using T-tests of differences between means. Overall, there appear to be few differences between respondents and nonrespondents, and the differences that did arise seem to be of minor substantive importance. For example, respondents tended to report their community of residence as "suburban" more often than did nonrespondents, and were older than nonrespondents. Additionally, nonrespondents tended to report lower levels of importance than did respondents for "moral/ethical" and "economic" values, as well as for "option" value.

Measurement of Variables

Two separate environmental value typologies included in the study questionnaire were used as dependent variables in the analysis. Both of these typologies represent preference-based held values as described earlier. The first values variable, described here as "forest use values," represents one dimension of environmental valuation. Eleven potential forest use values of the WMNF were defined through literature review, using sources from history, philosophy, and related environmental fields, including Rolston (1988, 1989), Kellert (1996), and Nash (1982). The values, and questionnaire items used to measure them, are shown in Table 1. Respondents were asked to indicate how important they felt each value was for the WMNF. The response scale ranged from 1, "not at all important," to 6, "extremely important."

Table 1. Bivariate Analysis of Racial and Residential Differences in Environmental Values.

		Racial Subgroups					**Residential Subgroups**				
Forest Use Values	***Statements***	***White Mean***	***Minority Mean***	***White SD***	***Minority SD***	***P Value for Difference***	***Urban Mean***	***Rural Mean***	***Urban SD***	***Rural SD***	***P Value for Difference***
Recreation	The opportunity to camp, hike, and participate in outdoor recreation activities in nature.	4.77	4.43	1.1	1.2	**.05**	4.77	4.66	1.1	1.1	NS
Ecological	The opportunity to protect nature in order to ensure human well-being and survival.	5.19	5.15	.92	1.1	NS	5.19	5.10	.92	1.0	NS
Historical	The opportunity to preserve and experience nature as an important part of American history.	5.08	4.85	.94	1.1	NS	5.08	4.80	.94	1.0	**.05**
Therapeutic	The opportunity to maintain or regain physical health and mental well-being through contact with nature.	4.84	4.82	1.1	1.2	NS	4.84	4.67	1.1	1.1	NS
Aesthetic	The opportunity to enjoy the beauty of nature.	5.22	5.05	.85	1.1	NS	5.22	5.14	.85	.87	NS
Spiritual	The opportunity to get closer to God or obtain other spiritual meaning through contact with nature.	4.29	4.49	1.6	1.6	NS	4.29	4.07	1.6	1.6	NS
Educational	The opportunity to learn more about nature.	5.11	5.13	.91	1.0	NS	5.11	5.03	.91	.84	NS
Intellectual	The opportunity to think creatively and be inspired by nature.	4.76	4.77	1.3	1.3	NS	4.76	4.34	1.3	1.3	**.01**
Moral/ ethical	The opportunity to exercise a moral and ethical obligation to respect and protect nature and other living things.	4.98	4.72	1.1	1.4	NS	4.98	4.77	1.1	1.2	NS
Economic	The opportunity to use nature for economic development such as logging, mining, and tourism.	2.85	2.95	1.4	1.6	NS	2.85	2.79	1.4	1.3	NS
Scientific	The opportunity for scientists to study nature and ecology.	5.06	4.77	1.0	1.1	NS	5.06	4.68	1.0	1.1	**.01**
Forest Temporal Values											
Use	The opportunity to use the forest *now*.	3.92	3.76	1.5	1.4	NS	3.92	4.04	1.5	1.3	NS
Future Use	The opportunity to use the forest in the *future*.	4.63	4.53	1.4	1.3	NS	4.63	4.72	1.4	1.2	NS
Others' Use	The opportunity to allow *others* to use the forest now.	4.20	4.57	1.2	5.4	NS	4.20	4.16	1.2	1.3	NS
Existence	The opportunity to enjoy *simply knowing* the forest exists.	4.89	4.58	1.2	1.5	NS	4.89	4.81	1.2	1.2	NS
Bequest	The opportunity to pass along the forest to *future generations.*	5.45	5.24	.83	1.0	NS	5.45	5.45	.83	.76	NS

The second environmental values variable used in this study, termed "forest temporal values," represents another dimension of valuation. The temporal dimension of values originates in environmental economics theory, and defines the concept based primarily on the time period in which value accrues, as opposed to what is being valued. Five temporal values of the environment were identified through review of environmental economics literature, including Mitchell and Carson (1989) and Diamond and Hausman (1993). The temporal values typology and the questionnaire items used to measure them are shown in Table 1. Respondents were asked to indicate how important they felt each value was for the WMNF. The response scale ranged from 1, "not at all important," to 6, "extremely important".

Environmental ethics concern more fundamental beliefs about the appropriate relationships between humans and the natural environment. The environmental ethics used in the questionnaire were defined through previous research (Valliere and Manning 1995; Manning and Valliere 1996; Manning, Valliere and Minteer 1996; Negra and Manning 1997; Minteer and Manning 1999, Manning, Valliere and Minteer 1999) and literature review. These ethics were measured using a series of 17 scale items. Each of the 17 potential environmental ethics was represented by a single scale item. Respondents were asked to indicate the extent to which they agreed or disagreed with each item using an eleven-point response scale, ranging from -5, "strong disagree," to +5, "strong agree". The seventeen environmental ethics, and the questionnaire items used to measure them, are shown in Table 2.

The independent variables used in the study were measured with demographic questionnaire items. Race was measured by two questions in the survey instrument. Respon-

Table 2. Bivariate Analysis of Racial and Residential Differences in Environmental Ethics.

		Racial Subgroups					Residential Subgroups				
Ethic	*Statements*	*White Mean*	*Minority Mean*	*White SD*	*Minority SD*	*P Value for Difference*	*Urban Mean*	*Rural Mean*	*Urban SD*	*Rural SD*	*P Value for Difference*
Storehouse	Nature is a storehouse of raw materials to be used by humans.	5.76	6.66	3.45	3.45	NS	5.76	5.47	4.00	3.04	NS
Liberalism/ Natural Rights	Nature has a moral right to exist.	10.15	9.70	7.03	2.46	NS	10.15	9.37	7.03	2.23	NS
Intellectual Dualism	The ability to think makes humans fundamentally different from and more important than the rest of nature.	5.80	6.71	3.58	3.82	NS	5.80	4.96	3.58	3.44	.05
Anthropocentric Humanitarianism	Cruelty toward animals makes people less human.	9.37	8.43	2.70	3.15	.05	9.37	9.03	2.70	2.77	.NS
Threat to Survival	Nature can be dangerous to human survival.	4.35	4.39	3.56	3.57	NS	4.35	4.73	3.56	3.45	NS
Efficiency	The supply of resources which nature provides humans for (for example, timber and minerals) is limited.	8.70	7.34	2.96	3.19	.01	8.70	9.15	2.96	2.37	NS
Animism/ Organicism	All living things, including humans, are part of an interconnected community.	9.85	9.66	1.87	2.35	NS	9.85	10.06	1.87	1.46	NS
Quality of Life	Nature adds to the nonmaterial quality of our lives (for example, outdoor recreation, natural beauty).	10.27	9.74	1.46	2.32	NS	10.27	10.12	1.46	1.63	NS
Mysticism	All living things are sacred.	9.35	8.85	2.54	3.01	NS	9.35	8.73	2.54	2.75	.05
Religious/ Spiritual Duty	It is our responsibility to take care of nature, as religion teaches us.	9.20	9.66	2.62	1.98	NS	9.20	8.67	2.62	2.63	NS
Future Generations	Nature is important because future generations will need it.	10.30	10.33	1.65	1.43	NS	10.30	10.04	1.65	1.57	NS
Spiritual Evil	Religion teaches us that nature can be a spiritual evil.	3.51	4.15	2.92	3.22	NS	3.51	3.86	2.92	2.67	NS
Ecological Survival	Human survival depends on nature and natural processes.	9.47	9.45	2.88	2.56	NS	9.47	9.67	2.23	1.88	NS
God's Creatures	Nature is God's creation.	9.22	10.20	2.90	1.76	.01	9.22	8.44	2.90	3.23	.05
Pantheism	All living things have a spirit.	8.31	7.57	2.88	3.65	NS	8.31	7.51	2.88	3.14	.05
Religious Dualism	Humans were created as different and more important than the rest of nature.	5.88	6.56	3.87	3.94	NS	5.88	4.74	3.87	3.48	.01
Humanitarianism	Animals should be free from needless pain and suffering caused by humans.	10.17	9.90	1.69	2.33	NS	10.17	9.53	1.69	2.30	.01

dents were asked, "Which of the following best describes you? Are you mainly 1) White, 2) African American, 3) Asian or Pacific Islander, 4) Native American, or 5) Other," and were also asked "Are you any of the following: Hispanic, Latino, or of Spanish origin?" Race was subsequently recoded from this scale into a dichotomous variable, with white respondents in one category and African American, Asian or Pacific Islander, Native American and other minority respondents in the second category. As African-American respondents comprised 72% of this latter category, and as statistical testing revealed no significant differences in responses between the African American, Asian or Pacific Islander, Native American, and Other categories, the terms "African American" and "minority" are used interchangeably in the rest of this paper.

Residence was measured by self-identification with an item asking respondents "Which of the following best describes the area in which you live? 1) Urban, 2) Suburban, or 3) Rural?" When respondents indicated suburban residence, they were subsequently recoded into a rural or urban category, according to the aforementioned sample stratification.

Analysis of Data

Prior to data analysis, weights were assigned to each case according to the rate at which that strata was sampled. The purpose of the weighting was to adjust for the fact that the urban, African-American strata was oversampled. Weights were computed by taking the rate at which each particular strata should have been sampled, based on the total sample and population sizes, and dividing it by the rate at which that strata actually was sampled. Thus, the weight for the urban African-American strata was less than one, while the weights for the other two strata were each greater than one; these weights were then assigned to each case in that strata, and were used in all analyses. Additionally, as the race and residence variables used in this study were necessarily intercorrelated, given the fact that all racial minorities in the sample were urban residents, analysis of racial differences was performed using only urban residents, and analysis of residential differences was performed using only white respondents.

Study Findings

Table 1 summarizes study findings regarding forest values, including mean scores for all subgroups as well as significant differences between subgroups. Urban and rural mean scores for all eleven forest use values and all five forest temporal values are shown here, as well as the standard deviations for those means. This information is also shown for the white and minority subgroups. The last column of information for each of the subgroup categories (residence and race) indicates the P value for racial and residential differences in those values.

These findings indicate that most potential forest use values of the WMNF were rated highly by all subgroups. For all subgroups, ten of the eleven forest use values received a mean importance rating of 4.0 ("moderately important") or higher on the 6-point scale. Scores for economic value averaged below 4.0 for all four subgroups. Forest temporal value scores for all subgroups averaged 4.0 ("moderately important") or higher on the 6-point scale for four of the five values. Mean scores for use value were below 4.0 for three of the four subgroups.[1]

Turning to the differences within the racial and residential subgroups, mean value scores showed more statistically significant differences across residential lines than across racial ones. T-tests of independent samples of white and minority subgroups showed significant difference at the .05 level for one of the sixteen forest values. Recreation value scores differed between white and minority respondents (white mean = 4.77, minority mean = 4.43). None of the other racial differences in forest use or temporal values were statistically significant. The remaining differences in average forest values scores were found across residential lines, with three values indicating statistically significant differences.[2] All three of these values were in the use values category. Historical/cultural value scores differed between urban and rural respondents (urban mean = 5.08, rural mean = 4.80). Intellectual value scores also differed between these subgroups (urban mean = 4.76, rural mean = 4.34). Finally, scientific value scores differed between the urban and rural subgroups (urban mean = 5.06, rural mean = 4.68). The latter two differences were significant at the .01 level.

Table 2 summarizes study findings regarding environmental ethics, including mean scores for all subgroups as well as significant differences between subgroups. These findings indicate that most potential environmental ethical positions were highly supported by respondents. Moreover, the patterns of support were similar across rural, urban, minority, and white respondent subgroups. The original scale, anchored at -5 and +5, was recoded into an eleven-point scale anchored at 1 and 11, with scores above six indicating agreement, and scores below six indicating disagreement. All four subgroups exhibited agreement with twelve of the seventeen environmental ethics included in the questionnaire. These ethics received mean agreement scores of seven or above from all four subgroups. Three of the ethics elicited responses in the "uncertain/no response" range. These included the religious dualism, intellectual dualism, and storehouse ethics. The remaining two ethics, threat to sur-

vival and spiritual evil, each received mean agreement scores in the disagreement range from all four subgroups.

Tests of significant differences between subgroups concerning these mean environmental ethics scores indicate a few areas of difference among the racial and residential subgroups in the sample. First, white respondents tended to rate two environmental ethics — anthropocentric humanitarianism and efficiency — as more important than did minority respondents. Minority respondents rated the "God's creatures" ethic as more important than did white respondents.

Second, significant differences between the residential subgroups were found on six of the seventeen environmental ethics. Urban residents rated all six of these ethics — intellectual dualism, religious dualism, mysticism, pantheism, God's creatures, and humanitarianism — higher than did rural residents. Of those, religious dualism and humanitarianism were significantly different at the .01 level.

Multiple regression analysis was performed for each of the 16 forest use and temporal value variables.[3] The purpose of this analysis was to test the model of race and residence as explanatory factors for individual values — for example, recreation value or existence value. As race and residence had a high potential for intercorrelation in this study (as minority respondents were necessarily urban in this population), regressions examining the race variable were only run using urban cases, and regressions examining the residence variable were only run using white cases, as explained earlier. Furthermore, in order to test the unique effect of both race and residence upon each value variable, the model for each individual regression equation also included control variables such as age, gender, and education, in addition to the race or residence variable; the individual forest use or temporal value item served as the dependent variable.

As shown in Table 3, urban/rural residence was statistically significant in four of the sixteen equations: residence was significant at the .01 level in explaining the variance in intellectual value (Beta = -.201), and scientific value (Beta = -.211) and at the .05 significance level in explaining the variance in ecological value (Beta = -.118) and historical/cultural value (Beta = -.125). Adjusted R^2 values for these four regression equations were low, ranging from .04 to .07. The negative direction of each of these regression coefficients indicates that, for each value, urban residents are more likely than rural residents to find these values of the WMNF important.

Race was not statistically significant in any of the sixteen regression equations (Table 3). Race regressions were run using the larger minority group and white respondents, as well as using only African American and white respondents. Results did not vary.

Multiple regression analysis was also conducted for environmental ethics, using environmental ethics statements as the dependent variable and race and residence separately (see above) as independent variables, with demographic variables included in all equations (Table 3). Race appeared as a statistically significant factor in four of the seventeen ethics equations. Race was significant at the .01 level in explaining the variance in the "God's creatures" ethic. Minority respondents were more likely than white respondents to agree with this ethic (Beta = .307). Race was also significant in explaining the variance in the "efficiency" ethic, with white respondents more likely than minority respondents to agree with the statement, "The supply of resources which nature provides humans (for example, timber and minerals) is limited" (Beta = -.246). The third ethic for which race was a significant explanatory factor was the "religious/spiritual duty" ethic. The direction of this coefficient (Beta = .193) indicates that minority respondents are more likely than white respondents to agree with this ethic. Finally, race was also significant in explaining the variance in the "storehouse" ethic. The direction of the coefficient in this equation (Beta = .187) indicates minority respondents are more likely than white respondents to agree with the statement, "nature is a storehouse of raw materials to be used by humans." The significance level for the last two ethics was .05.

Table 3. Multivariate Analysis of Racial and Residential Differences in Environmental Values and Ethics

	Beta: Race	**Beta: Residence**
Intellectual Value		-.201**
Scientific Value		-.211**
Ecological Value		-.118*
Historical/Cultural Value		-.125*
Storehouse Ethic	.187*	
Efficiency Ethic	-.246**	
Religious Duty Ethic	.193*	
God's Creatures Ethic	.307**	

* .05 significance level
**.01 significance level

Regression equations run with residence as the independent variable indicate rural/urban residence was not a statistically significant factor in explaining the variance in any of the seventeen environmental ethics.

Several control variables were significant in the regression equations. Of these variables — employment status, gender, age, ethnicity, education, and income — gender appeared the most frequently. Gender appeared as an explanatory factor in twelve of the thirty-two regressions run (sixteen regressions examining race, and sixteen examining residence). In each of these instances, women were more likely than men to find study values, important, including existence, bequest, and therapeutic values. Other interesting results with the control variables included income explaining

some of the variance in recreation value. In this instance, wealthier respondents were more likely than lower-income respondents to find the recreation value of the WMNF important. Furthermore, education explained some of the variance in ecological value, as those respondents with more education were more likely to find ecological value important.

Discussion

Findings from this study add to the growing body of literature on environmental concern, and how such concern is expressed across social strata, specifically race and residence. To some degree, study findings mirror much of the scientific literature in this area. That is, there is both commonality and divergence in environmental concern across racial and residential subgroups.

On one hand, we are impressed with the apparent extent of consensus about environmental values and ethics across study subgroups. Bivariate analyses found only one statistically significant difference between racial subgroups out of 16 forest values, and only 3 statistically significant differences between racial subgroups out of 17 environmental ethics. There were only 3 statistically significant differences between residential subgroups out of 16 forest values, and only 6 statistically significant differences between residential subgroups out of 17 environmental ethics. We believe that our measures of environmental concern — forest values and environmental ethics — are broader and more fundamental constructs of environmental concern than have traditionally been used, and that this may be why we found more consensus among respondents than some other studies.

On the other hand, the statistically significant differences between racial and residential subgroups suggest that there is a gap between racial and residential subgroups on some dimensions of environmental concern. For example, study findings of residential differences in forest values and environmental ethics indicate urban residents in the sample showed statistically higher support for historical/cultural, intellectual, and scientific values of the WMNF than did rural residents, as well as for six of the 17 ethics, including intellectual dualism, mysticism, and pantheism. These results are similar to findings from other studies, which conclude that urban residents are more likely than rural residents to value the environment in a more abstract, nonconsumptive sense (Kellert 1996). Historical/cultural importance, intellectual stimulation, and scientific study are all examples of such nonconsumptive values.

This study may differ from earlier studies in terms of the explanation it suggests for those differences in residential subgroups. As rural residents in this sample live in a Massachusetts county where the economy is generally not directly dependent upon the land, such as in logging or in agriculturally-based rural areas, the rural/urban difference in these forest values and environmental ethics is therefore logically not attributable to a rural dependence on the land.[4] This is contrary to earlier findings, such as those by Kellert (1996) and Rickson and Stabler (1985), which posit that a rural tendency toward consumptive valuation is likely a product of self-interest due to an extractive economic base. The explanation for lower rural support for nonconsumptive values and ethics in this case may more closely resemble that of Lowe and Pinhey (1992), who suggest that socialization may be more important than economic dependence.

Analytical findings elaborate on these descriptive findings. The regression equations, although they possess low explanatory power, indicate certain patterns in values among the subgroups. For example, residence is statistically related to four of the sixteen forest values in the study. The forest values for which residence was a factor — intellectual, scientific, historical/cultural, and ecological — all involved relatively abstract conceptions of value. Furthermore, the direction of the residential variable's influence was the same in all four cases: urban respondents were more likely than rural respondents to find these abstract values of the WMNF as relatively important. Analytical findings concerning environmental ethics produced no significant relationships, suggesting that the relationship that may exist between ethics and residence, as indicated by the descriptive findings, is not a strong enough one to explain any of the variation in those ethics.

An alternative explanation of the effect of residence on environmental values is that rural residents are more likely than urban residents to support consumptive environmental values. As discussed above in relation to the descriptive findings, this explanation has frequently appeared in the literature (see, e.g., Rickson and Stabler 1985; Kellert 1996). Our study findings do not tend to support such a rural residence-consumptive value connection, however, as descriptive analysis revealed no significant differences in rural/urban mean scores for what might be considered the more consumptive values and ethics, such as current or future use value, or the storehouse ethic. What analytical and descriptive findings did reveal, however, was higher urban support for abstract forest values such as intellectual and scientific value, and more abstract ethics like mysticism and pantheism. These findings suggest a subtle, but potentially important distinction between concluding that rural residents are more supportive of consumptive forest values and concluding instead that urban residents are more supportive of relatively abstract forest values.

Study findings on differences between racial subgroups tend to corroborate findings from the outdoor recreation par-

ticipation literature. Several studies have found that some minority groups, including African Americans, participate in traditional outdoor recreation activities at lower levels than do whites (e.g., Washburne 1978; West 1989; Floyd, Shinew, McGuire and Noe 1994). Minorities in this study, the majority of whom were African Americans from an urban area, found the WMNF's recreation value to be less important than did whites in the study. Explanations for this difference between racial subgroups have centered around the ethnicity thesis, which suggests cultural differences between white and minority groups lead to different participation rates (Washburne 1978), and the marginality thesis, which counters that recreation participation differences are more a product of limited minority resources as a result of discrimination (West 1989). Further exploration of these theses, however, is beyond the scope of this study and a subject for further research.

Differences between racial subgroups were also found with regard to religious/spiritual environmental ethics. Descriptive and analytical findings indicate minority respondents were more likely than white respondents to support environmental ethics that involved spiritual beliefs, such as "Nature is God's creation," and "It's our responsibility to take care of nature, as religion teaches us." These findings warrant further investigation into the possible explanations of such differences.

Conclusions

Study findings lead to several conclusions regarding environmental policy and further research. First, nearly all of the forest values and environmental ethics included in this study received relatively high importance ratings from respondents in all four subgroups. Mean importance scores among all subgroups were above the 4.0, "moderately important" mark for fourteen of the sixteen environmental values. The only two exceptions were economic and use values. Likewise, twelve of the seventeen environmental ethics received mean scores on the agreement side of the scale from all four subgroups. Only the "anti-environment" ethics met with broad disagreement. This suggests to managers of protected areas such as the WMNF that the public looks to these lands for a wide variety of values. However, less consumptive and future-oriented values and ethics tended to receive higher ratings than did more consumptive and present use values and ethics. These findings emphasize the importance of managing the WMNF according to its multiple use mandate, but emphasizing protection of non-consumptive, future-oriented values of the forest.

Second, more explicit attention should be devoted to nontraditional environmental constituencies. The fact that there were relatively few differences in environmental values and ethics between racial and residential subgroups in this study suggests that the constituency of the WMNF may be considerably broader than traditionally assumed. Historically, a major constituency for the WMNF is white urban residents who value the forest's recreation opportunities (U.S. Census, 1990; USDA, 1997). However, as indicated by the high level of support for a diversity of forest values across subgroups in the study, that typical user profile is only one of several constituencies who value the forest. The predominant finding with regard to racial and residential differences in this study was the degree to which such differences are overshadowed by similarity and commonality. It is important to conclude that groups such as African Americans and rural residents may value the WMNF as much as do the urban white recreationists, and for similar reasons. Public land managers should be encouraged to reach out to nontraditional constituencies when making major land management decisions.

Some observers may suggest, however, that reaching out to nontraditional constituencies may not be a worthwhile venture if their environmental values and ethics tend to mirror those of traditional constituencies. However, the similarities in environmental values and ethics between subgroups in this study do not give license to overlook the potential differences that do exist between traditional and nontraditional constituencies. For example, racial and ethnic minorities such as African Americans do not exhibit as much support for the recreation values of the WMNF as do white respondents, and place greater emphasis on religious/spiritual ethics than do white respondents. These differences may have important management implications, and warrant further investigation. Moreover, the importance of reaching out to traditionally underrepresented societal groups lies not only in new information obtained, but also in the sense of inclusiveness generated. More specifically, from a management point of view, traditionally underrepresented groups are more likely to feel like they have a stake in the future of the WMNF if they are included in the decision-making process. What may ultimately be important to managers is that more people may value the WMNF — from a diversity of perspectives — than was previously thought.

Third, the persistently low response rate in the predominantly African American strata of the sample — as low as 10% — suggests that mail surveys may not be the most effective way to reach this sector of the population. This supports Wicks and Norman's (1996) findings that indicate telephone surveys yield higher response rates than mail surveys among African Americans. Alternate research methods, such as personal interviews or focus groups, should also be considered.

Fourth, study findings may have important policy implications regarding the issue of environmental justice.

Environmental justice concerns unequal and unfair environmental costs that may be imposed on selected groups in society based on race, ethnicity, gender, class, residence or other characteristics. For example, race has been found to be a predictor of the location of hazardous waste facilities in the United States (Commission on Racial Justice, 1987). The apparent similarities in environmental values and ethics across racial and residential groups found in this and other studies may compound environmental injustice suffered by blacks, rural residents, and other underrepresented groups.

Fifth, environmental values and ethics appear to be useful research constructs. As noted earlier, environmental concern is the traditional research construct found in the literature examining human-environmental relationships, and is usually measured through support for or opposition to specific environmental issues, or degree of activism in environmental matters. This traditional conceptualization has often found differences in environmental concern between racial and residential subgroups. We believe that these traditional measures of environmental concern may be influenced by mediating variables such as income, access to political power, and economic dependence on natural resources. As alternative constructs, environmental values and ethics may measure a more fundamental relationship between people and the natural environment. Study findings based on these constructs suggest that there are relatively few differences in environmental concern based on race or residence.

In addition, while this study explored the relationship between race and residence and environmental values and ethics, it did not investigate the implication of these relationships for respondents' actions and behavior. There is evidence to suggest that a gap may exist between environmental concerns and values and environmental actions and behavior (Mohai 1990; Satterfield and Gregory 1998). Research on this issue may require a contextualization of values in order to better link them with action (Satterfield and Gregory 1998). This is an area for further research.

Finally, findings from this study support some conclusions in the environmental concern literature, but do not support others. This suggests that additional research into environmental concern is warranted. Studies using environmental values and ethics constructs carried out in a variety of study sites, and among different population groups, will better illuminate our understanding of fundamental human interest in the environment. Furthermore, additional research regarding African-American environmental values and ethics will be particularly valuable, as the low response rate among racial and ethnic minorities in this study limits the degree to which study findings can be generalized. Other directions for further research on environmental values and ethics include consideration of variables other than race and residence. For example, among the control variables used in this study, gender often influenced support for environmental values and ethics — women were more likely than men to support nearly all the environmental values studied. This relationship should be further explored.

Endnotes

1. Mean use value for the remaining subgroup, rural residents, was 4.04.
2. Significance level throughout the paper is .05, unless otherwise noted.
3. Bivariate regressions were also performed, where only race and residence were used as independent variables. Results did not differ significantly from the multivariate analysis.
4. Over 70% of the Franklin County workforce is employed in a managerial, professional, sales, or service occupation. (U.S. Census, 1990).

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Public Perceptions of Global Warming

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Abstract

This study explored public perceptions of global warming and the diverse meanings that lay people attribute to the phenomenon. The data came from six weeks of observation of visitors to a special Smithsonian Institution exhibit on global warming. The focus of the fieldwork was to document the meanings that people gave to global warming and related concepts during their tour of the exhibit by recording the comments, questions, and other narrative accounts of the visitors. Six weeks of field research yielded approximately 150 individual observations of visitor's interpretations of global warming, energy consumption, the greenhouse effect, nonrenewable resources, pollution, and ozone depletion. Three patterns emerged from the data: a gradient of knowledge with the attentive public falling between the average citizen and those who have become engaged, a catastrophism that represents a reverse availability heuristic, and a belief in the robustness of the biosphere. While each of these have some relation to previous work, it would be useful to see if survey-based or experimental studies confirm these tentative conclusions.

Keywords: *global warming, climate change, lay perspectives, public knowledge, qualitative research, Smithsonian Institute*

Over the last quarter century, most research on environmentalism has been conducted using quantitative analyses of survey data. This tradition is beginning to build cumulative knowledge regarding the demographic determinants of environmental concern (Jones and Dunlap 1992; Van Liere and Dunlap 1980), with a special focus on gender (Blocker and Eckberg 1997; Davidson and Freudenburg 1996; Stern, Dietz and Kalof 1993), race (Mohai 1990) and age/period/cohort effects (Honnold 1984; Kanagy, Humphrey and Firebaugh 1994; Mohai and Twight 1987). There is also some research on the social psychological processes that generate environmental concern (Stern, Dietz, Kalof and Guagnano 1995). Recently, international comparisons of environmental concern based on survey work are emerging (Dunlap, Gallup and Gallup 1993; Dunlap and Mertig 1995, 1997; Inglehart 1995). But little research on environmentalism has been done in the qualitative or ethnographic tradition.

One notable exception to the paucity of qualitative research on environmentalism is the work of Kempton, Boster, and Hartley (Kempton 1991; Kempton, Boster and Hartley 1995; Löfstedt 1992) on global change. In ethnographic interviews with a few dozen U.S. citizens, Kempton et al. find that the American public has a general awareness of global warming that seems to be based on broad generalizations from other environmental problems such as ozone depletion and local air pollution. When applied to climate change, these models often lead to understandings of both the mechanisms and the likely consequences of climate change that are discrepant with current scientific understanding. This pattern of understanding, roughly right in the broadest view but often quite incorrect in an understanding of mechanisms and consequences, is parallel to my findings.

The strength of the qualitative tradition in the social sciences is that it can be a very fruitful tool to explore how people are thinking about an issue. Qualitative work helps to identify the kinds of language people use and the conceptual frameworks they employ in making sense of complex environmental phenomena. Qualitative work can uncover the unexpected in ways that surveys, despite their many strengths, cannot. Eventually, qualitative data can lead to a new hypothesis to be tested with survey data.

Concern about climate change, like ozone depletion and biodiversity loss, is a relatively new phenomenon on the public scene. The possibility of climate change as a result of industrial emissions was proposed a century ago by Sven Arrenhius at Uppsala (Weart 1992), and some concern about climate was raised during the debates about SuperSonic Transport during the early 1970s. But broad public concern with climate change is an issue that has emerged in the 1990s, and thus it is especially useful to explore public perceptions of the issue in an exploratory way, following in the footprints of Kempton, Boster, and Hartley. Here, it may be useful to briefly explain the phenomenon of global warming, as we understand it. The prolific release of greenhouse gases (GHGs, such as carbon dioxide, methane, and water vapor) into the upper atmosphere causes a strengthening of the naturally occurring greenhouse effect, which leads ultimately to a warmer Earth. Called global warming, this phenomenon will (and is, it is argued) force a wide range of radical changes in the global climate, including more intense and

more frequent storms and floods, crop failures, droughts, and sea level rise. Global warming is the cause and climate change is the effect.

The goal of this study is to explore public perceptions of global warming and the diverse meanings that lay people attribute to the phenomenon. This research is exploratory and inductive, rather than explanatory and deductive.

Method

The data came from six weeks of fieldwork conducted by the author while working as a docent at a special Smithsonian Institution exhibit on global warming. The focus of the fieldwork was to document the meanings that people gave to global warming and related concepts during their tour of the Smithsonian exhibit. A field journal was used to record comments, questions, and other narrative accounts of the visitors to the exhibit. Occasionally, the researcher used probes to engage people in a discussion of global warming. With young children, for example, the researcher would simply ask if they knew what traps heat as it leaves the Earth. After the visitors moved on to another exhibit, their narratives were recorded in the field journal, with the researcher's best estimate of key demographic variables, such as gender, age and national origin. Six weeks of field research yielded approximately 150 individual observations of visitor's interpretations of global warming, energy consumption, the greenhouse effect, nonrenewable resources, pollution, and ozone depletion.

The exhibit, entitled "Global Warming: Understanding the Forecast," was sponsored by the Environmental Defense Fund. All docents were former students of the Earth Systems Science program at Columbia University's Biosphere II, the current home of the exhibit. The exhibit itself was composed of three rooms off of the main entrance hall of the Museum. The rooms contained a variety of photographs, displays and hands-on demonstrations that were intended to give the public a sense of the basic science behind current concerns with climate change. A number of displays also provided some sense of the probable consequences of global warming, and of some of the steps that could be taken to slow global warming.

Results

Three major patterns were observed in the narratives of the visitors to the exhibit: 1) ozone depletion is responsible for global warming, 2) the effects of global warming are interpreted as "doomsday" type phenomenon, and 3) natural phenomena such as volcanoes have a much more far reaching effect on climate change than humans ever could, or that the Earth's atmosphere is such a vast system that any anthropogenic emissions are rendered insignificant. Each of these patterns is discussed in turn, including some of the key narratives that illustrate the pattern.

Pattern I: Depletion of Stratospheric Ozone is Responsible for the Greenhouse Effect and Global Warming

Many people, when asked about global warming, tend to integrate this with the problem of stratospheric ozone depletion. I observed that the most frequent misconception among the public is that ozone is, in some way, responsible for either global warming or the greenhouse effect. Among the people who held this belief, a majority of them were under the impression that the ozone layer actually keeps heat out of earth's atmosphere. Consequently, it is the notorious "holes" in the ozone layer that allow more heat than is usual into the atmosphere, thereby causing global warming. This is, of course, a false assumption — but nonetheless on the right track. While stratospheric ozone does not keep heat out of Earth's atmosphere, it does filter out some key wavelengths of ultraviolet light from the Sun, satisfying one of the fundamental requirements for life to flourish on Earth.

Near the beginning of the exhibit was a working model that mimicked the greenhouse effect. It included a portion of the Earth encased in glass, with a thermometer both inside and outside the small greenhouse, showing the temperature difference. The very first displays concerned the climate history of the Earth, and how climates have changed (and will continue to change) on a geologic time scale. As they passed the greenhouse model, I simply asked visitors the question: "what traps heat in Earth's atmosphere?" Most of the responses were, I found, quite representative of the commonly held misconception that stratospheric ozone depletion is closely related or even equivalent to global warming. (Quotes from field notes are in italic type).

> *A boy in middle school, when I asked him if he knew how the greenhouse effect worked, said that "light comes in and is trapped, and now escapes through holes in the atmosphere." His mother said that this was more than what she knew.*

This explanation of how the greenhouse effect works is inverted, since it is more of an explanation for a global cooling phenomenon. However, it seems he was thinking about ozone depletion when he gave his explanation.

> *Two girls, probably late elementary school, knew the basics of the greenhouse effect (meaning that they knew it traps heat in Earth's atmosphere), and they knew the names of two greenhouse gases: methane and CFCs.*

They also knew of carbon dioxide, but I had to coax it out of them. It may be significant that they mentioned CFCs as a greenhouse gas, since though it is a GHG, it is one of the least significant ones and it is responsible for stratospheric ozone depletion. Two junior high school age boys gave the ozone response to my question of what they think traps heat in the atmosphere. They explained that the holes in the ozone layer let in more heat (presumably they meant that they let in more heat than is normal), which melts the polar ice caps.

An Asian-American woman asked if the ozone was a separate thing from global warming. She mentioned that many kids think that the hole or holes in the ozone layer let in heat, thereby causing "global warming."

Three boys, between upper elementary and middle school, knew how heat was being trapped in Earth's atmosphere, though the oldest one told me that ozone traps heat. They were able to make the connection between putting more and more GHGs in the atmosphere and a warming Earth.

An elementary age boy, when I asked him what he thinks traps heat in the atmosphere, replied "ecosystems."

These responses are colorful examples of a common trend in younger children. From among the many elementary level school groups that came to the exhibit, the children seemed to be somewhat knowledgeable about prevalent environmental issues. However, it seems that many of them become understandably confused when it comes to applying what they learn in school to more complex and abstract concepts.

A mid-elementary schoolboy said that sunlight comes in, gets reflected by the clouds, and gets caught up in all the "junk" in the atmosphere. Later, he mentioned ozone, presumably as something that curbs this effect.

A man with his son and daughter was explaining global warming to them, specifically how the greenhouse effect worked. One of the things that he mentioned was that pollution in the air causes global warming.

These two responses are representative of another typical misconception, that "pollution" in general is something that leads to global warming with little idea as to what varied effects different kinds of pollutants in the atmosphere may have on the environment.

An older couple from New Zealand mentioned the ozone hole and asked if it was relevant to the exhibit. [Of course the issue of ozone depletion is especially relevant to people from New Zealand.]

An elementary age boy from Iceland had a fairly good knowledge of the greenhouse effect, but gave me the typical ozone response to the "what traps heat in the atmosphere" question.

During the course of the study, I received many more of these typical "ozone" responses to my probing about the greenhouse effect. It was a rare event, in fact, that a visitor to the exhibit would not, in some way, incorporate the famous hole in the ozone layer with the entirely independent problem of global warming.

Pattern II: Those who are *not* skeptical of global warming theories perceive the effects of global warming as a "doomsday" type of phenomenon, where the effects will be sudden and catastrophic, rather than subtle and gradual.

The view that the effects of global warming will be both sudden and severe may be closely related to the degree of public concern about global warming. Moreover, this view seems to be closely tied to the common tendency for people's views to be easily influenced by inter-annual climate variation. In other words, people make their judgments about global warming based on the weather, not the climate. For example, an especially cold summer may make a skeptic out of one person (such as the summer this exhibit was at the Smithsonian), where as an especially warm winter can easily make firm believers out of would-be skeptics. Are these unusual patterns a consequence of global warming? Perhaps. However, to make a judgement based solely on this evidence is like somebody making a decision about the harmful effects of smoking because they once knew a heavy smoker who lived into his or her nineties. Global warming is a long term shift in typical weather patterns, while the weather in a given year may or may not reflect the overall trends involved in climate change.

A man in his sixties, after listening to my explanation of the basics of the greenhouse effect and global warming, asked me "to explain, if you could, why we're having such cold weather lately." I tried to explain natural climate variability (failing). He persisted, asking if I've ever seen such a cold spring. It doesn't seem that this type of reasoning to disprove theories of global warming is unique to any one age group, but it is common to those who are skeptical about climate change.

A woman, in her thirties, from New Jersey, was confused as to how to explain the recent cold weather. "Winter never ended," she said. She seemed to know little about the greenhouse effect.

A man in his mid-40's was very clearly a supporter of global warming theories, and very worried about it. He believed that it has been getting progressively hotter over the years, which is meaningful to him because of his work as a framing contractor (most of his work is done outdoors). He told me about working outside in the hot sun and finds that he can no longer work all day long because of the heat. He did not know about natural climate variability prior to his visiting the exhibit.

These responses reflect the trend of making judgements based on abnormal weather patterns. In particular, the response from the framing contractor illustrates how this trend may influence the perception that global warming is — or will be — a sudden, catastrophic phenomenon.

A boy, either upper elementary or middle school, said that he was skeptical about doomsday theories. He quoted natural variability in explaining his position . . . He thought that some small change is plausible.

An older woman asked me on what scale this (global warming) would occur.

After making the connection between a warmer Earth and shrinking glaciers and rising seas, the three upper elementary school children I was talking to asked me how fast the glaciers will shrink. They also asked me if I thought that we are more concerned about the glaciers melting than the sea rising, or the other way around.

In this last passage, it is key to note that the children asked how fast the glaciers will shrink. It is a more subtle point, but I often noticed that the consequences of global warming were almost always discussed in the future tense.

A ten year old boy who was preparing for a school report on weather, asked me when I thought the change is going to occur. At this point I realized that there is this "doomsday" misconception, where the effects of global warming — whether they are sea level rise, crop failure, or anything else, will be sudden. There is very little attempt made to get people to realize that these changes are gradual.

Finally, we discuss a pattern of observations that is intriguing, although the narrative illustrations are far fewer than for the first two patterns.

Pattern III: Many people believe that natural phenomena such as volcanoes have a much more far reaching effect on climate change than humans ever could, or than the Earth's atmosphere is such a vast system that any anthropogenic emissions are rendered insignificant.

Two men from the American Petroleum Institute were critical of the exhibit. They pointed out that it did not accurately represent the relative amount of GHGs that humans release into the atmosphere compared to the natural greenhouse/GHG system. Especially considering water vapor, which, naturally, makes up 97% of the Earth's greenhouse gas system.

A man in his early sixties pointed out that the upward temperature trend of the past 120 years is just a glitch over geologic time. He wondered how we could know that humans have any discernable effect on the Earth's climate system compared to natural occurrences such as volcanoes.

This response is closely related to the last pattern. This visitor to the exhibit was viewing the issue of global warming on a geologic time scale, not just simply a human time scale. It was rare to meet visitors who thought of global warming from within the framework of natural climate variability. Even the most intense skeptics did not think to argue the point from the standpoint of geologic time, though this is one of the more convincing arguments against the evidence for global warming.

A man in his thirties said that he thinks that the human pollution is not significant compared to the natural process of our climate system, citing as evidence that it (our climate system) is so old, and the fact that it naturally fluctuates in and out of ice ages.

A man in his early fifties said that it seems like we just don't know how much of an impact humans have on climate change.

A young man from Perth, Australia, in his early twenties, admitted that he was a skeptic of global warming. He said that it is "egotistical of us to think that we can alter something as immense as the atmosphere." He asserted that we cannot destroy the Earth. He understood that we emit very large amounts of carbon dioxide, though these amounts are miniscule compared to the vastness of our atmosphere.

Discussion

This research examined museum visitors' narratives about global warming. There are three overall patterns that emerged from this ethnographic work. First, as noted by Kempton and his collaborators (Kempton 1991; Kempton, Boster and Hartley 1995), people tend to confuse climate change with stratospheric ozone depletion. But, in contrast to the Kempton et al. findings, the people visiting the

Smithsonian did not commonly confuse global warming problems with local air pollution problems. This may indicate that those self-selecting to visit the global warming exhibit made finer distinctions than the average citizen, even if the distinctions were somewhat blurred. Or perhaps it indicates that public perception has become more sophisticated in the years since the Kempton studies. Thus, while most Americans express strong concern about the environment and have a folk ecology that is a reasonable first approximation to environmental science (Stern, Dietz and Guagnano 1995), they have little detailed knowledge. The exception occurs when people face a local problem, such as a toxic waste site. Lay people then become quite sophisticated about salient scientific and technological issues (Brown and Mikkelsen 1990).

My results indicate an intermediate step between the very approximate knowledge of the general public and the suprising expertise of local activists — an attentive public who still confuses some details but makes finer distinctions than the general public. There is a compression of concepts to simplify things, but the degree of compression and resulting distortion differs depending on how engaged someone is. Of course, this makes great sense if people are rational. People, in their busy day to day lives, are seldom faced with decisions about climate change or other environmental problems. There is a cost to learning more, as economists have often noted in the theory of information costs. Thus, people tend to know as much as is useful to them — enough to take a basic position on general issues. The challenge for those advocating environmental policy is to find ways to make information salient to the public, a public with knowledge that is roughly right but can easily be confused and misdirected about detail.

A second pattern is the opposite of the general pattern of folk ecology. While most of the public considers the biosphere vulnerable to human action, some clearly see the scale of human activity as too small to have much influence. This is, of course, a familiar story. Dumping of toxins in the land, air and water has usually been justified by the immense capacity of the system to absorb these perturbations.

A third and final pattern is the "catastrophism" of many visitors. They assume that climate change will produce a sudden dramatic change, or at least that casual day-to-day observation can reveal the pattern of climate change. Work in cognitive psychology has revealed what is referred to as the availability heuristic — that dramatic events are seen as more probable than equally or even more frequent events that are less dramatic (Kahneman, Slovic and Tversky 1982). The plane crash that kills hundreds makes air travel seem risky while the thousands of less dramatic auto deaths have little effect on public perceptions of risk. Here we have an obverse availability heuristic — that people who are concerned expect the consequences to be dramatic.

There are a number of limitations to this study. Most important, 1) the sample used was a special group of people who were interested in the global warming exhibit at the Smithsonian, 2) the observations were taken in the context of the exhibit, 3) the data collection was limited to six weeks of observation, and 4) the analysis was, in fact, influenced by the researcher's interpretation of the meanings attributed to global warming by the lay public. But such is the nature of ethnographic work. An attempt was made to be as objective as possible, but subjectivity in research of this nature is unavoidable: science is a socially embedded activity (Gould 1986). However, some insights into public perceptions of environmental problems have emerged and should provide important questions for future work in this area. Three patterns are identified here: a gradient of knowledge with the attentive public falling between the average citizen and those who have become engaged, a catastrophism that represents a reverse availability heuristic, and a belief in the robustness of the biosphere. While each of these have some relation to previous work, it would be useful to see if survey-based or experimental studies confirm these tentative conclusions.

Some of the perceptions observed in this research may have been grounded in political argument, conservative rhetoric, and mythmaking about climate change (I thank an anonymous reviewer for this insight). This issue and a number of other important questions could inform future qualitative work. For example, what are some things that would make the middle aged think that the phasing out fossil fuels is unrealistic for economic reasons? What are some things that would make them think otherwise? How is people's knowledge of growing populations and growing rates of per capita energy consumption related to their knowledge of what is being done to mitigate the causes of global warming? How do short-term trends, such as recent cold weather, exacerbate the misperceptions of global warming as a doomsday phenomena? What are the effects of global warming in the public's view? These are questions that, at least initially, would best be addressed with further ethnographic work.

Endnote

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Mainstreaming the Environment: Global Ecology, International Institutions and the Crisis of Environmental Governance[1]

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Abstract

The concept of sustainable development is now considered a guiding principle of national and international action. Yet the widespread acceptance of this concept stands in contrast with the inability so far to alter effectively the development model responsible for environmental degradation. The lack of many positive and concrete results produced by massive efforts in the field of international cooperation for the environment indicate the contradictory character of this new "global" environmentalism. The purpose of this article is to explore how environmental considerations were reframed so as to become compatible with global development. Adopting an international political economy perspective and based on interviews with the main categories of actors involved, it provides evidence that environmental concerns were remodeled by the joint action of technocratic environmentalists, the international UN-related development establishment and business and industry sectors. Analyzing the results of international cooperation and in particular the review of UNCED's implementation five years after the Summit, the article questions the nature of the "sustainable development" consensus. The inability of the international community to deal with most global environmental issues reveals the limits of international cooperation in the name of the environment.

Keywords: *global development, international institution, business, environmental management*

Introduction: From Rio 92 to New York 1997

A significant feature of international politics since the end of the 1980s has been the growing concern with environmental protection and the multiplication of the number of international conferences and agreements in this area. Environmental protection is presently recognized as a major political issue, and has acquired a well-defined position on the international political agenda. The United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro from 3 to 14 June 1992, was a unique moment in diplomatic history. The conference heralded the most elaborate attempt ever to develop institutional solutions to major environmental problems.

Based on the idea that "environment" and "development" had to be linked in a comprehensive framework that would allow for the generalization of economic growth and prosperity while including environmental concerns, UNCED came out with a global solution to the ecological crisis, the concept of "sustainable development." A global bargain was struck, according to which developed nations would provide some financial resources and transfer appropriate and "clean" technology to developing countries to help them protect their environments. An international mechanism — the Global Environment Facility (GEF) — was settled on to undertake the funding of international projects. At the same time, global conventions on Climate Change and Biological Diversity were negotiated in an attempt to control the most devastating effects of economic activities, such as CO_2 emissions from industry and consumers, and to protect the earth's living capacity. A program of action, "Agenda 21," was carefully worked out, covering all areas from health to institutions, from the role of women to the responsibilities of business, all in order to serve as a guide for action to attain sustainability in every country. To facilitate the transition towards "sustainable development," developed countries promised large sums of money in the form of aid, investment and pollution control projects. The Conference generated a high degree of optimism as to the international community's ability to deal with global environmental problems. Development could continue, now on a truly global base, without the risk of the complete exhaustion of natural resources or of other major environmental catastrophes. The Cold War was over, and rational planning, technology and economic instruments would ensure the extension of the capitalist model of accumulation worldwide.

Five years later, at the June 1997 Special Session of the United Nations General Assembly dedicated to the review of UNCED's implementation, the climate was rather different. Optimism had given way to disappointment and, in some cases, there was real concern about the viability of the "sustainable development" model, which relies on a framework of action that does not fully address the causes of environmental destruction. Developed countries have been unable or unwilling to stick to their promise of increasing the aid to development to 0.7% of GDP, as agreed in Rio. Countries like the United States, the largest contributor to global warming, have not shown the will to take effective action that would show a real commitment to reduce their industrial emissions. On the other hand, developing countries refused to take any further steps without the guarantee that substantive financial resources would back them or that at least the commitments taken in Rio would be respected. The New York 1997 Declaration even recognized that the situation of the environment had deteriorated over the intervening five years, hoping modestly that more progress would be achieved by the next summit in 2002.

The meager positive results produced by the massive efforts in the field of international cooperation for the environment seem to indicate the contradictory character of this new, global "environmentalism." The purpose of this article is to demonstrate that, while originally being the potential source of a radical and transformative project, environmental concerns were ultimately reframed by the joint action of technocratic environmentalists, the international UN-related establishment and business and industry sectors to become compatible with global development. Adopting an international political economy perspective, the article explores the interaction between state and markets in the construction of global environmental politics. It provides evidence that although there is a new consensus on the diagnosis of the problem — worldwide environmental degradation — very few commitments have been taken to alter the accumulation model and the patterns of production and consumption that contribute to this situation. It suggests that the failure of the international system in ensuring a move towards sustainability, exemplified in New York, is linked to the very nature of the global bargain struck in Rio. By aiming to make "development" — in its more recent global phase, with its focus on globalized and ever expanding production, trade and consumption — become "sustainable," the concept of sustainability has been stripped of most of its meaning. The inability of the international community to deal with most global environmental issues reveals the contradictory nature of the "sustainable development" consensus and demonstrates the limits of international cooperation in the name of the environment.

Origins and Dimensions of the Ecological Project

In order to understand the meaning of the transformation of environmental concerns into a widely accepted concept, it is useful to recall the original purpose of the ecological project. The ecological movement finds its origins in a protest aimed at defending the right of individuals to regain influence over their ways of living, of producing, and of consuming. As stressed by Gorz (1992), it started as a radical cultural movement, as an attempt by individuals to control and understand the consequences of their actions. With the ecological critique, activists hoped to refocus attention on local knowledge and practices and to bridge the separation of humans from nature, a division that had been at the heart of the Enlightenment project.

In the 1970s, the ecological movement became a political movement, and there was an awareness that the demands of ecology were not only sectorial and local aspirations but rather represented a value shared across national divides (Smith 1996; Gorz 1992).[2] The publication of the report "Limits to Growth" by the Club of Rome in 1972 gave a scientific backing to these cultural demands and showed the risks posed by the model of industrial growth on the future of life on earth. The report provided a holistic view of the interrelationship between population growth, food production and consumption, the industrialization process, depletion of nonrenewable resources and waste and pollution at the global level, recognizing that waste and pollution are not only a problem for the living conditions and consumption patterns of the population, but affect the very basis of the productive sphere's reproduction (Meadows, Meadows, Rander and Behrens 1972). For the first time, environmental degradation provoked by economic growth was considered from a global perspective, going beyond the occasional questioning of pollution problems during the 1950s and 1960s. In addition, the report launched a real debate on the morality of growth and of the differences in consumption and living standards between developed and developing countries.

The 1970s also represented an inflection in the history of social mobilization and collective action with the emergence of the "new social movements," which identify themselves as value movements carrying universal interests going beyond class, nation, sex and race borders. The new social movements such as the environmental movement appear as "modern" in the sense that they are based upon the belief that history's course can be changed by social actors and are not determined by what Touraine calls a "metasocial principle" (Offe 1988, 219). Environmentalists believe that, although representing a real challenge to our present lifestyles and habits, it is possible to move towards a sustainable society

that respects nature and privileges well-being over accumulation.

Speaking about the existence of a unique and unified "green movement" is clearly incorrect. Environmental concerns mean different things to different people, take many forms and are expressed through different channels. In addition, environmentalism takes very different forms in developed or in developing countries. It can mean fighting for an even better quality of life in advanced countries, and fighting for subsistence or even survival in poor countries. Despite this diversity, for the purpose of academic inquiry, three main components of the "green movement," albeit sometimes overlapping, can be distinguished. These three categories should be viewed as "ideal-typical" and not necessarily mutually exclusive.[3]

The first tendency of the ecological movement, deep ecology, is typically a postmodern movement.[4] In philosophical terms, deep ecology challenges the separation between humans and nature that was at the heart of modern humanism. Deep ecology is not "anthropocentric," it is "ecocentric." As observed by Merchant (1992), it seeks a total transformation in science and in worldviews that will lead to the replacement of the mechanistic paradigm (which has dominated the past three hundred years) by an ecological framework of interconnectedness and reciprocity. The ideas of deep ecology have influenced (among others) Greenpeace, the largest green NGO, which claims that humanist value systems must be replaced by supra-humanist values that place any vegetal or animal life in the sphere of legal and moral consideration (Ferry 1992). Greenpeace is therefore an example of an environmental organization which, based on scientific reports and examinations, acts to change worldviews and consciousness in order to promote a shift to "ecocentrism" rather than trying to act to transform the production systems which lie at the root of environmental problems.[5] Yet, while having influenced the most well-known environmental NGO, deep ecology remains a fairly marginal wing of the green movement. Deep ecologists have been criticized for their lack of a political critique, failing to recognize that the idea itself of "ecocentrism" is "anthropocentric." As stressed by Merchant, deep ecologists take the character of capitalist democracy for granted rather than submitting it to a critique. Their tendency to refuse to consider economic policy and to assume a purely conservationist standpoint relegates them to a secondary position.

The second component of the "green movement" is what can be called the "social ecology" movement, which is to a large extent composed of people from the "New Left," dissatisfied with Marxism. Contrary to the deep ecologists, social ecologists maintain an anthropocentric perspective: the concern for nature is understood as a concern for the environment of human beings. Social ecologists seek transformations in production and reproduction systems, that is, a transformation of political economy, as the way to achieve sustainability, social equity and well being. Social ecologists see a contradiction between the logic of capitalism and the logic of environmental protection. For them, environmental protection cannot be made dependent upon economic development, because development, in its liberal sense, has meant the subordination of every aspect of social life to the market economy, and can therefore no longer be considered as a desirable goal. The hegemonic view on "sustainable development," which rehabilitates development as the global goal of humans, is thus unsatisfactory. Social ecologists call for a rethinking of the theoretical basis of development that should include not only economic but also political and epistemological dimensions, such as the questions of participation, of empowerment and local knowledge systems. For them, what makes development "unsustainable" at the global level is the pattern of consumption in rich countries. Thinking about sustainability thus implies considering the contradictions imposed by the structural inequalities of the global system (Sachs 1992; Lipietz 1993; Redclift 1992). Finally, social ecologists vary to a certain extent in the North and in the South: generally speaking, organizations in the North sometimes carry their rejection of development as far as to strike postmodern stances, while organizations in the South focus more on equity and on the need to redistribute the benefits of development.

Finally, there is a more technocratic tendency to the green movement, a tendency that tries to make economic growth and environmental protection appear as compatible goals, which need not require a profound change in values, motivations and economic interests of social actors, nor new models of economic accumulation. For them, it is because capitalist production methods and life standards are not developed enough that environmental problems emerge. The evidence is that environmental standards are higher in richer countries. Technocratic environmentalists seek to preserve the environment through the establishment of international institutions, the use of economic and market instruments and the development of clean and "green" technology. The result is a rather apolitical approach and activists who, though still interested in environmental protection, are not primarily committed to ideas of equity and social justice, or at least not as committed as social ecologists (Gudynas 1993). The technocratic tendency is thus essentially a rich country tendency, although it is also present in some elite circles in the South. These environmentalists tend to focus on issues of population for example, arguing that the biggest threat to the environment comes from high population growth in the Third World and the pressure it will bring to bear on the stock of natural

resources. Technocratic environmentalists usually tend to belong to organizations which have little or no membership, and rely on their technical and legal expertise and on their research and publishing programs to influence decision-making. Through their close relationship with government and other influential actors and their easy access to international organizations, these organizations tend to have a greater impact than activist membership organizations (Porter and Brown 1996).[6]

Today, it can be said that this technocratic approach appears to be prevailing over both the biocentric (deep ecology) and the social ecology perspectives and has become what is today mainstream environmentalism, which finds its major expression in the concept of "sustainable development." Despite the challenging and radical nature of ecological concerns, the fact that they might present a potential for change in the present economic model, they were ultimately reframed so as to constitute what appears as an apolitical, techno-managerial approach.

The Formation of a Consensus on "Sustainable Development"

It is interesting to examine how the apparent consensus around the concept of "sustainable development" was built and how the project of global environmental "management" became hegemonic. Two main actors have contributed to the hegemony of the liberal environmental management project. One is the scientific and policy-making environmental community, or, in the words of Peter Haas, the environmental "epistemic community" (Haas 1990); the other actor is business and industry.

The Brundtland Report, the United Nations Conference and the Global North-South "Bargain"

International environmental politics did not emerge in the 1990s. As early as 1972, a United Nations Conference on the Human Environment took place in Stockholm, launching the era of international environmental negotiations. Stockholm did produce some significant outcomes, leading to the creation of the United Nations Environment Program (UNEP), based in Nairobi, which coordinates environmental action within the United Nations. The context of the Stockholm Conference was not very favorable to the adoption of strong environmental commitments. Developing countries were unsatisfied with the UN system and preparing the movement for a New International Economic Order. They were not willing to yield part of their sovereignty over natural resources in the name of environmental protection, and denounced the emergence of "eco-imperialism." The oil crisis of the 1970s relegated environmental protection to a marginal position in international relations.

In the 1980s, the international climate started to change as the debt crisis was seriously affecting developing countries and their role and participation in international fora. In this context, "international commissions" were established to try to elaborate global proposals to promote peace and development, such as the Brandt Commission. Efforts were also undertaken to replace environmental protection on the international political agenda. The World Commission on Environment and Development was established in 1983 under the presidency of Gro Harlem Brundtland, and asked to produce a comprehensive report on the situation of the environment at the global level.

The work of the Commission represented a landmark in international initiatives to promote environmental protection as it produced the concept of *sustainable development*, a concept that would become the basis of environmental politics worldwide. Sustainable development is defined by the Brundtland Report as a development that is "consistent with future as well as present needs" (World Commission on Environment and Development 1987). The concept of sustainable development was built as a political expression of the recognition of the "finiteness" of natural resources and of its potential impact on economic activities. Indeed, the report argues that, while we have in the past been concerned about the impacts of economic growth upon the environment, we are now forced to concern ourselves with the impacts of ecological stress — degradation of soils, water regimes, atmosphere and forests — upon our economic prospects.

The report offered a holistic, global vision of today's situation by arguing that the environmental crisis, the developmental crisis and the energetic crisis are all part of the same, global crisis. It offers solutions to this global crisis, which are mainly of two kinds. On the one hand there are solutions based on international cooperation, with the aim of achieving an international economic system committed to growth and the elimination of poverty in the world, able to manage common goods and to provide peace, security, development and environmental protection. On the other hand, come recommendations aiming at institutional and legal change, including measures not only at the domestic level but also at the level of international institutions. The report emphasizes the expansion and improvement of the growth-oriented industrial model of development as the way to solve the global crisis.

The Brundtland Report also promoted the view that global environmental degradation can be seen as a source of economic disruption and political tension, therefore entering the sphere of strategic considerations. For the Brundtland Commission, the traditional forms of national sovereignty are

increasingly challenged by the realities of ecological and economic interdependence, especially in the case of shared ecosystems and of "global commons," those parts of the planet that fall outside national jurisdictions. Here, sustainable development can be secured only through international cooperation and agreed regimes for surveillance, development, and management on the common interest.

For example, the consequences of climate change such as rising sea levels and the effects of temperature variations on agricultural production would require deep changes in the economy and impose high costs on all countries, thus leading to very unstable situations. The issue of forest preservation can also fit into this context, since forests contribute to the stability of climate by acting as carbon sinks, and assure the regeneration of ecosystems by providing reservoirs of biological diversity. Preserving forests then becomes more than an ecological concern: it is also a security imperative. So the "environmental security" discourse was also a cause for the need to find a "consensual solution" to issues of environmental protection.

The United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in June 1992, marked the official institutionalization of environmental issues in the international political agenda.[7] Twenty years after the 1972 Stockholm Conference, which was on the "Human Environment," Rio meant a real shift in the vision that had dominated environmental politics so far. After Rio, environmental considerations became incorporated into development, and a "global bargain" was struck between North and South on the basis of the acceptance from both sides of the desirability of achieving a truly global economy which would guarantee growth and better environmental records to all. UNCED recognized the "global finiteness" of the world, i.e., the scarcity of natural resources available for development, but adopted the view that, if the planet is to be saved, it will be through more and better development, through environmental management and "eco-efficiency."

The UNCED process involved over a hundred and fifty hours of official negotiations spread over two and a half years, including two planning meetings, four Preparatory Committees (Prepcoms), and the final negotiation session at the Rio Summit in June 1992.[8] The major result of UNCED is called "Agenda 21," a 700-page global plan of action which should guide countries towards sustainability through the 21st century, encompassing virtually every sector affecting environment and development. Besides Agenda 21, UNCED produced two non-binding documents, the "Rio Declaration" and the Forest Principles. In addition, the climate change and the biodiversity conventions, which were negotiated independently of the UNCED process in different fora, were opened for signature during the Rio Summit and are considered as UNCED-related agreements. The "Rio Declaration," which was the subject of much dispute between the Group of 77 (the coalition of developing countries) and industrialized countries, mainly the United States, illustrates well the kind of bargain reached in Rio.[9] It recognizes the "right of all nations to development" and their sovereignty over their national resources, identifies "common but differentiated responsibility" for the global environment, and emphasizes the need to eradicate poverty, all demands put forward by the Group of 77. In return, the suggestions by the G77 to include consumption patterns in developed countries as the "main cause" of environmental degradation and the call for "new and additional resources and technology transfer on preferential and concessional terms" were rejected by OECD countries.[10] In the end, on the issue of finance, an institution called the "Global Environment Facility" (GEF) was set, under the joint administration of the World Bank, the United Nations Development Program (UNDP) and the United Nations Environment Program (UNEP), as the only funding mechanism on global environmental issues, and OECD countries committed themselves to achieving a target of 0.7 percent of GNP going to ODA (Overseas Development Assistance) by the year 2000, to help developing countries implement UNCED's decisions.

Despite the failure of the G77 to win significant concessions on financial resources, if one considers the differences in priorities between developed and developing countries and the conflictual character of the negotiation process, UNCED's outcomes were still seen by the international establishment as quite impressive, marking "an important new stage in the longer-term development of national and international norms and institutions needed to meet the challenge of environmentally sustainable development" (Porter and Brown 1996, 129). A Commission on Sustainable Development (CSD) was established to monitor and report on progress towards implementing UNCED's decisions. In particular, the CSD's stated aims are to enhance international cooperation by rationalizing the intergovernmental decision-making capacity, and to examine progress in the implementation of Agenda 21 at the national, regional and international levels.

After UNCED, environmental considerations were "integrated" at all levels of action. The "sustainable development paradigm," as some authors recognize, is already replacing the "exclusionist paradigm" (i.e., the idea of an infinite supply of natural resources) in some multilateral financial institutions, as well as in some state bureaucracies and in some parliamentary committees. Most economists now acknowledge that natural resources are scarce and have a value that should be internalized in costs and prices. Organizations such as the European Union made the "inte-

gration" of environmental concerns one of their leading policy principles.[11] Many countries carried out environmental policy reform to implement UNCED's decisions and the Agenda 21. The boundaries of environmental politics were broadened and its links with all other major issues on the international arena, such as trade, investments, debt, transports, for example, were examined.

Efforts were also undertaken to improve environmental records of multilateral finance and development institutions. The World Bank, which has a long history of contributing to environmental degradation by financing destructive projects, went through a "greening" process, and now has a "Department of the Environment" which conducts "environmental impact assessments" and imposes "environmental conditionalities" before granting loans. The World Trade Organization has a "Committee on Trade and Environment" (CTE) which is in charge of ensuring that open trade and environmental protection are mutually supportive. All these efforts can be seen, according to Porter and Brown (1996), as part of a longer-term process of evolution toward environmentally sound norms governing trade, finance, management of global commons, and even domestic development patterns.

Environmental considerations were then to be introduced in all major international bureaucracies as a dimension to take into consideration in decision-making processes, and as a challenge for global management. To a certain extent, the "technocratic" approach became hegemonic because it best suited the interests of the international development elite as it magnified its managerial responsibilities. In a time when the legitimacy and utility of the United Nations system was being seriously questioned by its idealizer and major financial supporter — the United States — the goal of making environment and development compatible was seized by some UN agencies as an unexpected opportunity to regain credibility, as well as to be granted funds and to hire new staff for recently created units on "trade and environment" or "finance and environment." UNCED provided a new legitimacy to international organizations such as the World Bank or the World Trade Organization and to their bureaucracies, which now try to assume a leading role in "managing the earth." With the promotion of economic growth to a planetary imperative and the rehabilitation of technological progress, both development institutions and organizations and states appeared as legitimate agents to solve global environmental problems (Chatterjee and Finger 1994; McMichael 1996).

If international organizations have benefited from the global perspective that emerged from Rio, they have also contributed to mold it. There is an active "epistemic community," which includes both the international organization establishment and large environmental NGOs, promoting the "global environmental management" approach.[12] These groups tend to believe that their moral views are cosmopolitan and universal, and emphasize the existence of an international society of human beings sharing common moral bonds. In this kind of "same boat" ideology, environmental concerns tend to be presented as moral imperatives, related neither to political nor to economic advantages. It would be a consensual concern, a sort of universal principle accepted over borders and political boundaries. An example of an institution promoting these ideas is given by the Commission on Global Governance. In the words of the Commission, "we believe that a global civic ethic to guide action within the global neighborhood and leadership infused with that ethic are vital to the quality of global governance. We call for a common commitment to core values that all humanity could uphold. We further believe humanity as a whole will be best served by recognition of a set of common rights and responsibilities" (The Commission on Global Governance 1995, 9).

Part of the Green movement came to support this "same boat ideology" and was incorporated into the epistemic community. Actually, mainstream conservationist environmentalists were fully admitted into the global environmental management establishment, conferring legitimacy to the UNCED process.[13] NGOs contributed to UNCED to a degree unprecedented in the history of UN negotiations. NGOs lobbied at the official process, participated in Prepcoms and were even admitted in some countries' delegations, a novelty which was rendered possible by resolution 44/228 calling for "relevant non-governmental organizations in consultative status with the Economic and Social Council to contribute to the Conference, as appropriate."[14]

In addition, during UNCED, NGOs organized in Rio a meeting which ran parallel to the official governmental conference. The "Global Forum," which gathered about 30,000 people, represented 760 associations, among participants and visitors, in a sort of "NGO city." During one week, the Global Forum became home to environmentalists and social activists, to Indians and ethnic minorities, and to feminists and homosexual groups, all united to "save the earth." NGOs organized many demonstrations protesting against the modest results of the official summit and elaborated their own agenda for improving environmental protection worldwide. Yet, in the eyes of some observers, NGO efforts tended to become coopted by larger and richer groups from advanced countries, which had more means, not only financially but also in terms of organizational, scientific and research capacity, to promote their own views (Chatterjee and Finger 1994).

In the end, NGOs decided that they would sign, in Rio, NGOs "treaties" on all the issues being discussed at the UNCED official meeting. The main activity at the Global Forum was then the "treaty negotiation" process, just like at

the official forum, a process which proved to be very disappointing, as the same North-South conflicts that were blocking UNCED tended to separate northern and southern NGOs. Ultimately, the NGO treaty process was little more than a pantomime of real diplomacy, and ultimately, the treaties agreed upon, negotiated among a couple of dozen NGOs, had a very modest impact on the future of NGO activities.[15] The representation at the Global Forum was also very unequal, illustrating differences in means between northern NGOs, very present, and southern NGOs. Asian, and above all, African NGOs, were severely under-represented. Differences in associative traditions and language barriers also explain the hegemony of Anglo-Saxon organizations at the Global Forum. In the end, influential NGOs decided to concentrate their efforts on lobbying the official conference.

The Earth Summit in 1992 thus represented a real moment of acceleration for NGO activities, as it allowed some of them to have a better idea of what their counterparts were doing in other parts of the world, and was the base for establishing cooperation projects and partnerships among organizations. Yet while NGO efforts illustrated by the Global Forum aimed at uniting NGOs worldwide, the green movement came out of Rio appearing even weaker and more fragmented, with the polarization between "realist," co-operative NGOs on the one side and "radical," transformative NGOs on the other.

Finally, the "sustainable development" approach also suited the interests of some governments in the Third World which are primarily committed to economic development and sought through UNCED to obtain concessions in financial and technological terms in exchange of their support for environmental management. Some Third World countries are still marked by a "developmentalist" ideology in which economic development comes before all else. In addition, resource rich countries such as Malaysia, Indonesia, or Brazil, have traditionally had a vision of unending and expanding frontiers, in which land and natural resources are unlimited and no constraints are seen to exist on the use of resources. As a result, they were unwilling to accept the elaboration of international regimes aiming at limiting their sovereignty over the exploitation of natural resources.

The issue of sovereignty had long been a major source of tension during international environmental negotiations. As long ago as the Stockholm Conference in 1972 developing countries had pressed for the inclusion of a specific principle on the topic. Principle 21 of the Stockholm Declaration stated that "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction." The same debate arose when UNCED was convened, and in the end the sovereignty principle as in stood in the Stockholm Declaration's Principle 21 was included in the Rio Declaration.[16]

In addition, a guarantee that economic development would continue to be the priority on the international agenda was an essential element for developing countries. The reaffirmation of the right to development, and of the sovereignty principle, ensured in Rio, were then the two elements that made agreement at UNCED possible for the Group of 77. The alliance between environment and development could then become official. As described by the vice-president of the International Institute for Environment and Development (IIED), "it has not been too difficult to push the environment lobby of the North and the development lobby of the South together. And there is now in fact a blurring of the distinction between the two, so they are coming to have a common consensus around the theme of Sustainable Development" (World Commission on Environment and Development 1987, 64). Yet to fully understand the nature of this consensus around sustainable development, one last actor needs to be introduced. The actor whose vision shaped most fundamentally the content of this consensus and the real winner of Rio, the business and industry sector, and in particular transnational corporations.

The Influence of Business and Industry

Throughout this process of consensus formation, business and industry exerted a structuring influence. They succeeded in making their view hegemonic, and ended up being considered post-Rio as a major social actor providing solutions to the global ecological crisis. As influential economic agents, transnational corporations (TNCs) have activities that directly impact on the situation of the environment. TNCs have been a constant target of NGOs, which point out their preponderant role in environmental degradation. Several public campaigns and boycotts have been organized to draw the public's attention on the issue and force TNCs to comply with legislation, adopt higher environmental standards or change production processes.

On the issue of tropical deforestation for example, NGOs have pointed out that corporations such as British Petroleum, Shell or Mitsubishi bear a large responsibility for forest devastation worldwide. Already in 1989, *The Sunday Times* directly accused British Petroleum and Shell of contributing to the depletion of the Amazonian rainforest in Brazil.[17] More recently, the Rainforest Action Network (RAN) accused Mitsubishi, together with its subsidiary Meiwa, of being "the greatest corporate threat to the world's tropical, temperate and boreal forests." RAN accuses

Mitsubishi of illegal logging, transfer pricing, tax evasion, violations of pollution standards, anti-trust activity, violation of native land claims, and employment of illegal aliens.[18] Yet despite evidence of the role of corporations in environmental degradation, the issue was scarcely discussed and questioned during the UNCED process. There is, it is true, a chapter in Agenda 21 dedicated to the role of business and industry. Yet the document does not in any way blame business for its major contribution to the ecological crisis. Agenda 21 contents itself with providing guidelines to firms in order to help them improve their environmental records.

But this is not to say that business and industry were absent or uninterested in the negotiation. On the contrary, large corporations were very active in the UNCED process, and even before it. As early as 1984 a World Industry Conference on Environmental Management (WICEM I) had been organized in France to recommend actions to include environmental concerns in industry planning. WICEM II, which took place in 1991, adopted sustainable development as its main axiom. The corporations agreed that there should be convergence, and not conflict, between economic development and environmental protection, and launched the Business Charter for Sustainable Development. In 1990, the Business Council for Sustainable Development (BCSD) was created under the chair of the Swiss industrialist Stephan Schmidheiny, personal friend of Maurice Strong (UNCED's Secretary General) and his special adviser for business and industry during the UNCED process. The BCSD was created as a group of 48 chief executive officers of corporations from all regions of the world, some of them with a rather negative environmental record, including Chevron, Volkswagen, Nissan, Nippon, Mitsubishi, Dow, Shell, CVRD, Aracruz, and Axel Johnson. The BCSD was closely involved in the preparation of the Conference, and, through Strong, had special access to UNCED's Secretariat. As a result, after Rio, corporations became "partners in dialogue," and their vision of sustainability became the dominant vision. According to Chatterjee and Finger (1994), corporations shaped the very way environment and development are being looked at: business and industry's worldview came out of Rio as the solution to the global environmental crisis and no longer as its cause.

In the words of the BCSD, "the cornerstone of sustainable development is a system of open, competitive markets in which prices are made to reflect costs of environmental as well as other resources. When viewed within the context of sustainable development, environmental concerns become not just a cost of doing business, but a potent source of competitive advantage. Enterprises that embrace the concept can effectively realize the advantages in more efficient processes, improvements in productivity, lower compliance costs, and new market opportunities." Thus, by creating competitive advantages, environmental concerns can provide corporations with new market opportunities and be the source of new profit. Finally, business sees the new era of global development as the era of market efficiency. "It is time for business to take the lead," says Schmidheiny; "change by business is less painful, more efficient, and cheaper for consumers, for governments, and for business themselves. By living up to its responsibilities, business will be able to shape a reasonable and appropriate path toward sustainable development" (Schmidheiny 1992, 28-30; Chatterjee and Finger 1994, 122-8). The ecological crisis perceived in fact by business not as a real crisis but rather as a set of adverse and controllable side-effects of development. Hence it is to be solved via increased efficiency which is to be achieved not through government regulation, but through open markets with a new concern for internalizing externalities.

Today, the BCSD has become the WBCSD (World Business Council for Sustainable Development), under the chair of Börn Stigsen. It now has 125 members representing companies such as British Petroleum, Ciba Geigy, Nestle, Monsanto and the Western Mining Corporation. The WCSD is said to have led industry input into the UN Commission for Sustainable Development and UNCED's 1997 review, revealing the emergence of corporate environmentalism as a driving force of global environmental management.[19]

As stressed by Karliner (1997), after Rio, global corporate environmentalism has helped build a public image of transnational corporations as the world's responsible global citizens, setting the terms of the debate along lines favorable to their interests. In the process, corporate environmentalism has partially neutralized efforts — ranging from popular environmental movements to intergovernmental treaties and conventions — that pose a threat to their activities. While before Rio the environmental movement used the system to advance its goals, now the system has appropriated the environmental discourse and is using the environmental movement.

This new strategy has meant increased efforts by corporations to increase cooperation with other environmental actors, in particular with the environmental movement. As noted by Bryant and Bailey (1997, 120), TNCs have sought to cultivate links with moderate NGOs in order to neutralize the threat posed to business from environmentalists. Actually, some NGOs today depend on TNCs for financial support. Stauber and Rampton (1995) observe that this process of funding NGOs and cooperating with them is part of a larger attempt to divide-and-conquer the NGO sector by winning support among moderate NGOs while attacking radical NGOs which campaign against TNCs' activities. Moderate NGOs and TNCs became partners in the international environmental establishment and now work together in the system of global environmental governance.

From Rio 92 To New York 97:

The Rise And Fall Of "Global Environmental Management"

UNCED's Review Five Years after Rio

Five years after Rio, as foreseen at UNCED, the review of UNCED's implementation culminated with the June 1997 New York Summit, often referred to as "Earth Summit II." Earth Summit II's official name is UNGASS, United Nations General Assembly Special Session. During UNGASS, five years of work of the Commission on Sustainable Development (CSD) were presented, including a report by the Secretary-General assessing the progress achieved in the implementation of Agenda 21 and recommendations for future action and priorities.[20] UNGASS was carried out at the highest level of political representation — Heads of State and Governments — and, as UNGASS itself said, aimed to "re-energize our commitment to further action on goals and objectives set out by the Rio Earth Summit."[21]

A new energy was indeed necessary: the main outcome of the meeting was the public recognition of the failure of international efforts to promote long-term sustainability. Yet it only adopted a document, the "Program for the Further Implementation of Agenda 21," and did not produce a political statement or binding commitments needed to reverse unsustainable trends.[22] The text acknowledges that, five years after UNCED, the state of the global environment has continued to deteriorate, and reviews the situation in all areas of action.

It notes progress in institutional development, international consensus-building, public participation and private sector actions, which have allowed some countries to curb pollution and slow the rate of resource degradation. Yet, overall, trends are worsening, polluting emissions have increased, and marginal progress has been made in addressing unsustainable production and consumption patterns. Inadequate and unsafe water supplies are still aggravating health problems, the situation of fragile ecosystems is still deteriorating, and non-renewable resources are used at an unsustainable rate. Despite progress in material and energy efficiency, the report concludes that overall trends remain unsustainable.[23] The document then reviews progress in all sectors and issues, inter alia, fresh water, oceans and seas, forests, energy, transport and atmosphere. Finally, it recommends means of implementation and adopts a program of work of the CSD for the next five years, with a commitment to ensure that the next comprehensive review of Agenda 21 in 2002 demonstrates greater measurable progress in achieving sustainable development.

Interestingly enough, all these trends are examined within the framework of economic globalization. The very assessment of progress made since UNCED starts by highlighting that the five years elapsed since then have been characterized by the accelerated globalization of interactions among countries in the areas of world trade, foreign direct investment and capital markets. The document recognizes the unevenness of the globalization process, stressing that marginalization and income inequality is increasing in some countries as well as within countries and that unemployment has worsened in many countries.

Yet it is believed that globalization presents new opportunities and challenges. The report notes that a limited number of developing countries have been able to take advantage of those trends, attracting large inflows of external private capital and experiencing significant export-led growth and acceleration of growth in per capita gross domestic product. The view is thus that all countries could take advantage of the globalization trend. It is not perceived that only a few countries, due to specific conjunctural conditions, including interest rates and the monetary situation for example, can attract the volume of FDI necessary to feed the high growth rates praised in the document. The conceptual link with economic globalization appears as somehow flawed. It is not mentioned that significant export-led growth and the acceleration of growth in per capita GDP, if not controlled by an effective system of environmental protection, might be responsible for the worsening of overall trends for sustainable development.[24]

In addition, though the text perceives unsustainable patterns of production and consumption as the major cause of continued deterioration of the global environment and observes that unsustainable patterns in the industrialized countries continue to aggravate the threats to the environment, only very vague actions and guidelines are adopted to change them, such as recommending the internalization of environmental costs, developing indicators, promoting efficiency, information, technology, and the role of business in shaping more sustainable patterns of consumption.[25] No binding commitment to deal effectively with consumption patterns or to establish sustainable production and consumption strategies has been adopted, and the role of actors who tend to promote unsustainable production and consumption patterns, such as business, is actually strengthened.

As well as consumption and production patterns, another distorted linkage to structural economic conditions is made with the recognition that as a result of globalization, external factors have become critical in determining the success or failure of developing countries in their national efforts. It is rightly observed that environmental protection can only be

promoted through a shift in the international economy and the establishment of a genuine partnership in order to achieve a more equitable global economy. Yet the idea is that the way to make all countries, in particular developing countries, benefit from globalization is through a combination of trade liberalization, economic development and environmental protection. It is believed that the international trading system should have the capacity to further integrate environmental considerations and enhance its contribution to sustainable development, without undermining its open, equitable and non-discriminatory character.[26] The text limits itself to recommendations to implement the Uruguay Round and promote trade liberalization.

The reality of the present international trading system, a system which promotes discrimination against developing countries, consolidates global disparities and supports unsustainable practices not only in terms of consumption and production but also encouraging transport and pollution and shift from traditional cultures, is not seen as contradictory with the goal of long-term sustainability. With respect to transport, the text notes that the transport sector and mobility in general have an essential and positive role to play in economic and social development, and transportation needs will undoubtedly increase. It also observes that, in the future, transportation is expected to be the major driving force behind a growing world demand for energy. The document accepts that present trends are unsustainable, and adopted recommendations to make transport become more sustainable and mitigate its negative impacts. Yet the document fails to recognize the major cause of transport's expansion, namely, trade liberalization, which encourages production to relocate on the base of a traditional government subsidy to transports or allows for products originating at the other end of the world to be cheaper than products produced a few miles from the consumer. The fact that the whole globalization project is based on the continuity of cheap transport is not discussed.[27]

Generally speaking, UNCED's review was critically received at all levels, being criticized both by diplomats, NGOs and by the press. Ambassador Razali Ismail of Malaysia noted that the compact achieved at Rio had eroded along with much of the high-profile attention to sustainable development generated by UNCED. And the Earth Negotiations Bulletin, a publication of the International Institute for Sustainable Development, noted that "in 1992 one could scarcely escape the news of UNCED and/or the environment in the media. This is not the case today... In international relations, perceptions are everything, and if UNGASS is ultimately billed as a non-event it will not bode well for the future of sustainable development or the UN in general during this critical time of its reform."[28] Most of the world's press was unanimous in condemning the failure of the New York Summit. The French newspaper *Libération*, for example, noted in its article "The Earth Summit goes round in circles" that the New York summit closed on an acknowledgment of impotence.[29]

Not only did the conference show the little progress accomplished in five years, it also failed to commit governments to significant concrete action and to provide means for implementing Agenda 21. No commitment was taken to achieve the goal of 0.7 % of GDP going to ODA, considered necessary to move towards sustainability. Development assistance today does not exceed 0.3% of GDP, on average, and, in the case of the United States, it was only 0.1 % in 1995.

The US was also the target of much criticism for failing to commit to effectively fighting global warming and to accept concrete reductions in levels of greenhouse gas emissions. At the end of the climate negotiations, no legally binding commitments to target and timetables emerged, and the conference only produced a watery compromise to seek satisfactory results at the then forthcoming Kyoto Conference on Climate Change, which took place in December 1997.[30]

In short, on most major issues at stake, New York 1997 represented a backwards step in relation to UNCED's outcomes. NGOs speak of a scandalous betrayal of the Rio promises and of an utterly shameful outcome from Earth Summit II.[31] The reality is that the world has changed since Rio, and this change has a name: globalization. The Rio 1992 bargain was based on the commitment by developed countries to provide increased financial resources through ODA and technology transfer to help developing countries move towards sustainability. The implementation of UNCED's agreement was in a sense made dependent upon this aid. However, since Rio, ODA levels have been declining and the private sector has become the major agent of change. Government spending is being cut and state reforms are being carried out worldwide, often reducing not only ODA but also domestic environmental budgets. At UNGASS 1997, developing countries through the G77 tried to obtain a recommitment from the North to UNCED's bargain, including an increase in financial flows, technology transfer and an international economic system more favorable to developing countries. Yet today, as foreign investment replaces overseas development assistance in amount and frequency, UNCED's bargain seems politically outdated, and, as a result, its implementation appears highly jeopardized.[32]

Finally, at the level of NGOs, the fracture among environmentalists is today stronger than five years ago. True, NGOs did lobby the CSD and try to influence the official negotiation process. Indeed, NGOs achieved unprecedented access to the intergovernmental process, with Greenpeace and the Third World Network being allowed to make

speeches before the General Assembly. However, most of them had given up the idea of having a unified position on all environmental matters, and no "Global Forum II" was organized in New York, only an inappropriately named "Global Gathering" took place.

The Limits of Global Environmental Management

Although steps have been taken between Rio 1992 and New York 1997 in the direction of the globalization of environmental protection, the world seems to be further away from sustainability today than it was then. With environmental globalization and the consensual concept of sustainable development, the perception of an ecological crisis, or at least of ecological limits to development, appears to have vanished: acting for environmental protection increasingly tends to be seen as a technical problem, the task of increasing efficiency and of better using resources such as science, technology, information, capital, and institutions. The cause of environmental problems is no longer perceived as linked to industrial development and ever-increasing material accumulation, but it has become the very existence of human beings. Environmental problems are understood as unavoidable, as side effects of human activities, and efforts are then directed at solving these problems.

Indeed, global environmental management and sustainable development can be seen as "problem solving" concepts, in Robert Cox's terminology, as they only represent a strategy to allow the pursuit of present lifestyles and standards.[33] Following Strange's call for a critical International Political Economy and the need to address the question of "who gets what, how and why," the analysis of the evolution of the system of global environmental management has revealed that it tends to strengthen the mechanisms of exclusion and inequality (Strange 1988). Global environmental management and sustainable development tend to be uneven concepts, as they do not aim at promoting the correction of global disparities. They attempt to offer a universal framework in which the global society is the unit of analysis and a large share of the blame for environmental degradation rests on the Third World. Instead of stressing affluence, over-production and over-consumption in advanced countries as the main causes of environmental degradation, it tends to suggest that problems arise from poverty. Environmental degradation is transformed from a problem of affluence into a problem of poverty. The responsibility is shifted from major polluters and industrialized countries' abuses to all inhabitants of the planet. For Chatterjee and Finger (1994), the only different element in this approach is that development is now looked at from a global perspective, making the development discourse universal.

And the New York Summit represented a step further in that direction, asserting the desirability of the globalization process and underlining its beneficial aspects. It also consolidated the role of business and industry as privileged partners of the United Nations, establishing permanent contact and consultation on environmental issues. The regulatory situation relating to TNCs and business in general has worsened greatly in the past five years (Khor 1997). Already in 1992, the US government successfully pressured for downsizing the UN Center on Transnational Corporations (UNCTC), which had been set up to monitor the social, economic and environmental impacts of corporate investment in developing countries. Today, the UN is considering cutting a sub-group of the UN Human Rights Commission which addresses the impacts of corporations on a broad spectrum on rights issues. The main international initiatives and institution for establishing guidelines for the behavior of corporations, which could together lay down a code of obligations and rights of TNCs and states, have disappeared.

In their place has come a strong and growing opposite trend to reduce and remove regulations that governments have over corporations, to grant them increased rights and powers, and to reduce the authority of states to control their behavior and operations. The Uruguay Round for example has already granted far higher standards of intellectual property rights protection to corporations, thus facilitating further their global monopolization of technology and ability to make profit through higher prices. There are also strong pressures from Northern governments at the World Trade Organization to grant foreign companies the right of entry, establishment and national treatment in all WTO member states (Khor 1997).

In addition, the partnership between the UN and global corporations seems to have been further strengthened in the past two years. In part due to the difficult financial and political situation in which the UN finds itself as a result of the US government's refusal to pay the US $1.6 billion it owes, the UN is now openly seeking political and economic support from corporations. At the last Davos Economic Forum in Switzerland, UN Secretary General Kofi Annan called for a human face to the global market and challenged business leaders to adhere to universal values defined by the UN and contribute to global environmental protection, indicating a broader trend of growing UN collaboration with transnational corporations.

Recently, the United Nations Development Program (UNDP) has solicited funds from global corporations with poor records on human rights, labor and the environment, such as Dow Chemical, Citibank and Rio Tinto Plc, in exchange of special UNDP sanctioned logos for use by

corporate sponsors. Called the "Global Sustainable Development Facility (GSDF)," the plan calls for corporate sponsors to funnel donations to a separate entity which they will manage. In the words of the UNDP, the GSDF "brings together leading global corporations and the UNDP, to jointly define and implement a new facility to eradicate poverty, create sustainable economic growth and allow the private sector to prosper through the inclusion of two billion new people in the global market economy."[34]

According to the internal memo, sponsors will benefit from the advice and support of UNDP through a special relationship, allowing corporations unprecedented access to UNDP's network of offices, high level governmental contacts and the knock-on effects of its reputation. The plan, revealed through a leaked internal UNDP memo, has been heavily criticized by observers and NGOs, who warn that the interests of global corporations are often at odds with the basic economic and social needs of the world's poor and the values of human rights and environmental protection the UN is meant to protect. According to Ward Morehouse, President of the US Council on International and Public Affairs, the UN should be monitoring the human rights and environmental impacts of corporations in developing and industrialized nations, not granting special favors... Increasing collaboration will lead to a reluctance to criticize corporations which are central players in the human rights, environmental and developmental dramas unfolding every day across the globe.[35]

To conclude, the UN and international organizations in general seem to be moving towards the adoption of a market-oriented global model of environmental governance, which sees economic globalization as a positive and integrative process. The key actors of economic globalization, transnational corporations, are taking the leading role and consolidating their influence on the system of international environmental governance. With the adoption of this project of global environmental management, one particular understanding of the world, the one promoted by business and large corporations in Western affluent societies, becomes hegemonic and appears to be universal (Shiva 1993). Environmental concerns have been incorporated as a mere dimension of the "globalization project," understood in McMichael's definition as "an emerging vision of the world and its resources as a globally organized and managed free trade/free enterprise economy pursued by a largely unaccountable political and economic elite" (McMichael 1996, 300). This project advocates a universalized model of production, of consumption, and thus of dealing with problems of environmental protection resulting from these activities. By assuming its universality, it tends to marginalize other knowledge and other solutions to problems of environmental protection. Interestingly enough, it was unanimously recognized that the most positive result and follow-up of UNCED was without doubt realized at the micro-level, within the Local Agenda 21 framework. In an effort to implement Agenda 21 locally, social groups have worked together with local authorities to make sustainable development a reality at the local level, often on a truly participatory basis and reflecting grassroots concern and involvement.

From a critical point of view, global management's failure, exemplified at the New York Summit, was not entirely unexpected. Indeed, the global management approach inspired by business perspectives and propagated by the international development establishment tends to strengthen the globalization process at work today, failing to counter its effects in terms of social exclusion and environmental destruction. It tends to weaken social protection and environmental protection in the name of economic efficiency (McMichael 1996). It stands at odds with the commitment to social change and to equity that lies at the root of a critical, political economy view of global environmental politics as inserted within the dynamics of economic accumulation and social structures. The question of the ownership of natural resources, for example, is not addressed. However, environmental problems in the South are often linked to problems of resource ownership and equity.[36] Sustainable Development as defined in Rio and reasserted in New York has been practically translated into technocratic responses to what are in reality political problems.

Conclusion

The purpose of this article was to analyze and evaluate the process of "mainstreaming" of environmental concerns. Recalling the radical and transformative origins of the ecological project, it has provided evidence that environmental concerns have been remodeled by the joint action of technocratic environmentalists, the international UN-related development establishment and business and industry sectors. Examining the results of international cooperation, the article has questioned the nature of the sustainable development consensus, a consensus deeply marked by the growing access and influence of global corporations on UN activities. Today, market-oriented perspectives to environmental problems seem to be prevailing over more transformative views, especially at the international level, within the framework of international organizations and institutional agreements.

The article has suggested that the mainstream approach to sustainable development tends to reduce ecology to a set of managerial practices aiming at resource efficiency and risk management. In doing so, it tends to address a civilizational impasse as a mere technical problem (Sachs 1993). The

mainstream approach proposes that environmentalists should operate using the language and the worldview of Western economics in approaching ecological concerns. Instead of designing cultural and political limits to development, the project of "global environmental management" tends to become part of a technocratic effort to sustain industrial development in the age of economic globalization. Environmental protection, together with democracy, human rights and free market economics, becomes a universal consensus, a universal consensus which, as Baudrillard remarks, arouses suspicion, since it is about values that have become devalued, values becoming emptied at the very moment of their hegemony (Huysmans 1995). Environmental concerns become just another element in a process leading to global uniformity, a uniformity of cultures, lifestyles, mentalities, but also of relationships with nature (Sachs 1993; Latouche 1996).

This market-oriented agenda may provide a starting point for dealing with global environmental problems. The documents, which emerged from international environmental negotiations from Rio to New York, replete with inconsistencies, represent a complex mix of disagreements, hopes and compromises. One may concede that conventions and obligations reflect the need for government negotiators to find the minimum agreeable grounds to initiate a large open-ended process on major environmental issues. In this sense, they only produced a general framework for negotiations, steps on the way to building international regimes. They do not form a series of real commitments representing an effective consensus on how to deal with global environmental issues. Yet considering the amount of time, energy and resources invested in this process of international environmental regime building, one might have hoped for more concrete, positive results. The failure of the present framework to effectively promote sustainability, which became evident in the 1997 New York summit, is recognized even by one of the major promoters of this path, Maurice Strong, ex-secretary general of UNCED, today President of the Earth Council. For Strong, unfortunately, the economic, social and demographical forces that lead to unsustainable development still prevail. Strong sees the lack of political will from governments as the main cause of this failure.[37]

The present framework appears to contain many contradictions that limit the ability of the international and national communities to solve satisfactorily environmental problems. Adopting an international political economy perspective, this article has argued that the main problem that international efforts to protect the environment have to address is the issue of the impact of economic globalization. Economic globalization has in a sense helped to create conditions for the development of policy mechanisms and institutions that will universalize and promote the concept of "sustainable development." Global change is exerting a structuring influence on the redefinition of environmental politics.

However, the kind of sustainable development being promoted seems to represent more the consolidation of a global project of "environmental management" than a real shift away from destructive practices. Globalization is consolidating a market-friendly view of sustainable development, a view that gives priority to the sustainability of "global growth" and to the correction of environmental damage. This tends to be carried out at the expense of the competing alternatives and participative view of sustainable development as stressing not only development but also social equity and decentralized participation. The "globalization project" has shaped and redefined both the content of environmentalism and environmental policies and structured the international political economy in a way that makes sustainability more difficult to achieve.

Endnotes

1 "Mainstreaming the Environment" is the title of the 1995 Report prepared by the World Bank's Environment Department. 1995. *Mainstreaming the Environment. The World Bank Group and the Environment since the Rio Earth Summit*. Washington: The World Bank.

2 As Richard Smith observes, this is the content of the emancipatory critique embedded in Weber and developed in Beck and Giddens. See Richard J. Smith (1996, 29,44).

3 Another well-known typology of green movements is Andrew Dobson's who differentiates between "environmentalism" which does not call for fundamental transformations in patterns of production and consumption, and "ecologism" which calls for radical changes in social and political life. See Andrew Dobson (1990, 13). I personally find it useful to stress the differences between "deep ecology," in which the focus is on the ecosystem, and "social ecology" which remains humanist.

4 This section will only introduce deep ecology. For more on the deep ecology movement and its philosophical foundations, see for example, Jonas, H. 1990. *Le Principe Responsabilité*. Paris: Editions du Cerf; Naess A. 1986. The Deep Ecological Movement: Some Philosophical Aspects. *Philosophical Enquiry*, vol. VII; The Deep Ecology Movement: A Review, In *Environmental Review*, n°9. For a critical appraisal of deep ecology, see Luc Ferry (1992-20, 114-5, and 240), and Carolyn Merchant (1992), chapter 4.

5 It should be noted that Greenpeace, although influenced by these ideas, is not a pure "deep ecology" group, its domain of action does cover all topics relevant to environmental protection, all aspects of economic policy such as trade and environment or multilateral funding institutions, and is based on comprehensive scientific and policy analysis of current issues. Yet Greenpeace remains a very particular type of NGO, focusing on catching images and shocking actions.

6 An organization like the World Resources Institute (WRI) is a good example of a mainstream, 'reformist' rather than 'transformative' NGO. Jessica Tuchman Mathews, WRI's vice-president, believes that there is an enormous horizon of potential that comes from reinventing technology on nature's example that can allow us to grow — and the world must grow. For her, our policies are so bad now that one can see a lot of room for improvement. Jessica Tuchman Mathews, interviewed by Steve Lerner (1991, 37-8).

7 It is not my aim to cover the whole UNCED process nor describe outcomes in detail, but rather to provide enough elements to give an idea of the nature of the "global bargain" reached in Rio and its implications for the way environmental protection was to be pursued after UNCED.

8 The decision to launch UNCED was made official in December 1989. See United Nations General Assembly (1989) "United Nations Conference on Environment and Development." Resolution 44/228, New York, December 22.

9 The Group of 77, which today has over a hundred and twenty members, was formed during the first UNCTAD (United Nations Conference on Trade and Development) in 1964.

10 The analysis of the negotiation process is based on interviews made with diplomats and observers during the Rio Summit in June 1992, and at UNCED's secretariat in Geneva in July 1992, and participation in the Project on International Negotiations at the International Institute for Applied Systems Analysis (Laxemburg, Austria) between June and September 1992. Finally, details are taken from UNCED-related publications and from the *Earth Summit Bulletin*, the *Earth Summit Times* and *Crosscurrents*, several issues.

11 As stressed by the European Commission in its Report for UNCED, "integration is a crucial objective in Community [now Union] environment policy, not just because it is the embodiment of a Treaty obligation or a tool for environmental protection per se, but also because it is the linch-pin in the process of establishing sustainable social and economic development patterns. Environmental considerations are therefore becoming an integral part of many — and, ultimately, all — Community policy areas." European Commission (1992).

12 In the words of Peter Haas(1990, 384), epistemic communities refer to a "specific community of experts sharing a belief in a common set of cause-and-effect relationships as well as common values to which policies governing these relationships will be applied."

13 The analysis that follows draws from my personal participation in the Rio 1992 "Global Forum," during which extensive interviews with activists and NGO campaigners were carried out.

14 See United Nations General Assembly, Resolution 44/228, part 2 paragraph 12. According to article 71 of the United Nations Charter, NGOs can be granted a 'consultative status' with Ecosoc.

15 For example, the negotiations of the NGO "debt treaty," which I attended, were polarized between North and South, southern NGOs rejecting all proposals of debt swaps on the ground that the Third World's debt was not legitimate, while northern NGOs pressed for "realist solutions" and privileged environmental considerations over social justice. See Global Forum of Non-Governmental Organizations on Environment and Development, Rio de Janeiro, June 1992, Treaty n°13.

16 See UNCED, Doc. A/CONF.151/6/Rev.1, Rio de Janeiro, 13 June 1992.

17 See *The Sunday Times* June 20th 1989.

18 M. Marx. 1994. Mitsubishi: Giant of the Timber Trade. *SEED links* 14 I, July 1994, 20-1.

19 For an activist view on the WBCSD (and more generally on the role of corporations in promoting social exclusion and environmental degradation), see Corporate Europe Observatory (CEO). 1997. *Europe, Inc. Dangerous Liaisons Between EU Institutions and Industry*. Amsterdam, CEO, 38-9.

20 CSD held five sessions in preparation of UNGASS: during the first session (June 1993) a program of work was adopted, during the second (May 1994) a first cluster of cross-sectorial chapters of Agenda 21 were examined: trade, consumption patterns, major groups, health, settlements, fresh water and wastes. During the third session (April 1995) the second cluster of issues according to the program of work was examined: land resources, deforestation, desertification, mountains, agriculture, biodiversity and biotechnology. The fourth session (May 1996) examined financial resources, consumption, technology, education, inter alia. The last session (March 1997) concentrated on the format and content of the document to be considered at UNGASS. Source: *Earth Negotiations Bulletin* vol. 5 n°82, 1-2.

21 UNGASS was attended by 53 Heads of State and Government, along with ministers and other high-level officials. It aims are stated in: United Nations Department for Policy Coordination and Sustainable Development (DPCSD). 1997. "Program for Further Implementation of Agenda 21 Adopted by the Special Session of the General Assembly," New York, 23-27 June 1997, "A: Statement of Commitment," paragraph 1.

22 The attempt to produce a true Political Statement encompassing concerns about the progress needed in the future failed, and in the end General Assembly President Razali Ismael had to resign himself with including six paragraphs called "Statement of Commitment" at the beginning of the "Program for the Further Implementation of Agenda 21."

23 The aim here is not to present a full account of UNCED's review but rather to sketch out the main trends emanating from the review process and to critically assess it. For more information refer to the UN document.

24 DPCSD (1997), "B: Assessment of Progress Made since the United Nations Conference on Environment and Development," paragraph 7.

25 DPCSD (1997) "C: Implementation in Areas Requiring Urgent Action," paragraph 28.

26 DPCSD (1997), paragraphs 25, 26 and 29.

27 UNCSD (1997), C.2, 'sectors and issues' paragraph 47.

28 See *Earth Negotiations Bulletin* vol. 5 n°82, 13.

29 *Libération* 28-29 June 1997.

30 The Kyoto Protocol of December 1997 represented some progress, as OECD agreed to reduce their CO_2 emissions by 5.2% by 2010, taking 1990 as a basis. Yet the 1998 Buenos Aires Conference, where countries were supposed to define the flexibility mechanisms necessary to achieve the commitments assumed in Kyoto, watered down hopes for a significant curb down in world CO_2 emissions. The Buenos Aires Conference failed to define the above-mentioned mechanisms, due to a great extent to the position of the United States of

demanding that developing countries adopt "voluntary commitments" to reduce their own emissions before taking any further action.

31 A Friends of the Earth activist describes the climate during the Earth Summit II in the following way: "by the end of the week, the UN Secretariat resembled a funeral parlor, with down-in-the-mouth delegates and NGOs mourning the demise of the global partnership and the spirit of Rio. There was talk of *Rio plus 0* and *Rio minus 5*." See Malini Mehra (FoE) 'Earth Summit II'. *Link* 79, July/August 1997, 17-8.

32 Analysis based on the account of UNGASS negotiation process provided by IISD's *Earth Negotiations Bulletin* vol. 5 n 88, 30 June 1997.

33 Robert Cox differentiates between "problem-solving theory," which "takes the world as it finds it, with its prevailing social and power relationships and the institutions into which they are organized," and critical theory, which "stands apart from the prevailing order and asks how that order came about" (1986, 208).

34 See UNDP, 1999, "The Global Sustainable Development Facility: 2B2M 2 Billion People to the Market by 2020. The Private Sector in Cooperation with the United Nations Development Program."

35 Quoted in Transnational Resource Action Center (TRAC)/Corporate Watch, "A Perilous Partnership: The United Nations Development Program's Flirtation with Corporate Collaboration." 12 March 1999.

36 For a view on how the issue of the access to natural resources is a critical determinant in the dynamics of deforestation in the Brazilian Amazon, see V. de Campos Mello, 1997, especially chapters 6 and 8.

37 Strong is quoted in the Brazilian Newspaper *Gazeta Mercantil*, 13th March 1996.

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Community Development From The Ground Up: Social-Justice Coffee

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Abstract

This article examines the fair trade paradigm through a study of the Mexican coffee-producing cooperative UCIRI and the U.S. importer-roaster Equal Exchange. This alternative to conventional trade is a partnership aimed at satisfying the interests of small farmers, coffee roasters, and consumers. Farmers in democratic cooperatives collectively address crop and environmental improvement, organic certification, in-country processing, and the negotiation of contracts with roasters in the North. A portion of profits are reinvested in community improvements. Roasters pay a fair trade price, provide credit, and promote the community development context of the coffee in their marketing. We argue that the process is best understood as a social movement aimed at grassroots development. Roasters are both material beneficiaries and conscience constituents, linked to producers and consumers in a moral economy which promotes social solidarity and enhances the social capital of each sector in the movement.

Keywords: *fair trade, coffee, alternative trade, moral economy, community-based development*

Introduction

Since the early 1980s, a fair trade model of market relations has emerged to challenge aspects of conventional global capitalism. Nowhere is this more developed than in the coffee sector which links peasant producers in Latin America with traders and distributors in Europe and the United States. Small farmers, often members of indigenous communities who grow coffee along with food crops on a few hectares, have organized into democratically-controlled coffee cooperatives so as to seize control of their own economic development. In such organizations, they learn from each other how to improve production and aggregate their harvest for processing and export. With its economies of scale, the cooperative structure allows these farmers to obtain third-party certification of their organic production methods and to secure a premium price over that obtained in the conventional and speculative coffee market. Co-op-owned trucks reduce the expense of local transportation. Growers save on processing costs by using their association's equipment and warehouses. And co-op officials negotiate directly with coffee roasters in the North. At each step in the chain of production from field to packed shipping container, cooperatives use their own labor and capital to capture profit previously lost to such middlemen as truckers, money lenders, brokers, and in-country processors. Farmer-to-farmer systems of crop improvement and cooperative marketing enable participants to improve the quality of their coffee and gain experience in sales, coffee grading, machine maintenance, and accounting. Most of all, cooperative structures allow individuals and communities to direct their own collective affairs, accumulating "social capital" (Coleman 1988, 1990, Ch. 12; Putnam 1993), or what might better be termed "organizational capital" which can be directed toward diverse projects of development. In this instance, social capital takes the form of institutionally-embedded skills and knowledge which facilitate group interaction, community solidarity, and economic efficiency. The income from their enhanced production and marketing sys-

tems lets small farmers remain on their land and improve living conditions through community-directed social and economic projects. Their positive experience collectively addressing the coffee market has opened up a social space in which small farmers can envision and implement their own community development.

These cooperatives market their fair trade coffee directly to importers in the United States and Europe, the major coffee consuming regions. There it is blended, roasted, ground, packaged, and distributed in ways which promote the fair trade identity of the product. The concept of fair trade includes the following:

- Stable, long-term contracts between producers and roaster/importers.
- Prices set at a level that is thought to enable farmers to survive and their cooperatives to accumulate development capital. At present this "fair price" is a minimum of $1.26 a pound for Arabica beans, no matter how low the world coffee price falls, with the additional increment gradually decreasing to zero as the world price rises to $1.65 a pound.
- Premiums for high quality coffee and for organic coffee.
- Advance partial-payments of 60 percent of the contract price paid prior to harvest, when farmers and their cooperatives need it most.
- Democratic control of coffee cooperatives by their farmer-members.
- A commitment to ecologically sustainable production, supported by farmer-to-farmer technical training and the organic premium.
- A program of farmer-controlled economic and social development in producer communities, supported through the fair trade premium price (Greenfield 1994, 6-11; Renard 1999, 336-337).

Package labels, sales brochures, and magazine ads inform customers that the fair trade system in which they are invited to participate returns more of the profit to small farmer producers. In the United States, fair trade coffee was initially sold through a system of community-based cooperative food stores established as part of the social movements of the 1960s. Subsequently, mail order catalogues such as Pueblo To People, which dealt directly with Latin American producers of clothing and crafts and returned more profit to producers than conventional systems based on subcontracting, began to carry fair trade coffee. Distribution systems have since expanded to include wholesale buying clubs organized by church groups, college cafeterias on campuses with strong student organizations promoting ecology and social justice, gourmet coffee bars, and independently-owned supermarkets. Most recently, selected stores in corporate supermarket chains such as Shaws have begun to carry fair trade coffee under the Equal Exchange label.

Within a global system characterized by plantation-grown coffee, speculative commodity markets, and multinational food processors, the fair trade system has carved out a niche. Its alternative marketing practices are in conscious opposition to the conventional coffee trade which commodifies coffee as a uniform product deracinated from the location and conditions of production. The fair trade system rests on an ethically-centered corporate culture which stresses the values of equity to all parties in the commercial transaction, the cultivation of long-term contractual relationships with suppliers, and partial-payments in advance of the harvest to give the producer cooperatives working capital. In contrast to price-based models of consumerism, fair trade labeling and promotional activity encourages coffee drinkers to influence through selective purchasing the conditions under which their beverage is produced. Ultimately, the fair trade system depends on the mobilization of key actors in the North into a movement seeking the sustainability of indigenous and peasant communities in coffee-producing regions as a matter of social justice and human rights; the movement supports cooperative agriculturally-based commmunities as a valued component of cultural diversity.

In Europe, the ethical motivation and initiative for the system rests with faith-based organizations which created the fair trade label, Max Havelaar, first introduced into the Holland market in 1988. Conventional roaster/distributors pay the certifying foundation, Stichting Max Havelaar, for use-rights to its label, or seal, which they attach to that portion of their coffee obtained under fair trade contracts. Roasters negotiate these contracts; Max Havelaar monitors their conformity with fair trade criteria. The advantage of this approach for small coffee producers includes unimpeded access to mainstream coffee roasters and their supermarket outlets (Renard 1999; Motz 1999). The system was constructed through the pressure which a religiously-based social movement in Holland, together with some Dutch political allies, were able to exert against the conventional roasters. The purpose of the movement was to promote self-development in coffee-growing regions through more equitable trade conditions than the unregulated terms-of-trade between North and South were producing.

Prior to developing the label, this movement supported grants to peasant cooperatives obtained from religious groups and administered through Solidaridad, a Dutch ecumenical foundation. Sales of peasant-produced food and crafts were promoted through a system of fair trade shops in major European cities. This retail system, whose major sales item turned out to be coffee, stagnated due to inefficiencies associated with its volunteer shop labor, the inconvenience of

providing coffee through specialized outlets when consumers were using supermarkets for their other food shopping, and a marketing formula which relied on the conscience of consumers but ignored their desire for the highest quality coffee (Renard 1999, 185-186). "I remember my father buying fair trade coffee," a Dutch woman told us, "but it was so bad that we would never serve it to company" (Motz 1999). With the Max Havelaar label in place, major roasters in Holland began to purchase coffee directly from peasant cooperatives under fair trade contract provisions. The concern of the roasters with the prestige of their established brands, combined with the premiums which the fair trade system provided cooperatives for sending first quality coffee, were successful in changing the image of fair trade coffee. More than 90 percent of Dutch supermarkets now carry coffee with the Max Havelaar seal and use of the label has been extended to certify chocolate products, tea, honey, and bananas (Stichting Max Havelaar 1998, 5).[2]

The marketing of fair trade coffee in the United States incorporated the pre-existing fair trade standards and development analysis from the Dutch. But it grew from a smaller organizational base of social justice activists who established the roaster/distributor, Equal Exchange, specifically to bring fair trade marketing to the United States. While focusing and growing through a broad movement concerned with just trade relations with Latin America, Equal Exchange remains the only fair trade roaster of any size in this country. While its initial investors included religious organizations, the impetus for any religiously-based consumer support has remained with the roaster, which has organized a portion of its marketing through Lutheran church coffee hours and buying clubs and continued reliance on Catholic religious orders for investment capital. The organizational structure and culture of Equal Exchange incorporates worker-ownership and control. Along with the opportunity to participate in an innovative entrepreneurial organization, these employees are rewarded with the satisfaction of transnational social solidarity as part of a trade reform movement.

Analysts of progressive social movements in Latin America have concluded that the key to change lies in linking material beneficiaries of that change in the South — peasants, rubber tappers, the landless — with extra-regional players in the North, such as social justice and environmental NGOs, supported by value and identity constituencies (Kaimowitz 1997). In other words, change in the interest of the marginalized is most likely when old social movement forms are allied with new social movement constituencies, with a region spanning both South and North as the context in which these actors can combine their efforts. From this perspective, the relationship between producer cooperatives and Equal Exchange constitutes such a linkage.

Fair trade institution-building linking Mexico and the U.S. faces in two directions. Internally, cooperative structures empower their members — farmers or employees of roasters — to improve their individual skills and collective profit margins. Peasant coffee growers use a portion of the higher price they obtain through the fair trade system to develop the educational, health, transportation, and cultural activities that enhance their collective life. As cooperative members, they can measure their gains against what they experienced as individual market actors and rural residents: poverty and powerlessness without hope of transformation. In the U.S., the fair trade roaster/distributor has adopted a cooperative structure in which established workers share in stock ownership and participate in organizational decision-making which allows worker/owners to reinterpret their careers as "callings" with immediate and transcendent satisfactions (Weber 1958). Within a normatively integrated work community seeking market reform goals, there is space for employees to learn new skills and collectively manage their enterprise. In social movement terms, employees of the fair trade roaster are simultaneously "conscience constituents" working for the good of others — peasant farmers — and "material beneficiaries" of their efforts (McCarthy and Zald 1997). This combination of role satisfactions allows worker/owners to escape the moral alienation of bureaucratic hierarchy found with mainstream employment — what some have called the "take the money and run" ethos (Jackel 1988, 75-100).

Each side, then, commits itself to support a system of coffee production that is organizationally democratic, ecologically sustainable, and sufficiently profitable to enable small farmers to remain on the land with the hope that they can improve their lives. The fair trade paradigm offers coffee producers in the South and distributors in the North the satisfactions that come from linking their efforts in a struggle to improve conditions for small farmers generally and to add a moral dimension to the act of coffee consumption. The alternative trade system is most usefully understood as a social movement that seeks to challenge global commodity markets and alter the motivational assumptions built into the culture of capitalism.

This paper examines the fair trade model by describing a small farmer cooperative in the state of Oaxaca, Mexico, the Unión de Comunidades Indígenas de la Región del Istmo (UCIRI), and the fair trade roaster with whom it does business in the United States, Equal Exchange.

UCIRI: The Peasant Cooperative Model

The Unión de Comunidades Indígenas de la Región del Istmo (UCIRI), a cooperative of more than 2,000 families from three indigenous linguistic groups — Zapotecos de la

Sierra, Mixes, and Chontales — living in a spectacular region of river valleys and mountains north of Tejuantepec in the Isthmus of southern Mexico, is the most fully developed and influential model of peasant cooperative development based on coffee production for the fair trade market. In critical opposition to the economic and political marginalization of Indians in Mexico, UCIRI embodies an integrated community approach to achieve moral and economic development.

Indians in this region have been producing small amounts of coffee since the beginning of the century. Grown alongside crops for family consumption, coffee was the cash or barter crop. Due to their isolated mountainside location, peasants found that land was readily available, with the amount farmed per household limited by the capacity of family labor to between 4 and 8 hectares. But land alone did not bring prosperity. Living in a region with limited access and few economic alternatives, peasant producers had little flexibility in selling their coffee beans. Too poor to purchase animals to transport their beans to processors in the city or to buy hand depulpers to process the beans for storage, they were captive to the cacique/coyote coffee-buying system. Indian communal lands in highland areas difficult to incorporate into coastal plantation agricultural systems and allocated to families for subsistence farming, acted as a non-market provisioning system and ancillary system of coffee production. Like the insufficient ejido lands near the coffee states in Chiapas, upland communal lands in Oaxaca reduced the price of field labor to coastal estates, shifted the risks of a portion of coffee production to small producers and increased the supply of low-cost green coffee to the processing plants owned by the regional oligarchy.

After the Mexican Revolution, the Isthmus zone was dominated by caciquismo, that is to say, a political system where individual leaders who exercised personal power in the interests of a small group, dominated commerce, lent money, and dispensed favors. Caciques with connections in the coastal commercial centers bought coffee and transported it to commercial processing plants in Ixtepec. In addition, itinerant buyers of coffee beans — "coyotes" — brought goods such as clothing, salt, cement and sugar, into the mountains to producer communities to barter for beans. In either case, peasants lacked leverage to bargain on the value of their coffee beans and were exploited.

The socio-economic landscape changed dramatically in 1967-68 when several communities granted a logging company access to major areas in the region. The loggers opened access roads, built bridges, brought in electricity, and constructed a timber landing compound in Lachiviza, partway up the mountainside. While the loggers were forced out ten years later, the infrastructure they constructed had major consequences. Initially, increased access brought in more merchants and coffee buyers. Traditional caciques began to truck both trade goods and passengers between remote hamlets and the commercial centers. The most significant impact, however, was the penetration of the region by national agricultural institutions, beginning in 1973.

The Instituto Mexicano del Café (INMECAFE) had been created in 1958 to regulate the coffee market. In the 1970s, in a campaign to generate increased foreign exchange through greater coffee exports, INMECAFE intensified its efforts in peasant-producer areas. To maximize production, it developed a coffee-support structure that organized peasant producers into associations through which credit was channeled, marketing organized, and technical advice delivered. The system promoted a Green Revolution model in which full-sun varieties of coffee trees were to be densely planted in monocultures requiring chemical fertilizers, herbicides and pesticide applications. To enable farmers to participate in this system where inputs, costs, and risks were increased, INMECAFE provided advances in the form of fertilizer and other chemical inputs or cash to be paid back with the coffee harvest. The harvest was the collateral, and INMECAFE bought it at a guaranteed price. This structure grew rapidly so that by 1990 it encompassed 60% of all small producers, loosening the cacique/coyote grip on the coffee-producing peasantry. By imposing itself as a monopolistic alternative, however, INMECAFE became the target of increasingly militant peasant activism contesting prices and control over the productive process in the early 1980s.[3]

UCIRI traces its roots back to early 1981 when 26 indigenous peasant coffee growers, together with a Catholic missionary team working in the region, met for five days to reflect on and analyze the conditions of their poverty and marginalization. Realizing that they were caught in a cycle of very low coffee prices, unpayable bank debts, insufficient food, and few if any social services, the group decided to find a way to obtain higher prices for their coffee than was possible through either the coyote middlemen or INMECAFE buyers. They made contact with the Asociación de Interés Colectivo (ARIC) Regional, a recently-formed association of small producers in Veracruz, which agreed to sell 35 tons of their coffee. By combining a portion of their harvest with that of ARIC, the Oaxacan peasant producers received a higher export price, although they did have to wait until their coffee was sold to obtain their payment.

Inspired by this initial success, the peasant farmers intensified their organizational activities on both the local and national levels. By the end of 1982, seven communities in the region were involved in the collective effort. At the same time, they joined with ARIC of Veracruz and groups of small producers from other coffee-growing regions to found ARIC Nacional in Mexico City as a vehicle to process and

export their coffee. The following year, in 1983, an assembly of participants from seventeen communities decided to legalize their organization as the Unión de Comunidades Indígenas de la Región del Istmo (UCIRI). After a protracted struggle that entailed several delegation visits to both Oaxaca and Mexico City, the organization was officially enrolled in the Registro Agrario.

For the next three harvests (October-March 1982/83, 1983/84, 1984/85), UCIRI continued to sell its coffee through ARIC Nacional. This experience was both beneficial and difficult for UCIRI members. On the one hand, they received higher prices for their coffee; on the other, they had to handle the shipping, which involved much additional time and labor, and wait a long time for payment. While a few became discouraged and withdrew from the group, most stayed because they valued the collectivity and the future they conceived. In addition, they were learning about processing technicalities and exporting procedures that as simply farmers they had not been aware of (Reyes Avendaño 1994; Martínez Morales 1994; Van der Hoff 1992, 1-83).

During this period, UCIRI was introduced to both the fair trade market and organic production. Representatives of Dutch and German solidarity groups visited UCIRI to discuss marketing of their coffee through the fair trade system. Fair trade organizations not only paid more than prices established on world commodity markets, but operated through annual contracts and long-term relationships. Their contracts were based on the needs of farmers, coffee processors and consumers in a context of compromise and mutual respect. This was a sharp departure from the price system of the conventional market in which commodity prices changed daily in response to production amounts and weather conditions, while speculators amplified price shifts and brokers tried to drive the best bargain they could from producers. By eliminating coffee brokers and contracting directly with the processor/distributors in Europe, the alternative system was able to redistribute some of the transaction effort and profit potential back to the small farmers. Perhaps most important, the alternative trade system guaranteed the price for future deliveries and paid a portion of it when farmers most needed the money, prior to harvests (Reyes Avendaño 1994; De la Rosa Alfaro 1994; Renard 1999, 194-195).

While INMECAFE had attempted to induce small coffee producers to adopt agrochemical production practices, the peasant farmers in this region clung to the natural production methods of their ancestors. In 1984, a European agronomist visiting UCIRI suggested that they build on their natural practices to become "organic" producers. UCIRI members visited Finca Irlanda, a private coffee estate in Chiapas which had initiated the first successful system of organic coffee production in southern Mexico using biodynamic farming methods pioneered by the German social philosopher, Rudolph Steiner. Impressed by this comprehensive system of compost fertilizing and pest control that promised higher yields than the traditional natural system, UCIRI members brought the ideas back to the Isthmus. As they implemented this organic approach, they not only saw their yields improve but they acquired a complex and externally certified technology. As technologically sophisticated producers, they could take pride in their work and resist the designation of failed or incomplete farmer applied to them by proponents of agrochemical modernization. Most of all, the organic system of production was sustainable, a cyclical activity of human and natural interdependence improving both incomes and soil fertility (Martínez Morales 1994; Reyes Avendaño 1994; Martínez and Peters 1994).

In adapting to organic agriculture, UCIRI was also increasing the value of its coffee on the fair trade market. The alternative coffee system occupied a market niche which combined fair dealing with producers with a superior coffee for consumers. Product superiority meant gourmet quality but also and increasingly organic characteristics. Coffee fetching the best price in this market was that which was considered more wholesome and ecological than ordinary coffee; it was grown with compost for fertilizer under the shade of fruit and nitrogen-fixing trees in micro-climates kept moist and weed-free with terraces, mulch, and hand-weeding. Chemical fertilizers, herbicides, fungicides, and pesticides were not applied. Third party inspectors certified coffee grown in this way as organic, and that certification earned the grower a higher price.

With an organic production system in place and fair trade buyers ready in Europe, UCIRI began a struggle with INMECAFE for a permit to export coffee. Large, plantation producers, organized into their own political associations including La Confederación Mexicana de Productores de Café (CMPC) and the Unión Nacional de Productores de Café de la Confederación Nacional de Productores Rurales (UNCP-CNPR), participated directly in the Directive Council of INMEXCAFE (Santoyo Cortés, Cárdenas and Padrón 1994, 108-109), and had an interest in restricting export quotas to large producers. At the same time, INMECAFE's strategy of encouraging small growers to increase their production and the legitimacy requirements of the ruling political party, the PRI, to represent the interests of the peasant sector within a national system of corporate social sector representation, resulted in some export concessions to better organized small producer groups, if only as a co-optive strategy.[4] Direct exporting required more marketing sophistication but promised greater self-determination and income. After a very difficult struggle, they obtained export rights in 1985. With the harvest of 1985/86, UCIRI exported its first coffee di-

rectly to Holland through the alternative marketing system. In order to export, UCIRI established warehouses and a coffee processing facility in the former logging compound at Lachiviza, a community more or less centered in the mountains where members live. Here, coffee beans are sorted by quality, mechanically cleaned, and bagged. After several successful years, UCIRI was able to acquire a second processing plant in the small regional center, Ixtepec, that had belonged to a bankrupt processor whose coyotes had once traveled the mountains of the Isthmus region (Martínez Morales 1994; Reyes Avendaño 1994; De la Rosa Alfaro 1994).

In economic terms, UCIRI is a coffee improvement, processing, and marketing cooperative of small producers. Direct sales to overseas customers through the alternative trade network enhance their returns, increase their working capital, and provide them with partners who affirm their status in positive ways and can offer some political support when that becomes necessary. But more broadly speaking, the production and sale of coffee is part of a comprehensive human and community development project that integrates the economic, the social, and the spiritual. UCIRI's complex vision is reflected in the scope and nature of its projects (Valdivia de Ortega 1994).

Central to this vision is the *trabajo común organizado* — organized communal work — a practice that integrates human development, analysis and collective work. UCIRI began the practice in 1984/85 in order to foster social consciousness and to meet the urgent material needs of the cooperative and its member communities. Its objectives include continuing occupational and cooperative skills formation, establishing committees to implement needed projects, promoting organic coffee production, rescuing and maintaining traditional culture, and moving toward a more just society (Martínez Morales 1994).

The organization's administrative headquarters are in the coffee-processing compound at Lachiviza. Here once a month, delegates from all member communities assemble to discuss issues and make decisions by consensus, then share that information with their respective communities. The delegate assembly appoints members to standing committees, such as health, education, and transportation, and selects technicians and specialists who work with the administration. Day-to-day responsibilities are handled by administrative and vigilance councils, each with four members elected for three-year terms, who work and live in the compound. Since most of the communities are at some distance from Lachiviza, elected officials temporarily give up involvement in the daily lives of their families, making administration something of a community obligation in the older indigenous tradition of civic and religious office-holding. Members of peasant households, officials are invariably male and their families keep their plots under cultivation during their terms of service.

Each locality elects its own administrative committee, vigilance committee, and assembly delegate. In addition, local work committees are formed as needed. At this level, women do hold administrative and committee positions. Each member is urged by the rules of the organization to be an active participant. Members who do not attend meetings can be fined a day of community work, or what their community committee decides.

In a region with few, if any, public services and little access to consumer goods, UCIRI has responded with several significant projects. The cooperative runs a bus which travels the region on a daily basis, transporting passengers and goods among the small mountain communities and to Lachiviza and Ixtepec. Using a warehouse at its Lachiviza headquarters as the depot for consumer goods, it has established a network of cooperative stores in its member communities. It also opened a hardware store in Ixtepec where small farmers can buy tools at reasonable prices, with a discount for UCIRI members. Consistent with its interest in public health and seeking to lighten the burden on women, UCIRI has located cornmills in many of the communities.

In 1994, the organization completed construction of a health clinic at Lachiviza that supports a regional revival in the medicinal use of natural herbs and plants based on a comprehensive notion that health is ultimately located in a relationship correctly linking nature, the community, and the spiritual world. The clinic runs an apprenticeship program which teaches lay health promoters from the various communities to address disease and public health issues. Their approach to health stresses prevention, emphasizing hygiene programs, healthful diets and the construction of dry latrines. Work groups that promote the improved cultivation of corn, beans, and vegetables for household consumption are dispersed in the communities. The clinic also offers on-site emergency medical care and dental care to all at affordable prices.

A critical element in UCIRI's development program is education. It built a secondary school in the mountains, the only one in the region outside the cities, where 25 students live and study agronomy and academic subjects for a 13 month period. Following the school experience, graduates undertake community service work, including agricultural extension. Some individuals have been sponsored by the community for further study outside and have returned to UCIRI as accountants or teachers.

Consistent with the pedagogy of Paulo Freire (1973), the purpose of the school is, in part, an effort to train the region's residents to meet an expanding set of skills needed by the communities. With its own school, UCIRI can make educa-

tion supportive of the larger project of building sustainable, self-administered communities based on agriculture where collective responsibility provides the social insurance and cultural framework for meaningful lives.

UCIRI views cultural activities as an integral part of the construction of community. Every October, before the harvest begins, the families that make up the UCIRI membership gather at the compound in Lachiviza for several days of celebration which combines the sacred with the joyously secular. In the tradition of Mexican flower petal mosaics and Hopi sand paintings, they use the concrete floor of the empty warehouse to create temporary tapestries of multicolored corn, green bean seeds, and coffee beans, a collective art honoring the cyclical flow and mutually interdependent aspects of nature and human community. Other activities include a Catholic Mass, singing, feasting, a basketball tournament, music and dancing.

Integrated into the culture that sustains UCIRI is its members' appreciation of the value of solidarity — the sharing of knowledge and material support with other peasants. In this spirit, UCIRI has worked with and sent technical teams to visit peasants seeking to build similar cooperatives in the Mexican states of Oaxaca, Puebla, and Chiapas, as well as to Guatemala and Nicaragua. It provides ongoing material support by making its facilities available to other cooperatives for coffee processing.

An example of this horizontal outreach is UCIRI's support of the coffee co-operative ISMAM, Los Indígenas de la Sierra Madre de Motozintla, which began to organize in 1985. Like UCIRI, ISMAM started with a meeting of reflection and situational analysis which led these peasants also to conclude that they needed an independent cooperative in which all members participate and develop consciousness. They sent a group to visit UCIRI. In their efforts to support this new cooperative effort, UCIRI agreed to sell ISMAM's coffee. For its part, the newer organization came to see itself as a pilot group that would support other small cooperatives in the Sierra (Sánchez López 1990, 20-45).[5]

Equal Exchange: Fair Trade Partner

Equal Exchange, located near Boston, Massachusetts, is the U.S. trading partner of UCIRI and 12 other small-farmer coffee cooperatives in Latin America. The venture grew from discussions in 1983 among Jonathan Rosenthal, Rink Dickinson, and Michael Rozyne, employees of Northeast Cooperatives, a distributor to community-based food cooperatives in New England and New York. Impressed with the advantages that direct trade between farmers and wholesalers gave both parties, the three decided to use this model to import various foods from Latin America (Greenfield n.d.).

Support for their effort came from the European alternative trade network, centered on Third World crafts and coffee. One of the larger alternative trade organizations (ATOs), Stichting Ideele Import (SII) gave the fledgling Equal Exchange its initial impetus. SII had been importing coffee from Nicaragua, processing it in Holland, and reshipping a portion to Canada for sale; Equal Exchange took on part of that trade, intending to package and wholesale this coffee to retailers in the U.S. as Café Nica. The U.S. had frozen trade with Nicaragua, and the initial shipment from Holland in 1986 was held up in U.S. customs for six weeks while Equal Exchange argued it was a Dutch rather than a Nicaraguan product. This challenge to U.S. policy created political visibility for the new trade initiative among those opposed to the trade ban, and Café Nica became widely distributed in community-based cooperative food stores in the U.S. (Rozyne 1998).

In 1987 and 1988, Equal Exchange participated in international meetings of the ATO network and helped to create the International Federation of Alternative Trade (IFTA), dedicated to "cooperate with poor and oppressed people in the Third World countries to improve living conditions by directly importing their products" and "to educate consumers about the unfairness of conventional trade" (Dickinson 1989).

In its first twelve years, Equal Exchange moved twice into successively larger facilities within the greater Boston area. The expansion of the company was facilitated by alternative sources of capital: socially conscious lenders interested in alleviating Third World poverty, including the Adrian Dominican Sisters. By 1997, capitalization had grown to over $600,000 in shares owned by 114 outside investors to whom the company paid a modest dividend.[6] Twenty-five employees, 19 of them worker-owners, were shipping over 700,000 pounds of coffee annually to food co-ops and other outlets in Canada and the United States, an impressive rate of growth but only a small part of a world fair trade system that linked 17 countries and sold 32,000,000 lbs. of coffee (Equal Exchange 1997; Equal Exchange 1996).

Equal Exchange patterned its mission principles closely after those of IFTA. These include: promoting direct trade with democratically organized small farmer cooperatives; providing advance credit for crop production prior to coffee delivery; paying a fair price for coffee; providing high quality food products; supporting its producers in sustainable farming practices; maintaining itself as a democratically-run cooperative, and developing environmentally sound business practices (Equal Exchange 1996, 9).

The commitment to pay a fair price rather than the world market price for coffee is central to the Equal Exchange mission. IFTA negotiates with coffee cooperatives to establish a

minimum price which applies throughout the ATO world. Taking that IFTA minimum as a floor price, Equal Exchange negotiates annual contracts specifying coffee amounts and prices with its producer partners. When international coffee prices fell to 46 cents a pound in 1992, Equal Exchange paid at least the threshold minimum, which was $1.20 at that time. In 1998 the IFTA price was $1.26 a pound plus 15 cents for organic beans and an additional quality bonus. Equal Exchange estimates that between 1988 and 1992 it paid $750,000 to producers in excess of prices which brokers in the conventional trade would have paid. At times, Equal Exchange claims to be "guaranteeing farmers a living wage for their labor," but this is a difficult notion to measure across various regions; more recently payment is described as "a fair price" (Greenfield 1994; Equal Exchange n.d.).

The second linchpin concept in Equal Exchange's mission is support for sustainable farming practices. This includes promoting organic agriculture to maintain the soils in coffee regions. Third party organic certifiers such as Naturland of Germany are hired by producers to confirm the validity of the organic claim. Beyond this, however, Equal Exchange defines sustainability as a production system in which peasants and small-scale growers work their own land and market through cooperatives which pursue comprehensive community development plans. Sustainability must be social and economic, as well as biological (Equal Exchange 1994, 2; Greenfield 1994, 6-11).

Equal Exchange can be described as a for-profit business with a strong, not-for-profit culture. That culture took shape with the founders' goal of solidarity with Nicaragua and has been supported by the organized fair trade network in Europe and North America with whom the organization sets fair trade minimum coffee prices. It is reinforced by the interests of socially-conscious investors, retailers, and customers. Contacts with farmer-partners are particularly powerful in making the goals emotionally vivid to Equal Exchange employees. The culture has remained consistent and without apparent erosion over the years; there has not been a major shift toward profit taking by the employee-owners who set policy. While pay and benefits have increased, they remain objectively and subjectively modest — in the $20,000 to $55,000 range from bottom to top of the pay scale — for a corporation with sales of $3.6 million. In 1996, the decision was made to invest an additional 10% of pretax profits in a fund to promote education among farmer-partners and other nonprofit activities (Equal Exchange 1996).

Its social justice culture is continually expressed in the organization's publications, its sales literature and its marketing contacts with religious organizations and food cooperatives. The nature and clarity of that culture attracts prospective employees and rewards them with extra-economic satisfactions. Established employees, including the original three partners who retain management positions, have successfully kept the culture alive and transmitted it to new employees.

But also of importance is the worker-owner mode of organization. As a growing company with no clear precedent, Equal Exchange has hired employees who are well educated in the liberal arts — college graduates in Spanish, anthropology, international development — for sales, marketing and design roles, rather than business majors with more technical training. Of great importance in hiring has been the prospective worker's enthusiasm for the company mission. The absence of conventional preconceptions about business on the part of employees and the scope the company provides for individual autonomy within an egalitarian setting have resulted in staff creativity and organizational loyalty. Few have quit, and those that did so for personal reasons such as relocating with a spouse, rather than dissatisfaction with the organization.

Employees see themselves as having grown with their jobs. "I actually started out here in sales," said a Brown graduate in anthropology. "That was the last thing on earth I would have considered doing. But I did it solely to work in this place." After a year and a half in sales, he negotiated directly with his supervisor and arrived at a unique job description consisting of "a third design and marketing, a third doing work in the workplace like being a coordinator for democratic decision making here, or attempting to, then doing work on special projects." He works with 400 churches affiliated with Lutheran World Relief marketing coffee to their fellowship meetings and fundraisers. "I began working with the churches because I believed it would work. The sales department thought it was a waste of time and they were concerned that it would conflict with my sales goals. I did it anyway; it showed some success." Despite believing he could earn twice as much with another company, this worker-owner said, "I just often think to myself there is no other place that I'd be doing this" (Crowell 1998).

Equal Exchange began to buy and process a part of the UCIRI harvest in 1990. By 1996 the company was importing coffee from 12 cooperatives in Latin America and generating 3.6 million dollars in sales (Equal Exchange 1996). The increase in sales results from the effort of Equal Exchange to seek out new partners and to expand its long-term relations with producer cooperatives. Potential partners are recommended by human rights organizations or by existing partners who may have processed and shipped the coffee of a start-up cooperative lacking facilities of its own. UCIRI assisted La Unión Majomut, another Equal Exchange Mexican partner, in this way, as Majomut then did for San Pedro de Cancuc.

While ideologically committed to expanding markets for peasant-produced coffee, the ATO is also a gatekeeper. Equal Exchange visits potential partners to learn about their internal

organization and development plans, examines the reports of third party organic certifiers, and tests coffee samples. "We try to get a quality coffee we can work with in our blends," explains an Equal Exchange marketer (Crowell 1998).

Equal Exchange has formal criteria for evaluating potential partners. These include their degree of poverty and exclusion from access to markets; authentic farmer-member control over the cooperative organization; democratic decision-making; a commitment to sustainable agriculture and land stewardship; a strategy for long term community development; and ecological consciousness. But these may not all be in place and some may dissipate over time. Even a long-standing partnership can be severed if site visits and the reports of objective third parties reveal that the organization lacks true farmer control or is without a comprehensive community development plan. The Ashaninkas Association in Peru was dropped for these reasons in 1993 (Equal Exchange 1993). Most partners are moving toward the model exemplified by UCIRI rather than fully realizing it. Few producer groups have had the time and resources to extend their community development plan to include a chain of rural stores or a healthcare clinic. On the other hand, a women's chicken marketing project, distribution of cement to make the drying patios necessary for organic production, or support for a system of organic agricultural promoters are very positive evidence of a development trajectory.

Not only does a cooperative's commitment to high quality organic production and reliable shipping depend on a comprehensive development plan, so does the longevity of the group. "If these things aren't integrated, and if the only reason they come together is coffee, and for whatever reason the coffee market or the system of coffee trade becomes non-advantageous, then the purpose for this group is gone. Whereas with groups like UCIRI there's a whole network of issues binding them together" (Crowell 1998).[7]

The relationship with producers is not simply economic. Equal Exchange staff members visit these cooperatives, attend festivals, introduce North American church officials and students, and work with human rights NGOs when political repression threatens their members.

The specter of repression, state-led via the uniformed military or state-tolerated in the form of paramilitaries, continues to stalk Equal Exchange's Mexican partners. National governments are often antagonistic when local communities combine movement toward an independent economic base with ideological autonomy (Bookchin 1982, 1987). When an indigenous uprising in Chiapas in January 1994 was followed by a massive militarization of the countryside by the Mexican Army, community life for tens of thousands was disrupted. UCIRI, in Oaxaca, was temporarily occupied by the Mexican Army, while members of Majomut in Chiapas were driven from their communities by the combined action of the Army and paramilitary groups. Equal Exchange issued a press release seeking to contextualize the violence as due to failed conventional development models. It said in part, "Small-scale peasant farmers have never been able to earn enough money to meet their basic human needs" and "when there is no hope, violence may seem to be the only option" (Equal Exchange 1998). The press release went on to cite UCIRI as an example of viable development based on alternative trade and solidarity with North American coffee drinkers. Equal Exchange played a role in informing U.S. citizens about the human rights situation faced by indigenous small farmers in Mexico. But with the model of community-controlled comprehensive development being portrayed by government leaders as insurgent, these public appeals appeared to have little influence on the human rights policy of Mexico.

As an ATO located in the United States, Equal Exchange both adds value to coffee through processing and constructs a critical consumer culture. It handles the tasks of blending, roasting, grinding, packaging, and wholesaling the beans. Because it is a food item consumed on a daily basis, coffee has trade advantages over crafts which tend to be seasonal purchases in the North. But while a demand exists for coffee per se in the United States, the job of an ATO such as Equal Exchange is to create a market for their particular product. Given the regularity of coffee purchases and consumer taste preferences, a roaster/distributor has to provide coffees with consistent flavors and quality that distinguish them from conventional coffee. To do this effectively, Equal Exchange argues, processors have to be located where the product is consumed. Once roasted and ground, coffee rapidly looses flavor unless vacuum packed, so the nature of coffee supports final processing close to the point of consumption. So does the culture of coffee drinking. Roasters must closely follow diverse preferences in roast temperatures, grinds, flavorings, and blend composition. Sales depend on presentation in attractive packages, store display units, and advertising appropriate to the market. "It's better for us to be dealing with that because we can change a roast in the blink of an eye; we can get feedback from our customers and so concentrate on getting as much [money] for their [the growers'] processed green as we can," said an Equal Exchange marketing employee (Crowell 1998).

At an ideological level, distributors in the ATO network generate an interpretive context which frames their products. In Europe, coffee is certified as a fair trade product both by the Max Havelaar coffee symbol and the IFTA Transfair symbol. In the fall of 1998, Transfair certification was introduced in the U.S. This third-party certification will strengthen the credibility of claims made by Equal Exchange in its marketing materials (Dickinson 1998).

Equal Exchange provides its retail outlets with a variety of leaflets and newsletters. An effort is made to reach consumers through literature available at store coffee displays and product descriptions in catalogues circulated by religious and humanitarian organizations which promote fair trade items of many kinds. The goal of this program is to alter the awareness of consumers, teaching them to connect coffee as a commodity with the social context of its production and trade. Through producer profiles, Equal Exchange tries to give a face to its farmer partners and to recast coffee consumption as an act of solidarity with peasant producers. This contextualizing involves organizational cooperation with social justice and religious groups. For example, together with Neighbor to Neighbor and Oxfam America, Equal Exchange sponsored a two week trip which allowed six U.S. college students and three officials from food corporations to visit coffee cooperatives in El Salvador in 1994. It later worked with Global Exchange to send eight U.S. citizens to visit their trade partner Majomut in Chiapas, Mexico, in 1997. In each case individuals embedded in organizations — churches, college communities, food corporations — were selected so they could discuss the social conditions of coffee production with those audiences on their return. In 1997, Equal Exchange initiated a six-month market development campaign in Madison, Wisconsin, in which it used community organizers and newspaper advertising to mobilize an existing network of co-op food stores and social justice and religious organizations to generate pressure on area supermarkets to carry fair trade coffee. In 1999 it initiated a similar campaign in Burlington, Vermont. Taking the form of a social movement, these market development campaigns carry the message that consumers have real power in the marketplace to improve the condition of small coffee growers.

A second ideological focus has been environmental preservation. Shade-grown coffee, unlike full-sun coffee plantations or deforested grasslands, creates a biologically diverse environment essential to North American migrating song birds. Equally important, economically viable small coffee farmers are a social force resisting the commercial deforestation of their lands by loggers or ranchers (Rozyne 1994, 1-3). Both ecological and humanitarian contexts for drinking fair trade coffee have been featured in ads in national environmental and politically liberal magazines, including *The New Yorker, Sierra, The Nation*, and the *Atlantic Monthly*.

Though Equal Exchange makes no positive health claims for coffee, it does present its organic labels as being without the health risks associated with pesticide-sprayed coffee. The drink is presented as a satisfying social ritual, additionally rewarding when the coffee is of gourmet quality and steeped in social justice.

Conclusion

Equal Exchange and its coffee cooperative partners share a perception of an alternative trade model. It combines a strategy of comprehensive community development in the South and an ethical contextualizing of coffee by roasters and consumers in the North. In this model, authentic Third World development is seen as comprehensive; it has interrelating social, economic, political, and spiritual dimensions. Its vehicle is the interactive community embedded in place and history, not an abstract and individuated "economic man." Rather than the volume of economic activity in an increasingly commodified culture, progress is measured in human well-being.

Next, comprehensive community development is understood to begin with an anti-hegemonic exercise of consciousness-raising (Gramsci 1971, 12-13; Freire 1973). Subaltern people who wish to act in their collective interest must first understand the cultural, economic, and political systems which have assigned them their subordinate and marginal place. They can only reach this understanding through action within an interdependent group whose future they can collectively imagine. As consciousness takes form within an organization accountable to its members, it guides actions which affirm personal identity and a conviction that life can be changed through collective effort.

The organizational structure of UCIRI allows its members to reclaim their identity in positive terms as indigenous people, as farmers, and as actors in global trade. Their development model lets them move beyond simply affecting economies of scale in processing their crops. Their aim is a democratic process defining their collective needs as a people determined to remain rooted in their land, even as they renegotiate their place in the world trade system.

Equal Exchange, as a First World ATO, developed as a response to the cultural impoverishment of capitalism — its erosion of social solidarities and its materialist rather than transcendent motivational structure. As an employer, Equal Exchange provides its employee-owners with workplace solidarity based on democratic decision-making and the broader goal of reducing the exploitation characterizing conventional commodity markets. Rather than masking that exploitation with occasional philanthropic donations to Third World peasants, Equal Exchange structures its trade relationship to help its small farmer partners build sustainable communities with diversified economics able to both supply the outside world with coffee and their own members with services and a sustainable environment. From this trade base, small farmers seek to negotiate a more favorable place for peasantries in global markets which would otherwise grind them up.

This task requires that Equal Exchange redefine First World consumer culture from a relationship between purchasers and products to one in which consumers are aware of the social, environmental and cultural conditions under which their products are created. This awareness can add meaning to the lives of consumers, potentially enlisting them in a transnational social movement to promote social justice and ecological sustainability.

The moral economy linking UCIRI with Equal Exchange is the normative expression of a social movement in which organizations in the North and South support a common project which accumulates cultural and social capital. This project seeks to enhance cooperative skills, enrich cultural diversity, and promote a critical awareness of the processes of neo-liberal globalization. Where commentators such as Pierre Bourdieu (1993, 233) saw cultural capital as an attribute of individuals, useful in the social climb within highly stratified societies (Bourdieu 1984), the alternative trade movement suggests another conceptualization: the rooting of individuality within trans-national circles of solidarity and accountability. Social and cultural capital, when they are attributes of workplace and territorial communities, can further the goal of liberating participants from the economic determinism born either from impoverishment or cultural materialism. As an oppositional movement, fair trade seeks to subvert, by example, the broader system of economic integration in which peasants of the South and cosmopolitans of the North have found themselves delinked, deracinated and culturally depleted.

Endnotes

1. E-mail: charles.simpson@plattsburgh.edu; Phone: 518-564-3311 E-mail: anita.rapone@plattsburgh.edu; Phone: 518-564-5220
2. In 1996, more than 14,000 tons of green coffee were imported into Europe through fair trade, up from 11,000 tons in 1995. There are 21 coffee roasters with license agreements with the Max Havelaar Foundation. Sales in 1996 represent 2.8% of the Dutch coffee market, 5% of the Swiss market. Globally, fair trade coffee amounts to over 250 million dollars in sales, and continues to grow (Stichting Max Havelaar, 1998; TransFair USA homepage, 1999, http://www.transfairusa.org/why/coffee.html).
3. Background history is based on Paz Paredes, Cobo and Bartra 1995-96; Van der Hoff 1992, 63-67, 75-79; Guzman 1994; Diaz C·rdenas 1994; Martínez Salazar 1994; Santoyo Cortés, Horatio, Cardenas and Padron 1994, 108-114 and Moguel 1991 discuss peasant dissatisfaction with INMECAFE in terms of its monopoly control, low prices, high administrative costs, and its failure to deliver promised credits.
4. The PRI's co-optive policy toward the peasant sector dates from the Cárdenas presidential *sexenio* of 1934-1940 when more than 20 million hectares of land were redistributed to the poor. The collapse of the International Coffee Agreement on national export quotas in 1988 and the emergence of a "free and unrestricted trade in coffee" (Pendergrast, 1999, 362-3) deprived the Mexican state sector of what was at once a co-optive and discriminatory tool, the allocation of exports within the quota. For a discussion of Mexico's move toward free trade and away from any pretense of protecting the peasant sector from global market competition, see Tom Barry 1995.
5. For an analysis of ISMAM, see Nigh 1997; Hernández Castillo and Nigh 1998.
6. Average interest over the last nine years has been 3.22 percent, but reached a high of 8 percent during the profitable 1996 year. Worker/owners earned a bonus of 11.0 percent of wages in 1995, and can earn up to a ceiling of 20 percent in worker-rebates, varying with company profits (Annual Report, 1995 Equal Exchange).
7. For another perspective, see Nigh 1997.

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Redecorating Nature: Reflections on Science, Holism, Community, Humility, Reconciliation, Spirit, Compassion, and Love

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Abstract

Numerous humans - in my opinion, far too many - continue to live apart from nature, rather than as a part of nature. In this personal essay I discuss various aspects of traditional science and suggest that holistic and heart-driven compassionate science needs to replace reductionist and impersonal science. I argue that creative proactive solutions drenched in deep caring, respect, and love for the universe need to be developed to deal with the broad range of problems with which we are confronted. Simply put, I have had enough. I want the world to be a better place for all of its inhabitants and time is not on our side. I feel a deep sense of urgency and passionate impatience. We are worrying about wildness as it is disappearing right in front of our eyes - as I write and we discuss. Thus, I am willing to open myself to criticism, to be vulnerable for expressing views that are not part of main-stream science. Rather than take a doomsday view that the world will not even exist in 100 years if we fail to accept our unique responsibilities, it is more disturbing to imagine a world in which humans and other life coexist in the absence of any intimacy and interconnectedness. Surely we do not want to be remembered as the generation that killed nature. To illustrate some of my points, I discuss various aspects of translocation studies in which animals are moved about from one place to another in humans' attempts to "redecorate" nature. In these projects interdisciplinary collaboration is necessary and disciplinary boundaries must be trespassed. I also emphasize the importance of teaching children well for their and our futures rest on their developing a deeply-rooted caring ethic. My vision is to create a worldwide community in which humans perceive themselves as a part of nature and not apart from her, in which humans who are overwhelmed and whose spirits and souls have been robbed and squelched by living in and amongst steel, concrete, asphalt, noise, and a multitude of invasions of their private space reconnect with raw nature - with the wind in their faces, the odors of wild flowers, and the sounds, sights, odors, and touch of other animals and inanimate environs. A world in which sensing is feeling. Nature is our unconditional friend and reconnecting with nature can help overcome alienation and loneliness. The power of love must not be underestimated as we forge ahead to reconnect with nature.

Keywords: *science, nature, holism, compassion, social responsibility*

> *"My prayer is that we 'center down,' for the sake of all the relations, for all of us. To be perfectly honest - and there can be nothing less - my prayer is that we get down, that we get down and dirty. I pray that we lose ourselves while lovemaking with dirt, with the rocks and streams, the salmon who swim there, the coyotes and 'coons, the water bugs and snakes - with the fertile ground of wherever we may be."*
>
> (Sewall 1999, 274)

> *"The earth is, to a certain extent, our mother. She is so kind, because whatever we do, she tolerates it. But now, the time has come when our power to destroy is so extreme that Mother Earth is compelled to tell us to be careful. The population explosion and many other indicators make that clear, don't they? Nature has its own natural limitations."*
>
> (His Holiness The Dalai Lama 1999, 197)

> *"Like human mothers, nature has always evoked ambivalent emotions. She is beautiful, fertile, nurturing, benevolent and generous. But she is also wild, destructive, disorderly, chaotic, smothering, death dealing . . ."*
>
> (Sheldrake 1991/1994, 9)

> *"Why say 'fantastic' when you mean 'Scientific'?"*
>
> (cummings 1953, 105)

Resisting Narrow Science, Reconnecting with Nature

"Back off man, I am a scientist." This bumper sticker has been percolating in my brain for many years. Here is why.

I am a scientist. Because I study animal behavior and behavioral ecology and am interested in the health and integrity of individuals, populations, species, communities, and ecosystems, some of my colleagues may scoff at my declaration of being a scientist, for all I do is watch animals go about their daily activities. Because I have a dream of reconnecting humans with the lives, souls, spirits, and hearts of other animals, and also with inanimate landscapes, and

because I work with philosophers, some of my colleagues think I am a bit bizarre and that my science is too "soft." Because I am a sentimentalist, some think that my science is flawed — too subjective — with little or no hope for redemption. I believe science needs to be more open to individuals' worldviews. There are so many diverse problems it is unlikely there is only one sound scientific method.

So, I do not wear a lab coat, work in a laboratory, deal with fancy gadgetry, and do not perform sophisticated experiments. Nonetheless, the magnificent and awe-inspiring world is my laboratory and I love what I do; it is fun. So, "soft" or "hard," I do some sort of "science." But, I do not take a reductionist and impersonal scientistic view of the world in and around me. I am, indeed, in awe of how much nature has to offer to all of us, scientists included, when we open our hearts to her boundless and breathtaking splendor, her innumerable messages, her beneficence, her generous invitation to join her. (Recently, an editor of a major journal told me that most people feel that "sheer fun . . . has to be purged from papers before they are regarded 'objective' enough for publication.")

My vision is to create a community in which humans perceive themselves as a part of nature and not apart from her, in which humans who are overwhelmed and whose spirits and souls have been robbed and squelched by living in and amongst steel, concrete, asphalt, noise, and a multitude of invasions of their private space reconnect with raw nature — with the wind in their faces, the odors of wild flowers, and the sounds, sights, odors, and touch of other animals and inanimate environs. A world in which sensing is feeling. Nature is our unconditional friend and reconnecting with nature can help overcome alienation and loneliness.

In this essay I discuss various aspects of traditional science, suggest that holistic and heart-driven compassionate science that is infused with love needs to replace reductionist and impersonal science, and discuss some aspects of translocation studies in which animals are moved about from one place to another in humans' attempts to "redecorate" nature.

Stepping Back from Science

> *"What do scientists do when they do science? According to the advertisement at the beginning of The Double Helix, J. D. Watson's account of how the structure of DNA was discovered, doing science includes politics, sex, wine, movies, teamwork, rivalry, genius, stupidity, and virtually everything else that makes life in the lab and out something less than perfect and a great deal more than dull."*
>
> (Grinnell 1987, 1)

It often is valuable to step back and take a look at whatever it is we do. Asking questions about science can be useful for learning about science and scientists. These sorts of queries are referred to as second-order or meta-queries for they deal with the science of science, or how science is conducted.

Science supposedly tells us why things are the way they are. However, science is not value-free. Numerous prejudices are embedded in scientific training and thinking. Scientists, as humans, have individual agendas — personal, social, economical, and political (for a discussion centering on humans and nature, see Wilkinson 1998).

Basically, science is an enterprise not unlike many other businesses. In his book, *The Unheeded Cry*, Rollin (1998) notes that the training of most scientists is grounded in the "common sense of science" in which science is viewed as a fact-gathering, value-free activity in which individual values and subjectivity play no role. Only later in their careers do many scientists discover that the trappings of their education, (that science is value-free and objective), have precluded more pluralistic views of the nature of science and squelched creativity. I certainly fit into this scenario (Bekoff 1998a).

There is a structure to doing science to which I, and most of my colleagues adhere, no matter how different are our inquiries. We ask questions, design research projects to answer these questions as unambiguously as possible, analyze data, see how well our results fit our predictions, generalize to other situations, write up papers, deliver presentations, make errors, and go back to the drawing board to design future work. Basically, science proceeds by a combination of supporting predictions, making errors, discovering new connections and patterns among variables, and then designing future projects. Scientists, like other humans, are fallible. Indeed, it is our fallibility that keeps us in business.

Social Responsibility

> *"Ultimately, scientists have a responsibility to engage in public debate about the state of the environment, so that people can make informed decisions about the kind of world they are creating."*
>
> (Mackey 1999, 248)

For many decades, science and scientists have been held in high esteem and placed on a pedestal by non-scientists and scientists themselves. Numerous scientists had an arrogant attitude about their self-worth, an attitude that did not serve science well (e.g., Mares 1991). Most scientists work in a safe, insulated microcosm. Scientists were trusted, their authority was unquestioned, and those who questioned it

were considered to be members of fringe groups, perhaps even Luddites, who were anti-science or anti-intellectual. Scientists were generally autonomous and a monologue generally went from science to the rest of society with little exchange or interaction. After all, scientists busily discover cures for countless diseases, the structure of the human genome, how to make weapons for global destruction, ways to get to the moon and elsewhere, how to generate and process information faster, how to engineer better food, how animals behave, and how nature works — alas, how to make our lives longer and presumably better. And indeed science has chalked up innumerable successes. But it can do better.

Nowadays more people, including some scientists, question science. Increasingly science is not seen as a self-justifying activity, but as another institution whose claims on the public treasury must be defended. Non-scientists are generally more aware and more inquisitive, and society is more complex. There also needs to be a new social contract between science and society that is characterized by two-way dialogue (Gibbons 1999). Science will continually have to legitimized. Thus the dialogue will have to go two ways - science to society and society to science. Scientists have numerous and deep social responsibilities that can no longer be ignored (Mackey 1999). Those who question science are not being anti-science or anti-intellectual. Rather, there is increasing skepticism because they feel that given the enormous amount of money that is gone into various scientific endeavors, science hasn't delivered, few final and irrefutable answers are available. Many are also concerned with the politics, economics (rush for patents, financial gains), and arrogance of science. And, while we are certainly making some progress in living in harmony with other animals and inanimate landscapes, we are nowhere near to achieving a grade of A in these situations.

Fragmenting the Universe: Creating Holes in Wholes and Reducing Multidimensional Terrain into Unidimensional Flatlands

What about science and nature? While we have learned much about nature, one reason traditional science often falls short is that it fragments the world. It forces a separation between the seer and the seen — how the world is felt and sensed (see also Martin 1992, Abram 1996, Sewall 1999). Reductionistic science sorts and filters reality, dissects, disembodies, and splits wholes into parts; it makes holes in wholes. It produces linear, mechanistic views of the universe and objectifies and devalues animals and nature. It reduces the multidimensionality of our interactions with other animals and nature into dimensionless and static flatlands rather than stimulating the development, understanding, and appreciation of variegated landscapes. After much is learned about how various components of whole systems work, and the time seems right, scientists then try to reconstruct the wholes that they have scissored apart. However, we are not very good at reassembling the wholes — we cannot put Humpty Dumpty back together once he has been dissected apart. Despite good intentions, we often discover that the whole is greater than the sum of its parts and we are unable to understand how whole systems emerge from complex interdependent interactions among their constituents. The system that emerges from reconstructing the whole is a rather mysterious one.

So, in the end, breaking down wholes into parts can present a simplistic view of how systems function, how each part interacts with each and every other part, and how a whole system emerges from these complex interactions. Macroecology and the Biosphere project are good examples of large scale holistic thinking. Laudably, the National Science Foundation now supports a program in biocomplexity. (Recently I attended a wonderful meeting at the National Center for Ecological Analysis and Synthesis at the University of California, Santa Barbara, to discuss a new holistic framework for science and how humans might go about reintegrating themselves back into nature and ways to make science more socially responsible.)

Science and Control

Science also is concerned with control — controlled experiments and often control of the world. Many scientists feel uncomfortable when they cannot control variables, when unexplainable phenomena trip them up despite their conducting carefully controlled experiments. Scientists want certainty, they want to be able to establish causal relationships even when it is clear that these sorts of exercises fail as often (or more often — has anyone kept track?) as they succeed for large-scale multidimensional problems such as those resulting from human interactions with, and our influences on, nature. A concern for control might be helpful in some situations, but it can also obscure complex interactions among variables that, while difficult to tease out, are essential to understand.

In my field, animal behavior, one illustration of a concern for undercontrol is found in the excellent fieldwork of Cheney and Seyfarth (1990) on the behavior and minds of vervet monkeys. In their studies of the attribution of knowledge by vervets to each other, Cheney and Seyfarth played back vocalizations of familiar individuals to other group members. These researchers were concerned about their inability to eliminate "all visual or auditory evidence of the [familiar] animal's physical presence" (Cheney and Seyfarth 1990, 230). Actually, this inability may not be problematic if the goal is to understand "how monkeys see the world."

Typically, in most social situations the physical presence of individuals and access to stimuli from different modalities may be important to consider. Vervets, other nonhumans, and humans may attribute mental states using a combination of variables that are difficult to separate experimentally. Negative or inconclusive experimental results concerning vervets' or other animals' attribution of mind to other individuals may stem from impoverishing their normal environment by removing information that they normally use in attribution.

In the study of behavior, insistence on absolute experimental control that involves placing and maintaining individuals in captivity and getting them accustomed to test situations that may be unnatural and may greatly influence results. In this and other fields, we need to learn to deal with the complexities of the situation at hand and not oversimplify complex interactions among variables. The study of humans and nature provides as challenging a field as there is in terms of the complexity of the innumerable connections among different variables. Causal relationships often are difficult to establish, and it is necessary to accept the challenge that faces us.

It is important to know about some features that characterize traditional science. This is not to condemn science for science does deliver some very useful information that makes our lives and those of other animals better. Science also helps us learn about how our activities can lessen our impact on other humans, other animals, and inanimate environs. But science can detach people from truly sensing and feeling the wondrous world within which we live, and this tendency must be countered.

Science as Play, Science as Fun: Multidimensional Musings

> *"I study foxes because I am still awed by their extraordinary beauty, because they outwit me, because they keep the wind and the rain on my face . . . because it is fun."*
>
> (Macdonald 1987, 15)

Doing science, like playing, should be fun. Indeed, if we want students to choose scientific careers we need to show them that it is fun, that doing science is a challenging adventure in which individual creativity is rewarded. There are numerous examples in the history of science of what we call the "aha phenomenon" — when someone sees how to solve something because they have removed the restraints of traditional scientific linear thinking and allowed themselves to engage in multidimensional musings that are challenging and fun. Many report that these creative solutions come to them when they are "just out there doing something else and having fun."

Science and Pluralism

There are so many diverse problems with which we are faced that it is unlikely that there is only one reliable scientific method. Some good examples that are relevant to the discussions about holism in which we are engaging center on the creative and controversial work of Rupert Sheldrake (1991/1994). Sheldrake does hard and rigorous science but is not afraid to take on such problems as the miraculous homing behavior of pigeons and dogs, or dogs who know when their human companions are coming home even if the human's return is irregular and unpredictable (Sheldrake 1999). Sheldrake's ideas of morphic fields and the organization of self-organizing systems may explain such coordinated behaviors as the rapid movement of fish within schools without collisions and the coordinated change in direction shown by large flocks of birds. To date, some of Sheldrake's explanations based on collective morphic fields seem to be as reliable as those traditional explanations that are more palatable to scientists. While some people dismiss Sheldrake as a flaky scientist — his science has gone to the dogs — I believe that he is a bold and creative thinker who is forcing people to expand traditional science. His views of nature and of human interactions with nature and other animals are expansive and can lead to new investigations that may shed light on phenomena that have defied traditional explanations. Even if Sheldrake is only correct one tenth of the time or less, he will have made important contributions for forcing us to think outside of traditional paradigms. Pluralism is an essential ingredient for good science. Normative thinking can be stifling.

Reductionism, Holism, and Heart: Towards a Compassionate Science

Reductionist science also misrepresents the world. This has serious consequences for the quality of knowledge we gather and for how we interact in and with nature (see, for example, Berkes 1999 and references therein). Reductionism promotes alienation, isolation, and disconnection. It forces a separation between the seer and the seen — a false dualism. Science often impedes our truly sensing, feeling, and understanding the scope of the amazing world within which we live. We live as if we know with great certainty how whole systems work but our knowledge is far from infallible.

Reductionism can also easily lead us away from viewing animals' worlds as they view their own worlds and lead to rampant and destructive anthropocentrism. Reductionism reinforces alienation, isolation, and disconnecting. Science can indeed make nature less majestic and less magical.

Holistic and more heart-driven science is needed, science that is infused with spirit, compassion, and love. Closet holists need to emerge and offer their heretical views.

Holistic heart-felt science reinforces a sense of togetherness and relationship, family and community, and awe. It fosters the development of deep and reciprocal friendships among humans, animals, and other nature. It helps us resonate with nature's radiance and lessens our tendency to think, egocentrically, that we are at the center of everything. Thomas Berry (1999) stresses we should strive for a benign presence in nature. Native Americans are proud to claim that "animals are all our relations." Animals and inanimate landscapes need to speak for themselves. And we must listen to their messages very carefully. Trees and rocks need love too.

Holism is a welcomed addition to reductionism and can help us along immeasurably. Sheldrake's concept of morphic fields may indeed be instrumental in facilitating reconnecting humans to nature (even if he is wrong), or at least open our eyes to new ways of viewing our complex and reciprocal relationships with nature. We will never have a true sense of the beauty and magnificence of the world unless we adopt a holistic/global picture.

Redefining and Expanding Science: Science with a Heart

> *" . . . insisting that every scientific episode must end in success seriously biases our understanding of science."*
> (Hull 1996, ix)

Science remains a very powerful and influential enterprise. We need to be careful about how science is conducted, how information is disseminated, who has access to it, and what is done with it. And while there are many certainties associated with the result of scientific inquiries, I think that paying attention to all of the uncertainties of science will make for better science. We need to redefine science to include hard data infused with stories, anecdotes, and down-home common sense. Perhaps even non-scientists can be called on to help design scientific research. Their (supposedly) naive views might provide refreshing and enlightening insights. Scientists need to have more open exchanges with society, step down from their pedestals and stop preaching to the converted (their colleagues who have the same world view). Removing ourselves from the trappings of traditional science will open the door to new and exciting discoveries. We need also to make science more accessible to non-scientists and cut down on unnecessary jargon.

One road to travel would reinforce creative, passionate, and bold dreaming, and resist narrow thinking that claims there is only one way to do "good" science. We need to imagine the unimagined. Allowing individual idiosyncrasies, interdisciplinary collaborations, holism, and heart to inspire science will make it more exciting, creative, attractive to students, and likely better. The renowned scientist, Frederick Seitz, recently lamented how disturbing it is to learn that few scientists under 50 years of age have much interest outside of their discipline (Seitz 2000). Scientists need to stop stepping on their own feet and hindering the development of their own fields (Mares 1991). They must step out of the narrow confines of their disciplines, and scientists and non-scientists must talk to one another and respect each others' views. Seitz (2000) concluded his concern of the loss of generalists by answering with an emphatic "yes" the question of whether " . . . it [is] desirable that we have a significant group of generalists in all cultural fields."

It seems that all scientists should be open to change. But some still resist the notion that science is value-laden and some do not want to impregnate science with feeling. Nonetheless, the Nobel prize winning geneticist, Barbara McClintock, stressed that scientists should have a feeling for the organism with which they worked, and she worked on corn! Fumento (1993, 366) notes that some scientists "do not want to see a 'blend[ing of] the natural sciences, values, and social sciences,' because inevitably this leads to the subjugation of scientific truth."

We need science with a heart — a compassionate science. Solid science can be driven by one's heartstrings — solid science can be done even if one goes to the beat of a different drummer. Saturating science with spirit and compassion will help bring science, nature, and society together into a unified whole. Questioning science will help insure that we will not repeat past mistakes, that we will move towards a world in which humans and other animals share peaceably the beneficence of nature. Magnificent nature — the cacophony of her deep and rich sensuality — will be respected, cherished, and loved.

Redecorating Nature: Translocating Animals and Trespassing Disciplinary Boundaries

Some of the above ideas find a home in some of my own interests in conservation biology. Indeed, these are interdisciplinary questions with few simple answers. These big questions require broad, not reductionist, views of science. I have been long interested in humans' attempts to manage — control — nature, and some of the associated ethical and biological questions that demand serious discussion (Bekoff 2000a). Ethics and science are embedded and not juxtaposed against one another. Interdisciplinary input from biologists, ecologists, philosophers, sociologists, economists, lawyers, and political scientists is essential to deal with the problems at hand and to develop creative and broadly synthetic proactive solutions to difficult problems. Thus, boundaries between these different disciplines must melt away, for all are important. There is no room for territorial defense. The

arena within which we work becomes an exciting and challenging multidimensional terrain rather than a misleading and boring flatland.

Moving animals from one place to another — translocating them and redecorating various habitats — raises numerous questions concerning humans' relationships with nature. Relevant issues include the management and control of nature, efforts to restore or recreate ecosystems, increasing biodiversity (is more better?), animal protection, and anthropocentricity versus biocentricity. These big questions require broad, not reductionist, views of science. In addition, sociological, economical, political, and biological aspects (and agendas) demand close attention. Translocation projects involve capturing animals in one area and transporting and releasing them elsewhere. These events are psychologically and physically stressful to the animals who are moved about. Furthermore, the ecosystems from which the animals are taken and the ecosystem into which animals are placed undergo changes, but there have been few studies of what happens in each area. Most efforts concentrate on the fate of the (re)introduced animals in their new homes.

Jinxed Lynx?

A recent attempt to reintroduce Canadian lynx into Colorado rekindled much of my interest in this area, and I wrote a piece (Bekoff 1999a, 1999b) which raised many questions that center on the complex relationships between humans and nature. Lynx are now listed as "threatened" under the Endangered Species Act.

In Colorado, during the winter and spring of 1999, 41 Canadian lynx were reintroduced to areas where they once roamed (another 33 individuals were released in April 2000). Seventeen of those released in 1999 have died and eight are missing (early April 2000). This highly controversial project brings to light some concerns about reintroduction efforts and humans' role in trying to control nature. For example, it is not clear that species preservation and conservation have to be valued, why "more is better," why biodiversity should be conserved, or if we can truly improve nature. Reading and Clark (1996, 296) stressed in a recent review of carnivore reintroduction projects that "It is clearly desirable to improve approaches to reintroduction."

It is important to reassess what we are doing and why. Just because we can do something does not mean we ought to do it. Indeed, there are numerous factors beyond the control of scientists and others who so dearly want them to succeed. Recently, three biologists argued that personal attitudes, human shortsightedness, and greed, would with few exceptions be insurmountable stumbling blocks in attempts to manage animal populations (Ludwig, Hilborn and Walters, 1993).

Can We Achieve More by Doing Less? Faking Nature

I raise the questions I have, not because I am against all reintroduction and translocation programs. Indeed, some well-planned efforts look to be on the road to yielding sustaining populations (gray wolf recovery in Yellowstone National Park seems to be going faster than predicted; red wolves are doing well on the Alligator River National Wildlife Refuge in northeastern North Carolina) and they can serve as models for future efforts. Rather, I ask these questions because the issues are not as clear as some people want them to be. I deeply appreciate the good intentions and efforts of all involved, but sometimes good intentions are not enough. And, there is no room for failure for these highly visible projects continually come under careful public scrutiny.

I ponder these questions because the issues are not as clear as many people want them to be. Nature is complex, but many people want simple, quick solutions when tinkering with her. There are none. Successful proactive planning takes time. When trying to conserve species or restore ecosystems we must be concerned with all animals who are involved, not only human-centered goals. Many lives are at stake. Some "big" questions include: Should individuals be moved and perhaps suffer and die because of what we want? Should individuals be traded off for the perceived good of their species? Should populations and ecosystems that have developed and sustained themselves in the absence of predators be altered? What about other predators who might now experience increased competition for food? For example, reintroduced wolves and perhaps their offspring are killing numerous coyotes (more than 50%) in Yellowstone National Park (Crabtree and Sheldon 1999). Before the wolves were reintroduced, coyotes didn't compete with wolves. Why are wolves more valuable than coyotes? Are they? What about prey who now will be eaten when in the past, in the absence of wolves, they would not have been preyed upon?

It may turn out in some cases that it is impossible to regain what was lost. It may be infeasible to recreate what once existed because times have changed and we cannot recreate what once was. In the end we may simply be faking nature.

Wholes and Holes: Emergent Complexity

Reintroduction projects involve moving animals from one place to another, redecorating, in a sense, a given area. As I noted above, there has been little attention paid to the effects of these removals — the holes that are made in wholes — on the flora and fauna of the areas from which animals are taken and placed. Consider carnivores, for example. These quotations come from a recent paper published by Terborgh, Estes, Paquet, Ralls, Boyd-Heger, Miller and Noss. (1999).

If, as we conclude here, top predators are often essential to the integrity of ecological communities, it will be imperative to retain top predators or restore them to as many parts of the North American community as practical. Failure to do so will result in distorted ecological interactions that, in the long run, will jeopardize biodiversity.

(Terborgh et. al, 40-41)

Top predators play structuring roles in many ecosystems.

(Terborgh et. al, 53)

From a conservation perspective, we are concerned about the destabilizing forces that are unleashed in ecosystems from which top predators have been eliminated.

(Terborgh et. al, 54)

Consider also this quotation from a recent paper by Berger (1999, 2261): "There are subtle, community-level modifications in terrestrial ecosystems where large carnivores no longer exist." A fair general conclusion is that top carnivores play a top-down role in regulating prey populations — they stabilize the trophic structure of terrestrial ecosystems. Top carnivores play an irreplaceable regulatory role.

Obviously, carnivores are closely linked to the wholeness of many ecosystems. By paying close attention to what we do to them, and why we do what we do where and when we do it, we can help maintain the integrity and vitality of individuals, species, populations, and ecosystems (Bekoff 2000a). Given the importance of carnivores in various ecosystems, it is essential that we know about what effects removal and introduction have in the different areas. Removing individuals involves taking apart an ecosystem and when individuals are removed we change the relationships among those variables remaining. And when we (re)introduce individuals into an area we change relationships among variables at this location. So, a key question centers on how we deal with the emergent properties at both locations. This is not a trivial question or an easy one to solve. We deal with it every time we tinker with — redecorate — nature.

A Benign Presence

As I wrote above, Thomas Berry (1999) stresses that we should strive for a benign presence in nature. The following (oversimplified) matrix (where + = benefits, - = costs) helps me to organize my feelings on much of what I have written above.

	Animals -> Ecosystems	
	+ +	+ -
Humans		
	- +	- -

Benign presence, or having both humans and animals -> ecosystems benefit, is indicated in the cell "+ +". My take is that most interactions of humans with animals -> ecosystems result in "+ -" interactions (humans benefit and animals -> ecosystems sustain costs), where as few if any result in "- +" (humans sustain costs and animals -> ecosystems benefit), or "- -" (both humans and animals -> ecosystems sustain costs). Indeed, I would argue that "+ +" is the situation for which we should always strive. Perhaps "- +" in which humans sustain costs and animals -> ecosystems benefit should also be more palatable.

The Re-Generation

In their interactions with nature, humans have, for the most part, been reactive rather than proactive. We rekindle, redefine, and reinvestigate our relationships with nature, reengage and reconnect with nature, reset boundaries, revisit important problems, regain our sensitivity to the planet's problems, try to restore or recreate ecosystems, rehabilitate wildlife, reintroduce species, recover lost or dwindling resources, and reconcile with nature. As I wrote above, science certainly learns from its mistakes, and indeed it is our fallibility that keeps science afloat, but while there have been innumerable and monumental successes, there have also been numerous failures in our efforts to understand natural systems and how humans influence other nature. It is well and good that we want to reconnect with nature, but in the future proactivity must prevail.

Teach the Children Well

"Those who complain of the 'inconsistencies' of animal lovers understand neither the complexity of attitudes nor how rapidly they have developed."

(Mighetto 1991, 121)

"Environmentalism means many things to many people, but — in the end — it means nothing if we are not willing to endow the concept and its myriad realizations with the broadest and most compassionate of biological possibilities."

(Tobias 1998, 204)

In my view we need to do much better when we interact with - control, dominate, manage - nature. We need to put

nature's interests ahead of our own and respect and love all life and inanimate landscapes. We need to learn as much as we can about other animals in their own worlds and respect them for who they are (Bekoff 1998b, 1998c, 2000b, 2000c, 2000d; Bekoff and Jamieson 1991, 1996). Proactive planning is key — we cannot always be putting out fires, and indeed this reactive strategy will likely not even be an option in the future. We are worrying about wildness as it is disappearing right in front of our eyes — as I write and we discuss.

Our big brains and intellect place us in a unique position in the world, and we must make the best of our capabilities. We are an integral part of nature and have unique responsibilities to nature, and they must not be taken lightly. Time is not on our side.

Children are inherently and intuitively curious naturalists. They are sponges for knowledge, absorbing, retaining and using new information at astounding rates. We all know this, but often we forget when we are helping to develop their roles as future ambassadors with other animals, nature and ourselves. Some are also future leaders on whose spirit and good will many of us will depend. They will be other animals' voices and our voices, indeed, voices of the universe. So, it makes good sense to teach children well, to be role models, to infuse their education with kindness and compassion so that their decisions are founded on a deeply rooted, automatic reflex-like caring ethic. If we do not, they, we, other animals, human communities and environments will suffer.

The bottom line is pretty simple: teach the children well, treat the teachers well, and treasure all. Nurture and provide the seeds of compassion, empathy, and love with all the nutrients they need to develop deep respect for, and kinship with, the universe. All people, other animals, human communities, and environments now and in the future, will benefit greatly by developing and maintaining heart-felt compassion that is as reflexive as breathing. Compassion begets compassion - there is no doubt about it.

Today's children will live and work in a world in which (as I noted above) science will increasingly not be seen as a self-justifying activity, but as another human institution whose claims on the public treasury must be defended. It is more important than ever for students to understand that to question science is not to be anti-science or anti-intellectual. Questioning science will make for better, more responsible science and help to insure that in the future we will not repeat the mistakes of the past, that we will move towards a world in which humans and other animals share peaceably the resources of a finite planet.

In the end, if we fail in our responsibilities to ourselves and our children and their children, then we will soon inhabit a severely impoverished world. Rather than take a doomsday view that the world will not even exist in 100 years if we fail to accept our unique responsibilities, it is more disturbing to imagine a world in which humans and other life coexist in the absence of any intimacy and interconnectedness. Science can no longer shirk its responsibilities and must not only take praise for its innumerable successes but be held accountable for its many failures to make this a better world for all of its inhabitants. We may indeed have to go back to basics and revisit areas in which we think we know much (May 1999), but if we then proceed with care, compassion, and a broad and socially responsible agenda, there is much hope for the future. The implications for science of crossing boundaries are boundless.

Humans can no longer be at war with the rest of the world, and no one can be an island in this intimately connected universe. Clearly, the challenges with which we are all faced are extremely difficult, numerous, and exciting, but the collective bodies of knowledge that are produced will certainly help us to become more responsibly proactive activists. And this agenda will help us to restore our own fragmented psyches as well as our relationships to nature (Sewall 1999). Surely we do not want to be remembered as the generation that killed nature.

When Animals and Other Nature Lose, We all Lose

My overall conclusion remains unchanged from that which I wrote a few years ago (Bekoff 1998b). Specifically, if we forget that humans and other animals are all part of the same interdependent world — the more-than-human world (Abram 1996) — and if we forget that humans and animals are deeply connected at many levels of interaction, when things go amiss in our interactions with animals, as they surely will, and animals are set apart from and inevitably below humans, I feel certain that we will miss the animals more than the animal survivors will miss us. The interconnectivity and spirit of the world will be lost forever and these losses will make for much loneliness in a severely impoverished universe. We must love the universe and all of its inhabitants — animate and inanimate. The power of love cannot, should not, be underestimated (Ehrenfeld 1981, Goodall 1999, Sewall 1999). In my humble opinion, it all boils down to a simple fact: When animals and other nature lose, we all lose.

Endnote

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Dogmas, Idols and the Edge of Chaos

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Abstract

Neither Modernism nor Postmodernism provides an understanding of the human person that is adequate to reveal our relationship to the non-human world. In particular, the science of human ecology is increasingly dominated by an abstract vision that only increases our alienation from ourselves and the natural world. To change this we have to realize the necessity and power of Not Knowing that is the deepest meaning of the open-endedness of the scientific spirit. We should understand that our primary task as teachers is not to transmit knowledge, but to nurture in our students the precise and sensitive attention which the mystery of the world demands.

We are born with an erotic connection to the world which is too often lost as we leave childhood. To keep connected we need contact with lovers. This is not generally one of the stated aims of education. Somehow we survive, but some of us hope that eventually we'll find teachers who share our love for the world. Sometimes this happens. Often it doesn't. Instead of *amateurs*, we find professionals. To be one of those, you have to Profess. And to do that, you have to Know, to be a Master of your Discipline. Too often, what began in love and wonder becomes *only* a Discipline.

I spoke once with a woman who wanted to become an ecologist, but changed her mind in graduate school. She said "I refused to turn the animals I loved into optimal foraging devices." Many of us feel this sense of revolt. We want to move out into the world, fully engaged. Instead we are provided with abstract models, and one currently popular model is the "adaptive system." The goal is to provide a synoptic understanding of the world, a "Theory of Everything."

The most powerful symbol of such a God's Eye view is the image of the blue Earth seen from space. But we are not God, and instead of seeing with God's Eye we find our vision becoming Titanic, Cyclopean. And something is missing. Nowhere is there anything like a "person." We find organisms, rational economic actors, and consumers, but as cognitive scientists are happy to point out, we do not find a "soul." Ivan Illich says with typically stark clarity: "As long as you think about the world as a whole, the time for human beings is over" (Cayley 1992, 281).

One way in which the unifying schemes of science have been resisted by some in the humanities is to claim that the concept of Single Vision is self-deconstructing. But postmodernists engage in a dangerous game. Recall Ulysses' capture by Cyclopean Vision in the form of Polyphemos. Ulysses is a Trickster. He tells the giant "My name is Nobody." When the blinded Polyphemos roars out of his cave in agony, crying "Nobody's tricked me!" the other Cyclopes laugh and walk away. This works for Ulysses. But there is a risk in playing the mercurial Trickster, deconstructing every form of knowledge: if you have no center, you become Nobody.[2]

There is nothing in modern scientific cosmology, and precious little in postmodern humanism, which enables us to imagine the Person as a category as basic as Space, Time and Energy, and ultimately as indefinable. Henry Corbin, the French philosopher and theologian, has argued that we face the possibility of the annihilation of the Person (Corbin 1981).[3] The abstractions of modern science do not include it. Neither do the multiple visions of postmodernism. This occurs in a culture so frantic that we hardly notice our absence.

The root of this catastrophe lies in our absolute commitment to a certain kind of knowledge and the power that it confers. Chiseled in huge letters on the library at my graduate school was written: "Ye shall know the Truth and the Truth shall make ye free." This used to bother me, since I didn't know of any truths that were making me free. I was pretty neurotic then, and every time I walked by I thought of Nietzsche's Truth: "God is Dead!" I kept thinking "that's not what they mean." I had no answer to the question, Which Truth will make us free?

I was raised in an exceedingly secular household. I did not know that the words come from the Gospel of John. They are spoken by Christ. The whole passage is:

> *"If you continue in my word, you are truly my disciples, and you will know the truth, and the truth shall make you free."*
>
> (John 8: 31-32)

This explains the words chiseled in the stone. This is the kind of Truth that frees. But a secular culture has no access to it, and our search for knowledge is not contained within limits imposed by a sense of the sacred. We believe, or we act as if we believe that each new fact, each new discovery will liberate us. We behave as if all knowledge is equal, that knowledge is information and information is Power.

This is dangerous. In what I take to be the spirit of Henry Corbin, I want to counter it with a plea for the recognition of the necessity and power of Ignorance. I said this in class last Fall and it made students nervous. It should. But so should the claims of Knowledge. There are kinds of Ignorance, just as there are kinds of Knowledge, and we do not know how to distinguish any of them. I most emphatically do not mean the Ignorance which takes refuge in dogma and hatred and fear, but that which confers the blessing of humility, and is required for love.

There is a tradition in Western culture which affirms the importance of humility in the face of our finitude, and so, of a kind of Ignorance, beginning with Socrates, who was so threatening to the dogmatists of his time that he was put to death. A pinnacle was reached in the 15th century with De Docta Ignorantia (On Knowing Ignorance) of Nicolas of Cusa, who hoped to oppose the dominion of Aristotelian logic, which he saw could never be "a fitting instrument to investigate a universe created by [an] infinite God..." (Dolan 1962, 56). Our reason operates within bounds, for we are finite. Nicolas of Cusa writes:

> *...we may be compared to owls trying to look at the sun; but since the natural desire in us for knowledge is not without a purpose, its immediate object is our own ignorance. Nothing could be more beneficial for even the most zealous searcher for knowledge than his being in fact most learned in that very ignorance which is most particularly his own; and the better a man will have known his own ignorance, the greater his learning will be*
>
> (Dolan 1962, 8-9).[4]

Four hundred years later, in the shadow of the Enlightenment, Keats felt the limits of an excessive rationality yet again. Charles Olson writes:

> *...John Keats, walking home from the mummers' play at Christmas 1817, and afterwards he'd had to listen to Coleridge again, thought to himself all that irritable reaching after fact and reason, it won't do. I don't believe in it. I do better to stay in the condition of things. No matter what it amounts to, mystery confusion doubt, it has a power, it has what I mean by Negative Capability. Keats, without setting out to, had put across the century the inch of steel to wreck Hegel, if anything could.*
>
> (Olson 1996, 46)

In the words of George Steiner, it is this negative capability that "allows us to inhabit the tentative." (Steiner 1989, 176).[5] We need a dose of this now, and there are those who argue for it even within science itself.

Jacob Bronowski is a powerful spokesman for the view that the fundamental characteristic of science is its opposition to all dogma. In the forever unforgettable moments of his television series *The Ascent of Man* filmed at Auschwitz, he says:

> *It is said that science will dehumanize people and turn them into numbers. That is...tragically false... This is where people were turned into numbers. Into this pond were flushed the ashes of some four million people. And that was not done by gas. It was done by arrogance. It was done by dogma. It was done by ignorance. When people believe they have absolute knowledge, with no test in reality, this is how they behave... We have to cure ourselves of the itch for absolute knowledge and power."*
>
> (Bronowski 1974, 374).

For Bronowski, ignorance is belief in absolute knowledge. And although there is something special about science as he understands it, there is nothing special about scientists. They fall all too often into dogma like the rest of us.

Another challenge to the domination of Certainty comes right from the heart of theoretical biology in complex systems theory. Stuart Kauffman argues that adaptive systems at all scales, from the cell to the society, are most resilient, most able to change in the face of changing environments, when they exist on the "edge of chaos," balanced between chance and necessity. The law-like we can foresee; the contingent is always a surprise. On the basis of theoretical work of his own and of many others, Kauffman suggests that it is characteristic of sufficiently complex natural systems to be inherently unpredictable *in principle* over comparatively short time scales in many crucial aspects of their behavior. Because we ourselves live on the border between chaos and order, there is an inherent limit on how much we can know, and we must be careful to take small steps. We cannot see very far ahead. The haphazard experimentations of a democratic, pluralistic and de-centralized world

> *may be far and away the best process to solve the complex problems of a complex evolving society... All we...can do is be locally wise, not globally wise... Only God can foretell the future... We can only do our local, level best.*
>
> (Kauffman 1995, 28-29)

I believe that the *docta ignorantia*, the "knowing ignorance" which Nicholas of Cusa defended, provides a way between the absolute dogmas of totalitarianisms of all kinds, and the nihilism which Corbin argues is the inevitable outcome of any postmodern relativism (Corbin 1981). The postmodernists are on to *something*, since the obvious response to Single Vision is Multiple Vision. We want not the single

vision of the Titanic Cyclops, but perhaps a re-imagination of the Old Testament vision of Ezekiel: the wheels of the Chariot had rims full of eyes all around. But what prevents a dissolution into nihilism? What prevents "negative capability" from being merely a back door onto the landscapes of totalitarianism, where the individual as such has no autonomy, no place, no meaning? What cosmology can save the person?

We are losing ourselves because we are Positivists. We have lost touch completely with that distinction known to medieval theologians between the positive and negative attributes of God.[6] The Supreme Being of Positive Theology exhibits attributes such as Goodness, Power, Justice. This Deity is an inflated likeness of the creatures of the world, us mostly, and is in some sense knowable; Big, but knowable, because it is somehow "like us." Modern science is a secularized version of this: the world is in principle within our grasp, and we can imagine having a Theory of Everything. And, knowing Everything, we will be in Control. Positive Theology breeds Positivist Science.

But, if you have Everything, then what's left is: Nothing. When you know the attributes of God, when you have found the Theory of Everything, You're done! You have the Truth. And then you're really dangerous. It only remains to make everyone see the Truth. And, you must hold this Truth very tightly indeed, because the alternative to Everything is the Abyss.

But there is another Nothing. The source of Being cannot itself be another being. It must be somehow *like* Being; so says positive theology. But it must also be beyond, unlike all Being: that's Negative Theology. This is not a Black Hole which consumes and annihilates. It is the No-thing from which all being derives, which is the source of all things.

There are two faces to everything, corresponding to the two faces of Divinity, the Positive and the Negative. To the first correspond attributes like location, velocity, genotype, trophic level, psychological type, gender, race... But then, beyond what is knowable, lies, not the Abyss, but the Gift. We may call this Presence. It is what keeps the world, and each thing in it *open*, alive and Real, and at the same time *it is the principle of individuation itself*. It is hard to talk about, since it emanates from beyond the realm of discursive knowledge. But it can be felt. It may be in some sense "mystical" but it is in no way indeterminate. Christopher Alexander calls it the Quality Without a Name. He writes:

> *The fact that this quality cannot be named does not mean that it is vague or imprecise. It is impossible to name it because it is unerringly precise. Words fail to capture it because it is much more precise than any word.*
>
> (Alexander 1979, 29)

The traditions of Abrahamic monotheism hold that it is in the human person that this Presence can become most shattering, most God-like. It is what keeps us irreducible to optimal foraging devices, or genes, or history. Yet it is not restricted to human beings alone. It is the spark of divinity in all things. It is the essential counterweight to Positive theology and Positivist science, which want to tell us finally and forever who and what we, the world, and God are. But there can never be a final Theory of Everything. There can never be a final theory of anything, because the Absolute source of all being is, in the words of the Sufis, "an Ocean without a shore," not encompassed by any system. It must reveal itself in a myriad lights, a multitude of perspectives, none of which can ever exhaust its fullness. It is the necessary peacock's tail of reality, each eye precisely detailed.

And so idolatry is forbidden in the Abrahamic tradition. Idolatry is believing that there is somewhere you can stop knowing, having attained the Truth, about the world, about a thing, about a person. The recognition of Presence transmutes idols into icons which are always more than they appear.[7]

Abolishing idolatry does not mean anything goes. Each step requires an attention to place, to context, to the particular, which we might well call "ecological" in the sense in which the word is used by the lovers, the "amateurs," those who have not yet been taken captive by a "discipline." Always we must think, always feel. There is enormous responsibility in this, and it is tremendously difficult. Vaclav Havel says that stupidity consists of passing on ideas without thinking them. Insensitivity consists of being in the world without feeling it. Stupid and insensate, we live in a little box because it seems secure. But we cannot breath in there.

To get out we need an Imaginal Mind: sensitive to what William James called the "eachness" of things, a mind which is receptive, resilient, and alive.[8] We don't get a lot of practice at this. We live in a generalizing time. We move too fast. We are trained to see patterns and laws, not particular things, and we have not been taught to discriminate finely in the realms of feeling. Our very language imposes constraints. Sanskrit has 96 words for love; Persian, 80; but English has only one (Johnson 1993, 6). And modern English is full of abstractions. Not all languages are. Arabic, for instance, is rooted in sensual particulars. The Islamicist William Chittick writes:

> *An old joke among orientalists tells us that every Arabic word has four meanings: It means what it means, then it means the opposite of what it means, then it has something to do with sex, and finally it designates something to do with a camel. ...The rational mind tends to push the meaning of a word away from experience to 'what it*

means' but the imaginal mind finds the self-disclosure of the Real in the sex and the camel...it is in the world's concrete realities that God is found, not in its abstractions.

(Chittick 1998, xxxv-xxvi)

The primary characteristic of the imaginal mind is that it "thinks concretely." We find this imaginative approach to the world wherever egoless love is in play.

There are ways of life which effectively engage the world and yet recognize mystery as a positive power. Reality is forever beyond our ability to know it definitively. If we open ourselves to this, then landscapes burst, over-run with life and lives. Cosmologies take effect in the souls of individuals who live according to them. If we wish to act effectively to change the worldview of our culture, then we must view our task as teachers in a new light. Our primary function is to nurture the precise and sensitive attention which the world demands. Because it is this feeling for the exuberance of our geographies, rooted in loves for the world, which draws our students to human ecology in the first place.

Endnotes

1. As this issue was going to press it was announced that this essay won a John Templeton Foundation Exemplary Award for the "Expanding Humanities' Vision of God" Program. An earlier version of this essay was presented at the Xth International Conference of the Society for Human Ecology, Montreal, PQ, Canada, May 27-30, 1999. Mailing address: 450 Dahlia Farm Road, Monroe, Maine 04951 USA
2. Charlene Spretnak in *States of Grace* (1991), makes a useful distinction between deconstructive post-modernism which is well represented in several branches of the humanities, and what she calls ecological postmodernism. It is the former that I refer to here. Although Spretnak's distinction is very useful, I think that in the end her vision of ecological postmodernism cannot avoid falling prey to the forces of what the postmodernists call "totalizing discourse."
3. See also (Corbin 1969) and (Cheetham 1998 and Cheetham in press).
4. This passage is quoted also in Nasr 1989. Chapter 1 is useful in understanding Nicolas's view of human reason and intellect.
5. Steiner (1989), provides a *tour de force* which seems to me to echo much in Corbin's work which is relevant to the subject of this essay, while speaking from an aesthetic and literary perspective rather than a specifically philosophical and theological one.
6. On what follows, see (Corbin 1969, 1981), and (Cheetham in press).
7. See especially Corbin (1969, 133-135).
8. On the concept of the "imaginal" see Corbin (1977, vii-xix) and Hillman (1992).

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The Myth of Chief Seattle

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As the world faces increasing environmental challenges, people have sought wisdom and inspiration from a variety of sources. One of those sources is the speech which Chief Seattle delivered nearly 150 years ago. Seattle was a Suquamish Indian from the American northwest who delivered a speech in 1854 to Isaac Williams, the Territorial Governor of Washington, as Williams negotiated with him for the sale of land that was to become the city of Seattle (named in the chiefs honor). The speech has been revered by many people for the inspirational message it provides and for the respect for the environment it displays. Below is a short excerpt of that speech as it appeared in vice-president Al Gores book, *Earth in Balance: Ecology and the Human Spirit:*

How can you buy or sell the sky? The land? The idea is strange to us. If we do not own the freshness of the air and the sparkle of the water, how can you buy them? Every part of this earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every meadow, every humming insect. All are holy in the memory and experience of my people....

If we sell you our land, remember that the air is precious to us, that the air shares its spirit with all the life it supports. The wind that gave our grandfather his first breath also received his last sigh. The wind also gives our children the spirit of life. So if we sell you our land, you must keep it apart and sacred, a place where man can go to taste the wind that is sweetened by the meadow flowers.

Will you teach your children what we have taught our children? That the earth is our mother? What befalls the earth befalls all the sons of the earth.

This we know: the earth does not belong to man, man belongs to the earth. All things are connected like the blood that unites us all. Man did not weave the web of life, he is merely a strand in it. Whatever he does to the web, he does to himself.

One thing we know: Our God is also your God. The earth is precious to Him and to harm the earth is to heap contempt on its Creator.

(Gore 1992, 159)

The above quote was taken from the larger 1200-word speech generally attributed to Chief Seattle. This speech has become popular not only because it illustrates for many Seattle's poetic appreciation of nature and his deeply spiritual understanding of the interconnectedness of all living things, but also because it epitomizes the ancient wisdom that is widely believed to be contained within Native American cultures generally — a wisdom that many view as lost in the highly technical and materially oriented urban industrial societies of the late 20th century.

For these reasons, Chief Seattle's Speech has been duplicated and disseminated throughout Europe and the U.S. It has been used by the United Society for the Propagation of the Gospel in London and by the Woman's Day World of Prayer (Kaiser 1987, 498). Portions of the speech have been published in such diverse publications as *Passages* (Northwest Airlines in-flight magazine), *Environmental Action*, Sierra Club editorials, Canada's "Green Plan" and NASA's "Mission to Planet Earth" (see Kaiser 1987, 498-500; Adams 1994, 52). Joseph Campbell even included the chief's speech in his book, *The Power of Myth*, with Bill Moyers (1988) and later read from the speech in his video series, *Transformation of Myth through Time*. In addition, not only have excerpts from the chiefs speech appeared on T-shirts, buttons and other items, but they have even found their way into scholarly works on American Indians (c.f., Thornton 1987, 225) and on the environment (c.f., Collard 1989 and Dobson 1995). There is, however, a fundamental problem with this rather uncritical dissemination of Chief Seattle's speech; the words attributed to Chief Seattle were never spoken by him, nor could they have been.

Critical Considerations

A critical evaluation of the full 1200-word modern text of Chief Seattle's speech reveals its inauthenticity. Just prior to the section of the speech that is quoted in Gores book, Seattle states, "I have seen a thousand rotting buffaloes on the prairie left by the white man who shot them from a passing train," (Kaiser 1987, 527). Seattle could not have made such a statement. To begin with, a single person could not have witnessed one individual shoot anywhere near one thousand buffalo from a passing train, given the speed of a train combined with the time that would have been needed to reload and fire a rifle used in 1854 (Not even Amtrak moves that slowly!). There also were no buffalo at the Puget Sound where Seattle lived. Seattle lived over a thousand miles from the Great Plains, and there is no evidence that he ever traveled to the plains. Finally, the transcontinental railroad was not completed until 1869, and the Euro-American bison slaughter did not begin until the 1870s. Seattle gave his

speech in 1854, a full 15 years before the railroad was completed and nearly 20 years before whites began to slaughter the remaining buffalo in large numbers. He, therefore, could not possibly have commented on it in his speech. Finally, Seattle died in 1866 (Kaiser 1987, 502), making it quite difficult — to say the least! — for him to have witnessed an event that occurred a full decade after his death.

The modern version of Seattle's speech also contains the quote, "What is there to life if a man cannot hear the lovely cry of a whippoorwill?" (Kaiser 1987, 527). Since the whippoorwill is also not native to the Northwest, Seattle could not likely have known of its existence either. Similarly, the modern text of Seattle's speech contains a reference by Seattle to the white man's urban pollution. However, since his speech was made as part of the negotiations for the initial purchase by whites of Suquamish and Duamish land, Seattle could not have commented on developments that were to follow by many years the very land transfer he was negotiating.

The reality is that the current version of Chief Seattle's speech represents but the latest rendition of an evolving work of fiction. The original text of Seattle's speech was written by Dr. Henry A. Smith and published in the *Seattle Sunday Star* on October 29, 1887 (Kaiser 1987, 503). Smith claimed that the text he published was a direct copy of a speech given by Seattle in 1854 during treaty negotiations with Isaac Williams. However, there are several problems associated with the Smith's version of the speech that raise serious doubts about its authenticity. First of all, Smith's text was published a full 33 years after Seattle gave his original speech. This time lapse alone raises serious questions regarding its accuracy and reliability.

In addition, Seattle spoke no English. His speech was given in Lushotseed, his native tongue, and was then translated into Chinook Jargon, a regional trading language containing a mixture of French, English and local Indian words. As a trading language, Chinook Jargon contained a limited vocabulary and has been described as "barely suitable for bartering" (Adams 1994, 53). It is highly unlikely, therefore, that Chinook Jargon could express many of the conceptual images contained in Smith's version of Seattle's speech, including such statements as "Yonder sky that had wept tears of compassion upon our fathers for centuries untold ..." (see Kaiser 1987, 503).

Finally, the scene set by Smith in his account of Seattle's speech was described in too melodramatical a form to represent an objective historical account. For example, Smith wrote that "Chief Seattle arose with all the dignity of a senator who carries the responsibility of a great nation on his shoulders" (*ibid*.). Indeed, Kaiser, who has done perhaps the most exhaustive review of the history of Chief Seattle's speech, has shown that substantial differences exist between the original Smith text and two short treaty speeches attributed to Seattle in the National Archives. He concludes that "the selection of the material and the formulation of the — (Smith) — text is (*sic*) possibly as much Dr. Smith's as Seattle's" (*ibid*. 506).

The original Smith text has over time been supplanted by increasingly modified versions of the Seattle speech (c.f. Bagley 1931; Rich 1932; Arrowsmith 1969). The most radical revision of Seattle's speech was created in 1971 by Ted Perry, a Texas scriptwriter. Perry composed a radically altered and enlarged version of the previously evolving Seattle speech to accompany a program on ecology produced by the Southern Baptist Radio and Television Commission. Perry's script departed sharply from all previous versions of Seattle's speech (see Kaiser 1987) and soon generated its own offspring (see Abruzzi 1999), including: (1) a version of the speech distributed at the 1974 Spokane Expo; (2) an anonymous booklet titled *The Decidedly Unforked Message of Chief Seattle*; (3) an anonymous 1991 revision of the 1974 Spokane text titled "This Earth is Precious" and (4) a poetic adaptation of the original Perry script published in the *Midwest Quarterly* in 1992 under the title, "Chief Seattle Reflects on the Future of America, 1855" (see Low 1995, 410).

Perry's script also provided the text for a children's book titled *Brother Eagle, Sister Sky* produced in 1991 by Susan Jeffers. Jeffer's took credit only for the illustrations which she produced in the book, attributing the text itself to Seattle. Ironically, Jeffer's book, which sold over 250,000 copies, ranked fifth on the *New York Times* bestsellers list for *nonfiction* in 1992 (Bordewich 1996, 132). That same year, The Nature Company advertised a small book in its Christmas Catalogue titled *Chief Seattle's 1854 Speech* (see Low 1995, 407).

Needless to say, all modern versions of Chief Seattle's speech are inauthentic. Indeed, given the fictional nature of Perry's 1971 script and the fact that all modern versions of Seattle's speech derive from his original text, the latter are all, by definition, themselves works of fiction.

Would the Real Chief Seattle Please Stand Up

Through time and repeated textual revision, Chief Seattle has been completely removed from the nineteenth century social and political context within which he lived. He has, instead, been fashioned and refashioned into successive, politically correct versions of the white man's Indian. Inasmuch as Seattle presented his speech during treaty negotiations with Isaac Williams, the significance of the speech must be understood within that context.

Seattle's speech was made as part of an argument for the right of the Suquamish and Duamish peoples to continue to

visit their traditional burial grounds following the sale of that land to white settlers. This specific land was sacred to Seattle and his people because his ancestors were buried there, not because land as an abstract concept was sacred to all Indians.

The very fact that Seattle was chosen by the U.S. Government to represent his people in treaty negotiations raises critical questions. Who was Seattle and why was he and not someone else chosen by the Americans to negotiate for the local population? The Northwest native peoples were organized into a variety of clans and possessed no centralized leadership or political structure. As in other situations where colonial governments encountered land occupied by tribal societies, the United States Government needed friendly leaders to serve as representatives for the various indigenous peoples of this region. Chief Seattle was one of the local leaders chosen for that purpose. Seattle was likely selected because he demonstrated allegiance rather than opposition to whites. He had, in fact, converted to Roman Catholicism around 1830 (Kaiser 1987, 503) and was favorably disposed towards white settlement. Seattle never fought a war against the Americans and even sided with them during one Indian uprising (Adams 1994, 52-53). He was, significantly, the first Indian to sign the 1855 treaty.

Seattle was not, however, simply a pawn of the U.S. Government. He needed whites to protect and advance his own economic and political interests. Seattle was commercially allied with a Dr. David Maynard in the curing and packing of salmon (Adams 1994, 53) and needed whites to help him in his conflict with other native leaders for control over the fishing rights that were essential to his newly developing commercial venture. In one of the original treaty speeches preserved in the National Archives, Seattle refers to the U.S. Army as a "bristling wall of strength" which will assure that "ancient enemies will no longer frighten his people" (*ibid*.). He was, thus, likely using whites to protect and advance his own interests, just as they were using him to advance theirs.

Discussion

Chief Seattle has emerged as one of the premiere icons of Native American values for many whites seeking an alternate ecological perspective. Unfortunately, however, the Chief Seattle known to most people is mostly fictional, a fabrication by whites for whites. This creation of a false Indian stereotype is hardly new. Throughout American history, whites have fabricated Indians into images that served their own interests. During the nineteenth century, when the Euro-American population of the United States competed for land with Native Americans, Indians were popularly viewed as savages who needed to be tamed, settled and civilized. Later, defeated and placed on reservations, Indians were viewed nationally as children in need of white supervision. More recently, with the growth of large environmental and counter-cultural new age movements, a new Indian image has emerged. Native Americans have become the repositories of a traditional wisdom to those challenging institutionalized beliefs and practices in contemporary industrial societies. However, this latter-day Indian stereotype represents yet another white fiction serving the interests of those who believe in it. Significantly, each new incarnation of Seattle's speech, beginning with the original Smith text and ending with the latest adaptation of Ted Perry's script, has been created entirely by non-Indians. Not one native peoples has translated Seattle's speech into their own indigenous language (Low 1995, 416).

This brief essay has been offered as a cautionary tale. One goal of human ecology is to understand and explain historical and contemporary human environmental relations objectively and on the basis of solid empirical research. It is only through such research that viable and sustainable development programs can be proposed. Inasmuch as an extensive body of ecological research exists which demonstrates that Native American populations have responded to environmental circumstances in the same manner as have other human populations, environmentalists and human ecologists need to adopt a more critical approach to the study of indigenous peoples ecology than has been demonstrated by those who have uncritically accepted and promoted the Chief Seattle myth.

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Environment, Scarcity, and Violence

By Thomas F. Homer-Dixon

Princeton, NJ: Princeton University Press, 1999
253 pages, cloth
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While there is a growing body of work on how social, political and economic arrangements affect the environment, there are few studies exploring how the environment affects social outcomes. In this volume, Thomas Homer-Dixon adduces a wide array of empirical work linking environmental degradation with violent outcomes, and articulates a preliminary theoretical framework to explain these linkages.

The central thesis of the book is that scarcity of renewable resources can, in combination with other social factors, contribute to macro-level violent outcomes such as ethnic clashes and insurgencies. Yet the role of environmental scarcity in causing violence is seldom simple, direct and linear. Rather, as Homer-Dixon points out, violent outcomes are often the product of interactions between scarcity and a number of other factors, such as inequality, migration, and the functioning of social institutions. Because violence rarely is caused by scarcity alone, it has been typical for researchers to look to the factors with which it interacts as the causes. Homer-Dixon calls for a more complex and nuanced view — a multivariate, non-linear and interactive view — of the social and ecological world.

Homer-Dixon presents an overview of intellectual currents over the last two centuries, first focusing the discussion around the broad trends of neo-Malthusian population-based ideas, economic theories of ingenuity and optimism, and resource distribution models. Drawing on prior work in complexity theory (e.g. Broeker 1987; Holling 1994), Homer-Dixon makes a compelling case that researchers should be attentive to a number of non-linearities, such as thresholds and interactions, and should accommodate to the possibility of systems having multiple-equilibria.

He then gives overviews of nine physical trends of global change: human population growth, rising energy consumption, global warming, ozone depletion, cropland scarcity, freshwater depletion, decline of fish stocks, and biodiversity loss. Each of these could be expanded into a treatise in its own right.

In examining the increasingly common phenomenon of cropland scarcity (see 63 ff.), for example, he notes that "Experts generally describe a country as 'land scarce' when 70 percent or more of the arable land is under production." He finds it ominous that in Asia, which has four of the five most populous nations, over 80% of all arable land is cultivated. Herein he makes an entirely plausible case, although he may well be wrong in the details. A reader could well wonder, for example, who are the "experts" he alludes to, have these experts done a rigorous set of tests to come up with the 70% figure, or is it an educated guess? With the crucial caveat that some of the specific pieces bear questioning, the overall picture he presents merits consideration.

Homer-Dixon follows through on his earlier discussion of complex systems, and he spends a considerable amount of the text grappling with higher-order interactions. He sees two such interactions as particularly important, and they bear noting here: "resource capture" and "ecological marginalization" (see 73 ff.). The first refers to situations in which a society has a large growth in population, in combination with shortage of some renewable resource. It is often the case in such situations that elites within a society are able to garner much of the resource(s) for themselves — to engage in resource capture. Ecological marginalization occurs when precipitous population growth is overlaid on already serious inequality in access to scarce resources, most notably land. This tends to be followed by migration into ecologically fragile regions.

Homer-Dixon looks to relations between Arabs and Israelis on the West Bank of the Jordan River for an example of resource capture. The chronic water deficit there has been addressed with the expedient of overpumping aquifers. In addition to the long-range environmental problems this was bound to cause, the details of implementation exacerbated existing social problems as well. Israel restricted the number of wells Arabs could drill, and limited the amount of water that could be pumped from them, which in turn led to a drop in Arab agriculture. While he admits the links between such dynamics and the "unrest" on the West Bank are less than clear, he argues that it is not unreasonable to believe there is a relationship.

Ecological marginalization can lead to critical social as well as environmental problems, especially when it occurs in combination with resource capture. He interprets the well-known violence in Chiapas, Mexico in this framework. As the population of indigenous peoples and field workers increased steadily, there was an increased demand for more agricultural land. Even as the land being claimed for new cultivation was increasingly marginal, local elites asserted greater control over the best land. This social closure by elites contributed to a cycle of demand for even more marginal land among peasants, accelerating environmental impact. The combination of this with declines in agricultur-

al subsidies led to an economic crisis and a collapse of the legitimacy of the ruling party, which in turn fed into the mobilization of the Zapatista insurgency.

Yet scarcity-induced violence is not unique to rural areas. Serious urban problems can be precipitated by a chain of social and environmental causes (see 155 ff.). One such causal chain could be a situation in which rural population growth, environmental degradation and unequal distribution of resources lead to falling wages and further environmental degradation and an accompanying marginalization of peoples who already were relatively powerless. When this is accompanied by rural-to-urban migration, particularly of relatively young people, the demand on resources goes up precipitously. Especially if unemployment is extensive, there is considerable risk of widespread violence.

He adduces preliminary research indicating that scarcities of environmental resources, such as cropland, water and forests often lead to social stresses within countries. These, in turn, can and do often lead to civil unrest. Equally important is Homer-Dixon's attempt to define the scope of the phenomena in question. Put another way, he makes a serious attempt to speak to what kinds of violence do not necessarily stem from environmental scarcity. He does not, for example, find much evidence that environmental scarcity has led to war between nations.

Homer-Dixon's book is primarily a theoretical work, bolstered by an array of references to empirical studies. This work is not empirical in itself. He attempts to create an overarching framework linking environmental scarcity and violence. While a number of his linkages bear closer scrutiny, the overall picture he presents is compelling. He connects an array of more tightly focused studies which, when taken together, warn of a world on the brink of catastrophe.

With environmental degradation comes increasing scarcity, and that is likely to become more acute as time goes, and so violent outcomes are likely to increase in the future. Homer-Dixon holds out real hope of addressing those problems, however. The cycle of scarcity, violence, and disruption leading to further scarcity, etc. can be mitigated by the ingenuity of a society, in terms of its ability to generate ideas to help solve technical and social problems. While Homer-Dixon discusses factors that can mitigate ingenuity itself (e.g. market failure, social friction, and cognitive limits on understanding processes that are often complex, nonlinear and even chaotic), I was left wishing he had given more attention to the critical question of what social factors would tend to cause the ingenuity that is generated to take a pro-environmental turn, as opposed to a perverse one.

In the least, a number of his assertions are empirically testable. This book presents a challenge to researchers. It presents a way of thinking about relationships between environmental trends and catastrophic social outcomes. While he correctly points out the importance of context, he appears overly enamored of qualitative, national case studies, rather than quantitative, cross-national research (e.g, see the Appendix on "Hypothesis Testing and Case Selection"). While there clearly is a need for case studies, an equally strong argument should be made that certain patterns only emerge when seen in the light of cross-national treatments. World system processes, for example, emerge most clearly only when attending to relationships that go far beyond national boundaries (e.g. Tilly 1984).

Most of the conjecture in the book is highly engaging and is supported by citations of empirical studies. Yet some of the arguments struck me as being made as much by fiat as by hard evidence. The assertion that scarcities of renewable resources are more important causes of violence than scarcities of non-renewables seemed poorly supported, for example. Also, given that there is covariation among environmental and social factors and violence, questions of which of these relationships may be spurious, warrants careful consideration. A smaller issue of form bears noting as well: while the book cites numerous sources and is richly endnoted (there are 57 pages of endnotes), the book lacks a general bibliography. It does have an abbreviated reference section marked "General Readings on Environmental Security," but the author (or the editor) could have saved the serious reader some time and aggravation by simply supplying a full reference section.

Despite some flaws, this is an important and even path-breaking book. The author has amassed existing patterns of findings from otherwise disparate work from an array of disciplines, and has woven them into a plausible whole. While the reader could question a number of the precise linkages, the overall pattern is indeed compelling. In many ways, the book is a *tour de force*.

Thomas Homer-Dixon has done us a service by framing an extended discussion around crucial issues. *Environment, Scarcity, and Violence* raises questions that scholars would do well to examine in a great deal more depth, and that citizens and policy-makers ignore at the peril of the natural environment and of society. It deserves a wide and serious reading.

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The Story of Vermont: A Natural and Cultural History

By Christopher McGrory Klyza and Stephen C. Trombulak
Middlebury College Press/University Press of New England, 1999
Paperback $19.95 ISBN 0-87451-936-5

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One of the best ways to understand human ecology is to examine the long term evolution of a landscape. To do so grounds one in a concrete place, requires attention to evolutionary processes and encourages a reasonable holism that takes account of, if not everything, all those things that matter. *The Story of Vermont* takes on exactly this task and guides the reader through the geologic, climatic and anthropogenic transformations of the landscape that is now Vermont.

Klyza and Trombulak begin by sketching the geologic history of the region. Then in five chapters they move through the key periods in human habitation of Vermont. Here the excellent studies by Bill Cronon and Carolyn Merchant have paved the way, but *The Story of Vermont* also makes significant use of primary and less well known secondary sources. Having established the evolutionary history of the Vermont landscape, Klyza and Trombulak then spend three chapters describing the typical forest, open terrestrial and wetland and aquatic communities of the region. The book concludes with a chapter on the future.

Such an ambitious undertaking is not without its limits. I was sorry that the authors did not more directly engage with ecological and human ecological theory. While the book is intended for the general public rather than academic audiences, theory can help readers understand the processes underlying a specific historical event and thereby help think about the future. More extensive use of graphics, maps and photographs would have been helpful and perhaps these can be added in future editions.

More could have been made of the interesting and complex cultural history of Vermont, especially as it relates to state and local decision making. Vermont has always been in the forefront of struggles for civil rights. It was one of the strongest advocates of abolition and even today is struggling with how to implement spousal rights for gay and lesbian couples. Over the last century and a half it has been one of the most staunchly Republican states, yet there is only one Republican in the current Congressional delegation, which also includes the only independent socialist in the U.S. Congress (Rep. Bernie Sanders). It is a state noted for policies to preserve the landscape and in which access to state government is very open and yet one where local growth machines dominate current development patterns. All these important and seemingly contradictory forces contribute to the complex dynamics of political culture and power. They will be central to how Vermont changes over the next decade, and deserve more extensive consideration.

The lack of attention to political institutions and culture parallels the limited attention to current issues. Current issues are sketched in a few places and some effort is made in made in the final chapter to integrate key trends into an overall perspective. But this section fell short of its potential. Vermont is facing great stress from sprawl development and is being influenced by a number of external stressors, including climate change, invasive exotic species and acid precipitation. Yet, in my experience (including several years as a town Planning Commissioner in Vermont) most decisions about development are made without much attention to these larger dynamics in which they are embedded. After developing a careful history of the evolution of the Vermont landscape, Klyza and Trombulak are in a perfect position to show readers the current interplay of exogenous and internal forces. Such an analysis could have a real impact on how Vermonters think through local decisions that have larger implications.

But these are faults in something quite extraordinary. Klyza and Trombulak have produced a wonderful example of human ecology at its best. Every schoolchild and elected official in the state should be required to read *The Story of Vermont*. The perspective it offers would lead to a more informed citizenry and far better public and private decisions.

Families on Small Farms: Case Studies in Human Ecology

By M. Suzanne Sontag and Margaret M. Bubolz
East Lansing, MI: Michigan State University Press, 1996
432 pages, $45/hardback ISBN: 0870134094

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What emerges in the intersection between landscape and lifescape as households dedicate themselves to creating a more sustainable world through farming? What changes occur on the land and in the business environment and what changes occur within the household? What are the appropriate measures for studying this change? What policies do these changes suggest that can facilitate a new way of households farming and interacting in the environment?

Available land and housing on an experiment station farm and increasing concerns about energy and environmental degradation coupled with the need for alternative farming models inspired Michigan State University to undertake a unique experiment in the early 1980s. Led by faculty in the College of Human Ecology, the University solicited proposals from households who wished to move to a rural setting, who wanted to farm sustainably, and who wished to establish a home-based business. The couples (presumably the search was limited to legally married heterosexual couples) had to prepare a detailed farm and business plan, as well as submit statements showing a commitment to voluntary simplicity and sustainable agriculture.

Three families were chosen for this experiment out of more than a hundred families who applied. Two of the chosen couples are the subject of this book. A complex human ecology framework, which is less a theory than a nested-systems approach, was used to understand human behavior and change. The family farm ecological model is laid out fully, as are the methodologies used to measure it and understand the interrelationships.

A series of qualitative and quantitative participatory and objective measures were developed to mark the changes over time to illuminate the rich description of the changes in farms and families. Of particular interest were each adults' perceptions of family relations and their own health and well being prior to the projects initiation, during several midway points, and as the project ended.

One cannot help but be impressed with the insights Michigan State University (MSU) gained from this experiment. The young couples were in early stages of family formation, without farm backgrounds. They left their urban lives behind, which, for one couple, included selling their home at a loss. They moved to the experiment station, remodeled the old houses to be energy efficient, built appropriate out-buildings, transitioned the land from input-intensive to organic production methods, set up complex, rotational crop/animal farming systems, and found new off-farm work in the new communities in which they located. They formed new friends (particularly each other) and entered into activities, particularly informal ones, in the nearby community.

One of the families had their first child in the course of the experiment. Interestingly enough, neither of the proposed home-based businesses developed. One was to be a massage therapy business run by the wife, and the other household was to be a home-based bakery run by the husband. Searching for and commuting to off farm work consumed all available time not devoted to restoring the house and farm. It is possible that the technical assistance proffered by MSU through its extension program privileged home and farm over business endeavors.

The experiment documents an increase in satisfaction as the couples developed the many skills necessary to put their homes and farms into shape. The human ecology nested systems perspective allows consideration of integration into the community. Community linkages are followed in terms of the informal learning that took place with neighbors, as well as the informal pressures to use more inputs and to farm more conventionally. A critical linkage for the women was informal cooperative child-care, which allowed them time to farm or just relax.

One is filled with respect for the amount of work and reflection done by these two households, one with two young sons and the other with a new baby. Major difficulties faced were economic, although the University provided a series of loan funds. University bureaucracy, in its typical way, managed to delay the availability of these funds, slowing down the construction of a greenhouse and other major infrastructure improvements. And there was still the debt each family incurred in making the home and farm improvements (which apparently went back to the MSU Experiment Station at the end of the three year "experiment".)

Finding appropriate off-farm jobs that did not involve a long commute was a major stumbling block, particularly for one family. The more specialized the skill, the more difficult it is to find an appropriate rural space to perform it. In this case, the pastry chef who had worked at elite hotels in the Lansing area found it difficult to find a shift time and a work place that met his personal and economic needs, as well as his need for sleep.

As the experiment ended, the individual levels of satisfaction regarding a number of issues began to decline.

Because the project began with establishing new relationships with the land, with each other, with the community, and with the farm animals, it was a time of great optimism and cheer. But the insecurity of tenure on this land and the University's unwillingness to commit to a final "Yes" or "No" as to whether it would continue its support led to decreasing satisfaction with almost all aspects of their lives towards the end of the project.

Yet, the quantitative and qualitative studies show that how the household systems, the farming systems, and the community systems interacted and shifted over time. The careful analysis underlines the need to consider all three aspects when implementing alternative farming structures, particularly with the increasing number of part-time farmers.

One wishes that there were more consideration of the intersections between the natural environment, the farming systems and the households. A more complete study team that included agronomists and animal scientists could have produced this. While the households had access to agronomic extension expertise, there was not the research available to link the changes on the land, including wildlife and other biodiversity, to changes in the households.

One of the households was able to be successful in custom marketing lamb and other inputs. The other household, which had planned a very complicated vegetable rotation, ultimately decided not to sell fruits and vegetables but simply to use their five acres to be self-sufficient in most of their food production.

After entering into the lives of these families and seeing their increased dissatisfaction as the three year experiment ended, I was relieved that the authors included an epilogue. The couple who raised locally-sold lamb moved farther north, where the husband found another off-farm job in the fish hatchery. They were able to establish another small farm, working toward increasing agricultural sustainability. The other couple separated. The woman works as an extension agent and runs her own small farm in a sustainable way with her two sons. The man has remarried and has a successful career as a pastry chef. Both couples feel the experiment was a worthwhile opportunity for growth, but it certainly introduced new sources of stress, as well as satisfaction, to their lives.

The methodology of this book would be extremely useful for those interested in the notion of nested interactive systems, particularly the interrelation with a built environment. The story of the adaptations made by these farmers, despite the experimental circumstances under which they took place, made them extremely instructive for understanding what the future of agriculture, particularly that involving family farms, may be in the future. The policy suggestions put forward by Sontag and Bubolz suggest the need for community development as key to supporting changes in agriculture. Increasingly, farming — even sustainable farming — is only one piece of the pluri-activity strategy used by families who want to optimize their quality of life.

Towards a Sustainable Future: Environmental Activism in Russia and the United States — Selected Readings

Edited by Maria S. Tysiachniouk and George W. McCarthy

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Sustainability is a term that is commonly used and misused when considering development and environmental concerns. One reason for its misuse is a lack of consensus or understanding of what exactly is meant by sustainability. There are also great differences in views on how to achieve sustainable development and how to measure this achievement. When we start to compare ways in which these are viewed across cultural boundaries the diversity and lack of consensus inflate. *Towards a Sustainable Future* is truly a unique compilation of interdisciplinary papers by scholars from the United States and Russia on how sustainability is viewed in these two very different countries. The objective of these readings and of the conferences that generated them are to bring together various disciplines to examine environmental issues in the U.S. and Russia, and to examine sustainability in these two countries. The book reveals some extremely insightful contrasts in perspective.

The readings either examine general attitudes, perceptions, definitions and approaches to sustainability in the Russia and the U.S., or they represent case studies that examine the multifaceted details of planning and implementation of sustainable development at specific cities or sites. In the Introduction, sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs," the same definition that was adopted at the 1992 United Nations Conference on the Environment and Development in Rio (ix). The editors then present some barriers to achieving sustainable development and outline how this volume studies attempts to implement sustainable development strategies in the two countries.

In the first chapter, attitudes of Russian and American environmentalists and their views on implementing sustainable development are presented as a theoretical framework which sets the tone for the rest of the book. It is clear from the start that there are extreme differences between the economically prosperous 1990s democratic United States, and economically constrained post-Soviet Russia. Although it is my impression that this was not intentional, all of the subsequent readings from the two countries reflect these differences. It is clear from the first chapter that until Russia can move beyond the current economic crisis and begin to break down some of the institutional barriers that exist because of recent political and social history, sustainable development will not be achievable in Russia. Despite the thriving U.S. economy, there are barriers to sustainability in this country as well. These mostly have to deal with our unwillingness to limit corporate resource use and individual rates of consumption. The obstacles in the U.S. seem slightly more surmountable than those in Russia, but there has yet to be much political, corporate, or individual willingness to change approaches to continued economic growth.

The difference in vocabulary that the authors from Russia and the U.S. use to talk about environmentalism and sustainable development is extremely revealing, and is one of the most intriguing aspects of the book. These differences clearly reflect the political, historical, social and cultural biases that underlie the perception or the actuality of achieving sustainability. Common terms used in the readings from U.S. authors include: "legislation and enforcement," "conflict with corporations," "individual empowerment," "justice and fairness," "community-based efforts" and "local involvement." Language that is more represented in the readings by Russian authors includes: "economic infrastructure," "political games," "ecological culture," "structure of regional power" and "regional science networks." Although I am not quantifying these differences and perhaps they are not significant, as I move through the book I am left with the impression that the Russian scholars are focusing more on social and institutional structures, while the Americans deal more with individuals and stakeholders. I like that this book strikes me and leaves me with an impression of difference, and I believe that this impression is the product of my own bias and the terminology used by authors from each country.

Because I am not a theoretical social scientist, the readings that I enjoyed the most were the applied case studies. These represent real attempts at implementing sustainable development. Whether Newburgh or Hudson in the U.S., or Kirishi or the Karelian forests in Russia, there are a number of commonalties drawn. As one reads these case studies it becomes clear that the stakeholders or local communities need to see clear benefits to shifting towards sustainability. Economic growth, improved environmental and public health, sound science and the maintenance of cultural and social traditions need to be part of the plan. It is crucial that

non-governmental organizations (NGOs) and members of the local community are involved in the planning and implementation stages (44). One can also conclude from these case studies that any plan for sustainability that has been handed down from the government or outsiders to the community of implementation is likely fail (38).

One particularly illuminating case study was presented by Michael Edelstein of Ramapo College of New Jersey on the "dead" port city of Newburgh, New York, which is 80 miles north of New York City on the Hudson River. Edelstein concluded that development of port activity is essential to social and economic regeneration of the community and is therefore a positive objective as long as it can be achieved in a way that protects the health of local citizens, workers and the environment. To pay for the development of the infrastructure required to achieve these goals, an interim project of transferring and processing harbor dredge spoils which are believed to harmful to human health was proposed (42). Edelstein presents this as a wonderfully insightful dilemma for environmental justice. The workers and proximate residents that most likely would be exposed to the harmful dredge spoils are nearly all African American. Based on this, one could conclude that this interim project is racially unjust. Alternatively, to deprive these same people economic opportunities because of environmental concerns might also be perceived as a reverse form of environmental racism (57). The author urges a path of economic development that maximizes human and environmental health (58).

In addition to the site-specific case studies, a number of the readings report on sociological studies of environmentalism. Among these is an interesting study that focuses on the birth of non-governmental environmental organizations in Russia, an important phenomenon since the fall of the Soviet Union. I also enjoyed reading about how environmental ethics organizations have influenced nutritional behavior in Russia. These organizations seem to be effectively promoting sound relationships between humans and the environment, and subsequently vegetarianism and preference for organic foods have risen in Russia (224).

This book might prove quite useful in undergraduate environmental studies courses, especially those that try to integrate disciplines to develop realistic solutions to the environmental, social, and economic crises that we face. Although more disciplines could have been represented, for example more perspectives from the scientific community would be valuable, the cross-cultural comparison is excellent and might prove useful in any course that compares Russia and the U.S. On the back cover it is stated that the book will be tested at a Russian and an American University this year, and after this test a second revised edition will be published. I look forward to seeing the revised edition and perhaps using at least parts of it in my own environmental studies courses.

The Local Politics of Global Sustainability

By Thomas Prugh, Robert Costanza, and Herman Daly
Washington, D.C.: Island Press, 2000
ISBN 1-55963-744-7

Reviewed by Thomas Webler
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Here is a book that brings together in an easy read a number of important contemporary themes including: sustainability, ecological economics, adaptive management, participatory democracy, bounded rationality, post normal science, consensus conferencing, and community visioning. It argues that global sustainability will never be engineered from the top-down, but can only emerge out of countless numbers of local communities creating and realizing a local vision of sustainable community. As a prescription for how communities should go about this, the authors look back to 1984 and Benjamin Barber's idea of strong democracy (Barber 1984). Strong democracy is a vision of participatory governance rich in discourse and volunteerism. But Barber has always been long on theory and short on practice. To flesh out what strong democracy might actually look like these authors point back in time to Northern Italy circa 1300 (Putnam 1993) and Eastern Switzerland's Republic of Rhaetia circa 1600 (Barber 1974). Nearer to our present time they find examples of strong democracy in action in Denmark's consensus conferencing (Sclove 1996), New England town meetings (Zimmerman 1998), and an example of watershed restoration work in Oregon (Johnson and Campbell 1999).

An intriguing aspect of this text is the attention it gives to the question of what it means to be human. Aware that mainstream economics still invokes the idea of rational economic "man" introduced by Alfred Marshall, these authors echo sociologists such as Max Weber and critical theorists such as Jurgen Habermas who call for a notion of rationality that redeems human dignity and freedom. Marshall's idea of rationality sketched homo economicus, a version of human who does not create alternatives for action, who never contemplates or learns about values or preferences, who never thinks in terms of "we," but only "me." Rational economic "man" only seeks the most efficient means to produce the highest egoistic utility possible. Such a conception may provide a convenient and powerful hypothesis-testing tool (Blank 1993), but it is historically and physiologically inaccurate (Dietz and Stern 1995), and, as critical theorists point out, it leaves out essential aspects of what it means to be human (Horkheimer and Adorno 1944). Prugh, Costanza, and Daly clearly grasp this argument, although they may not be aware of the connections mentioned above — they cite Habermas extensively, but in a different portion of their critique of capitalism. Instead, they build off Barber, to assert a vision of humanity that is inherently social and innately capable of contemplating moral questions. Such a premise focuses attention on how people talk about the kind of community they want to have, that is, how they engage in moral discourse.

Given this integration of so many ideas, is anything important left out? The answer, unfortunately, is "yes." Most surprising perhaps is the omission of the question of how expert (i.e., professional) knowledge as well as local knowledge can and should inform a democratic discourse. Moral decisions such as "What do we want our community to be?" cannot be made without a great deal of empirical knowledge. Scientists of all disciplines as well as citizens who gain their knowledge experientially or through tradition (Berkes 1999) have important roles to play in helping provide information about likely consequences of choices. It is very surprising that no mention is made in this book about the recent work at the US National Research Council on the analytic-deliberative process (U.S. NRC 1996, 1999a, 1999b; Dietz and Stern 1998; Webler and Tuler 1998. The A-D process is precisely the kind of procedural framework one needs when designing and implementing a public discourse about local sustainability.

Another glaring omission is the lack of attention given to problems of discursive competence, especially hidden motives of free-riders and egocentered parties who mislead the group and seek to exploit public discussion for private ends. Barber's idea of strong democracy is an ideal that does not account for the mischievous aspects of people. More than anything else, having a successful process probably means getting all involved to adopt the right attitude, that is, to think "what is best for all," not "what is best for me." How are we to accomplish this when people are socialized in an economized society where the pursuit of hedonistic utilities is strongly condoned from the time one leaves the womb to the time one enters the grave? If the authors had acknowledged this problem, they might have drawn attention to the need for empirical research on this topic.

A third important shortcoming is the convenient omission of national and international bodies and forces. By putting the spotlight on the local community, we fail to see the corporations and government agencies lurking in the shadows. Gould et al. (1996) realized that grassroots resistance to global corporatism needs to be a coordinated activity. No single community can stand up to the likes of General Electric or monsters of its ilk. Strong democratic talk at the local level is essential, yes, but without a coordinated network to establish political power, the local communities will

be vulnerable to the wanton whims of much more powerful global players.

These shortcomings take some of the shine off this brand new book, but they do not compromise its integrity. The book ought to be read because it integrates important contemporary themes and in doing so it enables discussion — both in academia and in local communities — to move ahead. Building bridges across literatures that are often separated by huge expanses only helps to forge clearer understandings and to promote innovative ways of thinking about the problems facing human societies today.

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Briefly Noted

Edited and Compiled by William S. Abruzzi
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Beyond Malthus: Nineteen Dimensions of the Population Challenge
by Lester Brown, Gary Gardner and Brian Halweil
W.W. Norton & Company: New York, 1999
ISBN 0-393-31906-7

Should you be worried about world population growth? The birth rate is falling in many industrialized countries; in some cases populations are actually shrinking. But in many nations where the population has exploded in recent decades, birth rates remain high, and populations will likely double or triple in the next half-century. Nevertheless, these nations are showing the early signs of "demographic fatigue" — a slowdown in population growth due not to smaller families but to increasing death rates.

The burden of enormous populations is making itself felt: as governments struggle with the need to educate children, create jobs, and deal with the environmental effects of population growth, any new threat-such as AIDS or aquifer depletion-can rapidly escalate to disastrous proportions. The industrialized countries have held HIV infection rates among their adult populations to one percent or less, but infection rates are as high as one-quarter of the adult population in some African countries. With their rising mortality rates, more reminiscent of the Dark Ages than the bright millennium so many had hoped for, these countries are falling back to an earlier demographic stage with high death rates and high birth rates, and ultimately little growth in population. Events in many countries could spiral out of control, leading to spreading political instability and economic decline.

In examining the stakes involved in potentially adding another 3.3 billion people to the world population over the next fifty years, the authors call for immediate expansion of international family planning assistance to the millions of couples who still lack access, and new investment in education young people-especially women-in the Third World, helping to promote a shift to smaller families.

Human Impact on Ancient Environments
by Charles Redman
University of Arizona Press: Tucson, AZ, 1999
ISBN 0-8165-1963-3

What happened on Easter Island? How did the Ancients cope with Environmental Stress? Are we doomed to destroy the earth?

Threats to biodiversity, food shortages, urban sprawl . . . lessons for environmental problems that confront us today may well be found in the past. The archaeological record contains hundreds of situations in which societies developed long-term sustainable relationships with their environments — and thousands in which the relationships were destructive.

Charles Redman demonstrates that much can be learned from an improved understanding of peoples who, through seemingly rational decisions, degraded their environments and threatened their own survival. By discussing archaeological case studies from around the world — from the deforestation of the Mayan lowlands to soil erosion in ancient Greece to the almost total depletion of resources on Easter Island — Redman reveals the never-ending impact of human culture on the environment.

Why Sex Matters
by Bobbi S. Low
Princeton University Press: Princeton, NJ, 1999
ISBN 0-691-02895-8

Why are men, like other primate males, usually the aggressors and risk takers? Why do women typically have fewer sexual partners? Why is killing infants routine in some cultures, but forbidden in others? Why is incest everywhere taboo? Bobbi Low ranges from ancient Rome to modern America, from the Amazon to the Arctic, and from single-celled organisms to international politics to show that these and many other questions about human behavior largely come down to evolution and sex. More precisely, as she shows in this comprehensive and accessible survey of behavioral and evolutionary ecology, they come down to the basic principle that all organisms evolved to maximize their reproductive success an seek resources to do so.

Low begins by reviewing the fundamental arguments and assumptions of behavioral ecology: selfish genes, conflicts of interest, and the tendency for sexes to reproduce through different behaviors. She explains why in primate species-from chimpanzees and apes to humans-males seek to spread their genes by devoting extraordinary efforts to finding mates, while females find it profitable to expend more effort on parenting. Low illustrates these sexual differences

among humans by showing that in places as diverse as the parishes of nineteenth-century Sweden, the villages of seventeenth-century China, and the forests of twentieth-century Brazil, men have tended to seek power and resources, from cattle to money, to attract mates, while women have sought a secure environment for raising children. She makes it clear, however, they have not done so simply through individual efforts or in a vacuum, but that men and women act in complex ways that involve cooperation and coalition building and that are shaped by culture, technology, tradition, and the availability of resources. Low also considers how the evolutionary drive to acquire resources leads to environmental degradation and warfare and asks whether our behavior could be channeled in more constructive ways.

Society for Human Ecology

XI International Conference
Democracy and Sustainability:
Adaptive Planning and Management

October 18 – 22, 2000
Snow King Resort
Jackson, Wyoming

The Society for Human Ecology has been meeting at 18-month intervals since 1985. Scholars and practitioners from around the world have gathered at these conferences to consider issues, exchange theory and research, and develop the emerging field of Human Ecology. The theme for 2000 reflects the growing emphasis on making environmental and resource decisions amongst an engaged and interested public. The 21st Century can be expected to see increasing public involvement while land managers strive to plan and manage in ways adaptive to ecological needs and human desires.

We anticipate significant participation by resource practitioners and interested parties in the Jackson Hole region at SHE-XI, including demonstration tours of human problems in resource management.

The structure of the Conference will include: **Paper Sessions; Symposia and Round Table Forums**; and **Poster Presentations** concerning **research** and **theoretical development** within **Human Ecology**. Traditional SHE subject areas have included population, evolution and human behavior, impacts of environmental change, trade and environment, collaborative planning and decision making, democratic processes, equity & environmental justice, perception of environment, ethics and aesthetics. **Papers** and **Forums** on **Human Ecology Education** and on **Sustainable Development** are also welcome.

If you would like to attend, chair a session, present a paper or poster, organize or take part in a round table, please reply at your earliest opportunity. Send presentation proposals, including Title, Authors, Abstract, and general category to: Jonathan_taylor@usgs.gov,
(Dr. Jonathan G. Taylor, First Vice President, Society for Human Ecology, C/O USGS/MESC, 4512 McMurray Ave, Fort Collins, CO 80525, FAX 970-226-9230).

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(Barbara Carter, Assistant to the Executive Director, Society for Human Ecology, c/o College of the Atlantic, 105 Eden Street, Bar Harbor, ME 04609, (207) 288-5015, Fax: (207) 288-4126).

Ethologists for the Ethical Treatment of Animals (EETA)

Mission Statement

Marc Bekoff and Jane Goodall would like to form a group to be called "Ethologists for the Ethical Treatment of Animals" (EETA). The purpose of EETA is to develop and to maintain the highest of ethical standards in comparative ethological research that is conducted in the field and in the laboratory. Furthermore, we wish to use the latest developments from research in cognitive ethology and on animal sentience to inform discussion and debate about the practical implications of available data and for the ongoing development of policy. If you are interested, please contact Marc Bekoff at <Marc.Bekoff@Colorado.edu> or at EPO Biology, University of Colorado, Boulder, Colorado 80309-0334 USA.

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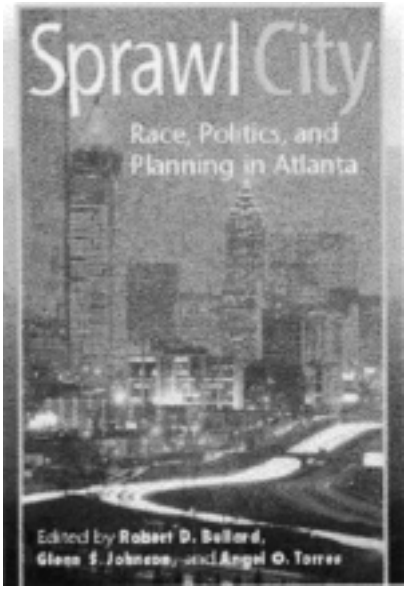

About the Editors

Robert D. Bullard is Ware Professor of Sociology and director of the Environmental Justice Resource Center at Clark Atlanta University. He is author of eight books including **Dumping in Dixie** (Westview, 1994) and **Just Transportation** (New Society, 1997). Glenn S. Johnson is assistant professor in the Department of Sociology, and research associate in the Environmental Justice Resource Center at Clark Atlanta University. Angel O. Torres is a GIS specialist with the Environmental Justice Resource Center.

Sprawl City

Race, Politics, and Planning in Atlanta

Edited By:	**Robert D. Bullard, Glenn S. Johnson, and Angel O. Torres**
Subject Area:	Planning/Sociology
Price:	Paper: $30.00
ISBN:	Paper: 1-55963-790-0
ORDERING:	How to place your order by phone or online.
Available	Spring 2000 Island Press. 6x9; 230 pages; tables, figures, maps, index

A serious but often overlooked impact of the random, unplanned growth commonly known as sprawl is its effect on economic and racial polarization. Sprawl-fueled growth pushes people further apart geographically, politically, economically, and socially. Atlanta, Georgia, one of the fastest-growing areas in the country, offers a striking example of sprawl-induced stratification.

Sprawl City uses a multi-disciplinary approach to analyze and critique the emerging crisis resulting from urban sprawl in the ten-county Atlanta metropolitan region. Local experts including sociologists, lawyers, urban planners, economists, educators, and health care professionals consider sprawl-related concerns as core environmental justice and civil rights issues.

Contributors focus on institutional constraints that are embedded in urban sprawl, considering how government housing, education, and transportation policies have aided and in some cases subsidized separate but unequal economic development and segregated neighborhoods. They offer analysis of the causes and consequences of urban sprawl, and outline policy recommendations and an action agenda for coping with sprawl-related problems, both in Atlanta and around the country.

Contributors are Natalie Brown, William W. Buzbee, James Chapman, Dennis Creech, Russell W. Irvine, Charles Jaret, Chad G. Johnson, Glenn S. Johnson, Kurt Phillips, Elizabeth P. Ruddiman, and Angel O. Torres.

The book illuminates the rising class and racial divisions underlying uneven growth and development, and provides a timely source of information for anyone concerned with those issues, including the growing environmental justice movement as well as planners, policy analysts, public officials, community leaders, and students of public policy, geography, or planning.

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The Society holds regular conferences, conducts workshops and symposia, and co-sponsors a variety of related activities to further integrate work among professionals in fields pertaining to human ecology. SHE is an affiliate of INTERCOL (International Association for Ecology) and IAIA (International Association for Impact Assessment) and works in a consortium with other national and regional human ecology organizations throughout the world. Members of SHE receive a subscription to *Human Ecology Review*; special purchase rates for the *International Directory of Human Ecologists* containing descriptions of the background, current work and areas of interest of human ecologists around the world; reduced rates on other selected journal publications; reduced registration fees at SHE conferences; the opportunity to join the society's special interest working groups on planning, health, modeling, theory, and education. Membership fees are $50 for regular members, $150 for contributing members, $1,000 for sustaining members, and $25 for student members. For membership information contact: The Society for Human Ecology, College of the Atlantic, 105 Eden Street, Bar Harbor, ME 04609, USA.

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Sample References

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SHE - XI

Democracy and Sustainability

Adaptive Planning and Management

Society for Human Ecology

Eleventh International Conference

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