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An Anthropological Ecology? Struggles to Secure Environmental Quality and Social Justice

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An Anthropological Ecology?

It is truly an honor to be here to help celebrate the professional contributions of Professor James Anderson. I thank the Department of Anthropology for this invitation to speak, and I thank Laura Nader for the suggestion of focusing on the relevance of Professor Anderson's work to the field of environmental anthropology and my own work in particular.

In the early 1970s, when James N. Anderson penned his ideas on the intersection of anthropology and ecology, Berkeley, and indeed the entire US, was a profoundly political place: civil rights protests, anti-war rallies, marches for women's rights, black power, red power, farm worker rights, and Earth Day activism were all part of the scene. These social movements—with their underlying critique of hierarchy, power, and the resulting inequities in the human condition—influenced the thinking, writing, and actions of all citizens, anthropologists included. Echoes within the discipline were most obvious in the growing concern and demand for an anthropology with social relevance, as so clearly stated by Dell Hymes, Laura Nader, Eric Wolf, and in the seminal work *Reinventing Anthropology* (Hymes 1969).

In 1973, when Anderson's essay "Ecological Anthropology and Anthropological Ecology" was published, the anthropology-ecology intersect largely focused on the question of how culture works to support and sustain human populations in diverse environmental settings. Huge strides had been made in our understanding of human biology and our application of ecosystemic concepts—adaptation, flexibility and resilience—especially in the diverse settings in which military operations took place (high altitude and other harsh environs). Anderson's review of the breadth and depth of the field of ecological anthropology was both extensive (including around 20 pages of references) and critical. When published, his vision of the ecology-anthropology intersect and its potential stood in sharp contrast to many of his peers.

In writing his synthesis essay on ecological anthropology, Anderson hoped to prompt disciplinary interest in *synecology*: the ecology of different species living in the

same habitat and their relations with one another. “Beginning in biology and spreading rapidly to other fields, a new synthetic view encompassing life and its consequences provides a concept of greater coordinating value than the concept of culture... This view, now generally known as the ‘systems approach,’ provides a holistic view of nature, a recognition of reciprocal relations among the various systems of an organism and of interactions among organisms” (Anderson 1973:180).

This vision of an anthropological ecology explores both the dynamics of human-environmental relationships *and* the varied consequences of those dynamics. This holistic, dynamic, synthetic approach to viewing and studying the world in which humans live was urgently needed, Anderson argued, as “a crisis of monumental proportions is taking shape, the consequence of unparalleled rates of demographic, technological, economic, organizational, ideological, and ecological change. Anthropology is one of the many disciplines that can contribute to possible solutions of the crisis in which nothing less than man’s survival is at stake” (Anderson 1973:181).

The notion of an anthropological ecology as a significant actor in a social movement that aggressively engages in the interdisciplinary study of and, ideally, the resolution of human environmental crisis resonated with some (see, for example, Vayda and McCay 1975), and ruffled the feathers of many others. Anderson knew his framing was provocative and might well be rejected by many a colleague comfortably roosting in their ivory tower: “I am well aware that my decision to advocate an interdisciplinary role for anthropology in working to solve the ecological crises brought about by accelerated demographic, technological, economic, ideological, and ecological changes may place me on controversial grounds” (Anderson 1973: 184).

Roy F. Ellen, for example, in his 1982 book *Environment, Subsistence and System* critiqued Anderson’s review with a warning of the disciplinary consequences of a moving away from a species-specific focus, arguing that Anderson’s “concern with survival of entire ecosystems” and call for a scientific humanism, while “well-meaning,” lacked scientific rigor and with its “vague appeals for holism and integration” was insufficient as a core organizing concept (Ellen 1982:92–93).

Others, however, especially the many colleagues and students whose perspectives and interests were shaped by their critical experience with power and its consequences on people and the planet, reacted very differently to Anderson’s insights and disciplinary call. In this provocative essay, many an anthropologist saw their own concerns and questions reflected in his query: “What contributions has an anthropological ecology to make to a relevant image of man and to a more adequate science of man?” (Anderson 1973:212). Many responded to the call, using Anderson’s review as a starting point to further refine and apply anthropological perspectives in addressing the environmental crisis dimensions of the human condition. Anderson’s work informed my own masters fieldwork on the factors driving change in Caribbean island landuse over a 400-year period and the resulting impacts on the hydrologic cycle (Johnston 1981), as well as my Ph.D. work on development and its many human environmental consequences in the US Virgin Islands (later published in Johnston 1987).

Thirty years ago, for me, the touchstone in this essay was Anderson’s quote

from (and further development of) an earlier work by Fraser Darling (1951:245) who wrote:

I was once asked by a social anthropologist what human ecology was that social anthropology was not. This was a very right and proper question, to which the reply should be there is no difference. But I ventured to say human ecology deals essentially with process. The value of the ecologist in society will be his power and accuracy in elucidating causes and forecasting consequences (206).

Anderson used this quote to underscore the potential contributions that might emerge from a purpose-driven endeavor that uses every method and approach available within and outside the discipline to develop the evidence that supports an understanding of one segment or another of “human reality” within a systems perspective.

My reading of Anderson’s call for a focus on systemic relationships as driving factors in the process of change is that Anderson, with his processual approach to systems analysis, clearly viewed the “system” as a complex and dynamic set of relationships between humans and the environment. His critique of anthropology’s limited and rather timid engagement with ecology, where the research objective involved identifying and describing human environmental settings and the adaptive function of behavior in those settings, was followed by a disciplinary challenge to focus on the driving forces that necessitate adaptation, and an examination of the consequences of these changes for individuals, societies, the human species and the global commons. Such framing implies research objectives and methods that tackle the thornier question of causality and consequence.

Anderson’s Call for an Anthropological Ecology: A Reflection of the Times

The context of the times helped shape the sense of urgency and societal possibilities in Anderson’s essay. These were the times: Civil rights protests. The 1968 assassinations of Robert Kennedy and Martin Luther King. Race riots. The emergence of an increasingly radical Black Power movement, American Indian movement, La Raza and farm worker rights movements, the feminist movement, and gay rights protests. Anti-war protests that by the early 1970s had grown to be a massive nationwide movement involving active members of the military as well as the broader public.

In this violent and transformative time Earth Day activism differed, in that the movement membership represented a very new, and very powerful demographic: the “activist” upper middle class. College-educated, relatively affluent, and sponsored by an influential politician (US Senator Gaylord Nelson), the movement was youthful in its leadership and in its broad-based membership. Around the country, young people (myself included) responded to organizer outreach, showing up with schoolmates and friends to the “Earth Walks for Survival” march on April 22, 1970. Collectively the Earth Day protests drew some 20 million people, the largest public protests the nation

had ever seen.

In a time of social and political chaos where revolution was not only a threat, but an increasingly celebrated societal norm, the political climate in Washington DC was more than receptive to the insider “progressive” change pitched by Earth Day sponsors who called for stronger governance, rather than the dissolution of government. The Civil Rights Act signed by President Johnson in 1968 was followed by President Nixon’s signature legislation: the January 1970 signing of the National Environmental Protection Act (NEPA, adopted by Congress in 1969), the December 1970 creation of the Environmental Protection Agency, the formation of the National Oceanic and Atmospheric Agency and adoption of the Clean Air Act, the Federal Water Pollution Control Act amendments of 1972, major expansion of National Parks and other protected lands, and a host of other actions. Implementing such legislation meant creating new agencies, jobs, and regulatory procedures. In so doing, the era of activism gave way to an era of burgeoning bureaucracy. Movement leaders took jobs in government, industry, and civil society organizations. The volunteer and radical dimensions of early 70s eco-activism were increasingly marginalized, replaced by paid staff and an advocacy agenda that prioritized working with and within rather than challenging or transforming systems of power.

If Anderson’s call for a scientific humanism was influenced by the growing awareness of “earth crisis” (environmental degradation, resource scarcity, and growing human misery), disciplinary reaction to this call was influenced both by shared common concern as well as the opportunities created by government response to the times.

1970s & 80s—Expanding Opportunities to Work, Advise, Experience and Confront Increasingly Painful Realities

The 1970s saw whole new industries created overnight, as scientists, economists and other experts were needed to develop the initial baseline surveys that establish and predict the impact to air quality, water quality, economy, endangered species, cultural resources, etc., and once a course of action is approved, to develop and implement the measures that mitigate or offset those impacts. The structural means to sustain an “applied” dimension of an academic discipline were thus firmly established. By the end of the decade, applied anthropologists, sociologists, archaeologists, biologists, geologists, and other experts were able to comfortably sustain a livelihood as environmental impact analysis experts, often working outside of the university or lab environment.

For various reasons, the disciplinary interest and capacity to engage in the socially relevant anthropological ecology envisioned by Anderson grew in its own organic way. Decolonization and Cold War competition for neo-colonial allegiance helped generate a climate of international aid for allegiance, resulting in a massive expansion in the construction of large infrastructure (dams, water diversions, sewage systems, roads and highway projects) which in turn generated staff and consultant opportunities for anthropologists to assist with development planning, social impact assessment, and compensation and resettlement schemes. Consider these facts: USAID had one full-

time anthropologist in the mid-70s, and 65 by the early 90s (Nolan 2002:72). A similar expansion occurred in the World Bank over the same time period, with hundreds more anthropologists serving as consultants. Staff positions also emerged within national, state and local government with anthropologists documenting customary knowledge and rights, facilitating the management of critical resources, conducting locally relevant research, and encouraging greater “voice” in resource decision making processes.

Social science work at NOAA-Sea Grant is illustrative. Shirley Fiske, during her tenure as Program Director for Social Science and Marine Policy for the National Sea Grant Program in Washington, helped expand and administer research programs, conducted outreach with the public, and worked with her interdisciplinary colleagues at NOAA to demonstrate that the health of marine resources involves bioecological *and* sociocultural processes (cf. Fiske 1992).

A similar scientific humanism is illustrated in the career efforts of Muriel “Miki” Crespi, chief ethnographer for the National Park Service. During the first Bush Administration she successfully argued for an integrated resource management approach, with ethnographers working in the same unit as biologists, economists, archaeologists, and others to develop management plans in partnership with Park stakeholders—including the current and former residents of the National Parks (cf. Crespi 2001). Hired as the sole ethnographer for the National Park system in the 1970s, by 2003 (the year she died) Crespi had a dozen ethnographers working with her conducting studies of traditional community life at parks and historic sites and involving residents in site planning and interpretation.

These changes in the anthropological workforce not only involved new employment sites, but also an expanded array of problem-focused research opportunities, especially international work. This expansion had disciplinary consequences. Simply put, people were getting out in the world, working in the midst of problematic settings and situations, using their training to describe, engage, advise, and (more often than not) finding themselves in sad and horrific situations. Development, resource management, environmental assessment—such endeavors that employed so many anthropologists often took place within broader contexts of gross inequality. As conditions on the ground festered, the linkages between environmental conditions, inequity, and human rights abuse became all the more apparent. Often, large infrastructure development served as a means to access, process, and consume plunder—creating conditions that stimulated violence.

The resulting consequence for American anthropology? Development-induced displacement, plunder, and violence increasingly occurred in the communities around the world that constituted “the field.” As such, we anthropologists personally experienced fear, threats, violence, and the suffering that comes with seeing others’ lives destroyed. People who had become our families of choice were now refugees or massacred in an escalation of violence that swept through entire regions during the 1970s and 80s (for example, Mexico, Guatemala, Honduras, El Salvador, Peru, Argentina, and beyond). Such events prompted a further radicalization of research questions, methods, and drive for socially relevant outcomes, an increased willingness to explore

interdisciplinary methods, and a growing widespread acceptance of collaborative, participatory, and action-research agendas (cf. Johnston 2001). For me, the drive to shape research questions, methods and socially relevant outcomes began with personal experiences that evolved into a career focus on human rights, environmental quality, health, and social justice struggles.¹

Towards an Environmental Anthropology

In the fall of 1991, while reading *Earth Island Journal*, I came across a call for contributions to support a United Nations Commission on Human Rights Sub-Commission on Prevention of Discrimination and Protection of Minorities investigation into the relationship between human rights and the environment. A Special Rapporteur had been appointed to examine the linkages between human rights abuse and environmental crisis, and a call for case study materials had been sent to the nations of the world and to concerned civil society organizations. The call for contributions suggested an opportunity for generalized reciprocity and I contacted the coordinating organization, Sierra Club Legal Defense Fund (now known as Earth Justice) to offer my assistance with summations from my library of case studies on ecocide and ethnocide, with the hopes that I could review the results from their call for contributions and incorporate relevant examples in my environmental anthropology text. At our first meeting I learned that while their framing of the human rights and environment abuse issue was expansive, their supporting case documentation largely consisted of instances of individual rights abuse, especially journalists, scientists and others imprisoned for publicizing environmental crimes. While they were aware of the indigenous rights movement and had contacted several key organizations, they had had no success in securing social science commitments to provide case-study materials on abuses experienced by cultural groups. I was surprised by this revelation, as so many anthropologists were reporting in conferences, newsletters, and scholarly publications case after case of development-induced ecocide leading to ethnocide.²

Realizing the need for a structured conduit to assert case studies and anthropological perspectives on the human rights–environment intersect, I eventually assembled a Human Rights and Environment (HRE) Committee, which had grown to include some 150 people: mostly anthropologists, and a few sociologists, geographers, and ecologists who responded to the call for case-study contributions. I served as the HRE chair and worked with the committee to draft, compile, and review case submissions that formed the core for annual reports to the UN Special Rapporteur, supporting in small part the broader effort to shape a Draft Declaration of Principles on Human Rights and the Environment.

Collectively, we argued that cultural groups as well as individuals had rights; these rights were being abused by broad processes, such as militarism and development; and, in countless cases involving the consequences of development and militarism, people have no recourse due to the lack of a viable judiciary and the inability to bring some actors (state governments, transnational corporations, international finan-

cial institutions) to a regional or international court where claims can be filed and some measure of remedy provided. We called for national and international governance that recognized the relationship between human rights and the environment and that worked towards environmental justice. These calls were articulated in project reports, SfAA and AAA newsletter articles, and edited collections in books and journals (Johnston 1992, 1993a, 1994a,b, 1995a). The Nathan Cummings Foundation grant allowed us to publish and send 450 free copies of a human rights and environment booklet to a global network of environmental organizations, human rights groups, and the foundations that sponsor their work (Johnston 1993b). Gregory Button, the last AAA Congressional fellow, was able to provide copies of this *Who Pays the Price?* booklet to all incoming members of the 103rd Congress (1993–95), and thus generate interest in environmental justice issues and support for legislation introduced by the late Senator Paul Wellstone in February 1994 (later addressed by President Clinton through Executive Order 12898).

The Human Rights and Environment Committee goal was to support the review of the Special Rapporteur, and with our documentation draw increased attention to abuses that result from processes, such as development and militarism, that are experienced by cultural groups. Evidence of success in achieving this goal, as measured by citations to our work in United Nation's reports, is hard to find. Our reports were received but rarely cited in the Special Rapporteur's annual reports to the UN Human Rights Commission. However, our broad-spectrum approach to "make the case" in varied public forums produced a number of unanticipated results. Thus, our reports helped frame World Watch Institute research on indigenous peoples and environmental justice issues, summaries of which were included in their widely published *State of the World* series (Durning 1993; Sachs 1995, 1996). Senator Barbara Boxer sent the *Who Pays the Price?* booklet to Energy Secretary Hazel O'Leary with a letter drawing her attention to the Rongelap case study and urging her to include the Marshall Islanders as part of the Advisory Committee on Human Radiation Experimentation review. The book *Who Pays the Price?* was sent to press in late 1993 as a Society for Applied Anthropology report, and advance copies were sent to Vice President Al Gore and Kathleen McGinty at the White House Council on Environmental Quality. According to their letters of acknowledgement, the book helped support new initiatives within the US Environmental Protection Agency emphasizing the community role in environmental decision making and problem solving. The US State Department later underwrote the costs to translate into Arabic and facilitate distribution 5,000 copies of the book in Africa and the Middle East.³

Over the years our social documentation of the "culpability gap"—where abuses occur as a result of state and transnational processes and in the absence of any formal viable judiciary—expanded to include a focus on response. By the mid-1990s, the human rights and environment committee shifted its focus, addressing the questions of what people, communities, and their governments are doing in response to these life and death situations and to what effect. Are there examples of relative success in achieving meaningful remedy? Are there lessons that might be applicable elsewhere?

How can anthropologists facilitate the ability of affected peoples to tell their own stories, document their own problems, and more effectively make the case for meaningful remedy? This work resulted in a number of edited collections, including the *Endangered Peoples* book series (Brower and Johnston 2007; Donahue and Johnston 1998; Fitzpatrick 2000; Forward 2001; Freeman 2000; Greaves 2002; Hitchcock 2002; Johnston 1997; Sponsel 2000; and Stonich 2001).⁴

In this work my role as an anthropologist was largely that of the social documentarian. Anthropological knowledge and expertise was used to examine experiences on the ground and draw linkages between micro and macro conditions, processes, and consequences with the overarching goal of asserting an advocacy voice that draws attention to and seeks remedy for human environmental rights abuse. I also worked as a union organizer of sorts—working with like-minded colleagues to help shape within our professional organizations the space for collective engagement on human rights and environment issues, and the structural mechanisms for asserting a disciplinary voice in national and international political arenas (Johnston 1995a,b; 2001).

Publication of this action-oriented research prompted requests from similarly affected communities, and government agencies on behalf of communities, for anthropological assistance in documenting conditions in ways that might encourage increased acknowledgement of culpability and, ideally, generate the political will to fashion some sort of remedy. One such example is the 1996 request to the SfAA, from the US Environmental Protection Agency, to develop a cooperative agreement providing anthropological expertise and assistance to communities involved in environmental decision-making and problem-solving processes. I worked with SfAA President Jay Schensul and others to draft a co-operative agreement and served as the project director for the first four years of the five-year project. My government counterpart was Theresa Trainor, a policy analyst in the Office of Sustainable Ecosystems and Communities, whose masters degree in anthropology made her one of the few “non-economic” social scientists working for the EPA at that time.

The SfAA-EPA Cooperative Agreement was consciously shaped as “backyard” anthropology: work that involves the application of anthropological skills and knowledge to problems and needs in the towns and communities we call home. This backyard approach was a reflection of the rapidly growing interest in a problem-focused, public service-oriented anthropology, where the “field” is literally in your backyard and the close distance between engagement and outcome allows a stronger sense of responsibility and understanding of the social impact of doing anthropology. In essence, our advocacy goal was to both expand the social relevance of environmental anthropology and strengthen the presence and efficacy of anthropological work in the environmental labor market. Our mission and various project activities were developed in cooperation with the EPA and with the peer review assistance of an advisory committee of cultural, medical, and ecological anthropologists working in academia, government, communities, and with tribal nations.⁵

Developing activities of equal interest to the EPA and the SfAA required fashioning a collaborative partnership that sharply contrasted with other disciplinary-agen-

cy relationships. Our funded activities were not the product of client-consultant relationships, where ultimate power and authority in defining the problem, approaches, and reporting terms largely rests in the hands of the contracting agency. Nor were funded activities the product of federal research awards, where questions, methods, and outcomes are defined and shaped by the scholars who produce scientific knowledge for the benefit of the scientific community. Rather, environmental anthropology projects were consciously framed as “technical assistance” shaped and implemented through partnership negotiation. This framing of anthropology as community-based technical assistance allowed us to prioritize problem-focused work using anthropological tools and techniques to address specific public interest needs and producing concrete outcomes. Projects funded under the cooperative agreement partnership were participatory and collaborative: reflecting the interests, actions, and code of ethics of the discipline, the mission and mandate of a federal regulatory agency, as well as the interests and concerns of civil society, communities, governmental agencies, and American Indian tribes. All told, I drafted the initial work plans and managed anthropological assistance in more than 30 different community-based environmental health, restoration, planning and other problem-solving projects across the United States.⁶

The community-based environmental anthropology work described above involved working with governmental agencies to better assist communities in a common effort to understand and resolve environmental problems. This involved largely non-confrontational ecopolitics, in that all parties acknowledged an environmental crisis existed, and somewhere some entity produced funding and the will to address the problem. In such contexts the anthropologist’s role was to provide the data, tools, and help facilitate informed and meaningful participation in decision-making and remediation processes. Other work resulting from the human rights and environment disciplinary outreach campaign involved a much more political and personally engaged scientific research process aimed at teasing out the nature of the human/environmental crisis, the varied failures to protect human rights, and the consequences of those failures.⁷

One example involves my work documenting the biocultural impacts of nuclear weapons testing in the Marshall Islands.⁸ Acutely exposed to radioactive fallout following the March 1, 1954 detonation of a thermonuclear bomb, Bravo Test, the Rongelap community in the Marshall Islands was initially evacuated and enrolled in a classified research study documenting radiation burns and other acute effects. Three years later, with assurances that it was now safe, they were returned to their contaminated islands and over the next four decades they served, without informed consent, as subjects in research documenting the ways radiation moved through the environment, food chain, and human body. Biomedical examinations, sampling, and procedures focused on documenting the wide array of degenerative health effects of radiation exposure, while treatment was largely limited to specific radiogenic cancers. They were evacuated in 1985 after learning that their islands were still dangerously contaminated and they continue to live in exile (Johnston 1994c, Barker 1997).

The Marshall Islands work involved the methodological challenge of how to quantify the qualitative: What is the value of the loss of land, when such loss not only

harms the individual, household or community, but also results in the loss of the means to support and sustain a cultural way of life? How do you identify the cumulative and synergistic effects on health, community, and culture when loss of use is the result of environmental contamination from nuclear weapons fallout? How do you value such damages to the marine, terrestrial, and arboreal ecosystem? How do you value these damages in ways that honor and respect Marshallese notions of meaningful remedy, remedy that largely involves acquiring new means to sustain a healthy way of life?

Many people in the Rongelap community had submitted complaints on their treatment and their injuries during the weapons testing period (1946–1958) and later years when they served as human subjects in Atomic Energy Commission–funded research conducted Brookhaven National Lab documenting the long-term effects of radiation exposure of a human population (1954–1992). Many had testified in the United States, United Nations, and other international forums as well. Survivor accounts, however, had been easily dismissed as anecdotal: the unsubstantiated, biased, and imperfect understandings of victims. So, at a more fundamental level, our work involved the challenge of transforming how research was conducted (we introduced transparent, participatory, and collaborative research as the primary means of identifying and asserting Marshallese voice), and the related challenge of transforming how this voice was perceived and valued as a formal element in Tribunal proceedings. The then-existing role of Marshallese voice in Tribunal proceedings was that of survivor and witness whose anecdotal testimony suggests, amplifies, or illustrates complaints where the authenticity of complaints and value of damages is determined by an outside expert. We sought to introduce a new role, that of the cultural expert whose account constitutes a source of credible evidence concerning the value of critical resources that support customary ways of life, and thereby allows a broader understanding of injury, consequential damages, and remedial needs.

Addressing these multiple challenges required archival research, evidentiary analysis of a recently declassified scientific record, ethnographic research, and most importantly, participatory and collaborative work that included repeated interdisciplinary and Marshallese review of research plans, methodologies, briefings, draft reports, and findings. For example, when we encountered evidence in the declassified biomedical record of an official policy to report, but not study or treat any incidence of miscarriage and congenital birth defects, the Rongelap community helped to compile lists of affected women and children. And, to help broaden Tribunal procedures for valuing land (at the time the only recognized value of land was a market value for the lease rights to dry land), with the help of Rongelap experts we created a series of ethnographic maps for each atoll depicting sacred sites and critical resources such as springs providing drinking water, giant clam beds, and important reefs. We also located classified documents that illustrated US awareness of customary law and property rights, especially the awareness that such rights extended into the marine realm. With the help of interdisciplinary reviewers from the scientific and legal communities, we identified case precedents and summarized the methods and rationale for valuing damages to natural and cultural resources. With input from anthropologists in Australia, Canada,

and the US, we developed a briefing citing the legal precedents granting expert witness status to indigenous community members as cultural experts. In short, we deployed a holistic approach to establish traditional ways of life, identified the critical resources that sustained those traditions, detailed the chain of events and injuries, and identified the diverse consequences that resulted when lands, lives, and livelihoods were damaged and destroyed by nuclear weapons fallout.

Our strategy for communicating this history and its consequences in an expert witness report and in the Nuclear Claims Tribunal proceedings involved a dual narrative consisting of Marshallese testimony and scientific “voice” from the declassified record which served to contextualize and support each element of the Rongelap complaint. In addition to narrative voice, the Rongelap community provided record books and maps depicting land claims and land-use history for exhibits. Rongelap women prepared and submitted as evidence a list of names of those people who had died from radiation-related illnesses and those people who suffered from a preventable epidemic of polio. The participatory and collaborative approach to this research also involved substantial peer review of the initial research plan, draft findings, and expert witness reports. The end result was an assessment of the consequential damages of nuclear weapons testing, human-subject experimentation, and involuntary resettlement. The expert witness report demonstrated social, cultural, physical, economic and environmental effects with anecdotal accounts supported by the declassified scientific record, and presented valuation assessments for each category of injury using United States standards, international case precedents, and the community notion of a meaningful remedy.⁹

On April 17, 2007, some sixteen years since the first claims were filed, and five and half years after presenting the expert witness findings to the Tribunal, the Nuclear Claims Tribunal finally issued their decision in the Rongelap case, accepting the complaint and ordering some \$1,031,231,200 in compensation for remediation and restoration of contaminated atolls, as compensation for past and future lost property value, and as compensation for the pain, suffering and hardships that are consequence of those injuries. This award includes “loss of way of life damages” including the loss of the means to live in a healthy fashion on the land (people were on island, but exposed to high levels of radiation). It includes compensation for serving, without informed consent, as a human subject in long-term biomedical studies. And it includes additional personal injury awards to subjects identified as receiving radioisotope injections as part of those studies (Nuclear Claims Tribunal 2007).

While this result demonstrates that a credible outcome can be achieved through a participatory and collaborative action-research process, meaningful remedy has yet to be fully realized (an Act of United States Congress is needed to fully fund Tribunal awards). The fact that Rongelap survivors were able to attend, testify and see long-contested and denied experiences accepted by Tribunal judges, without question, as expert evidence in a formal court was significant. Elements of meaningful remedy were also achieved with the Tribunal findings that broadened the principle of just compensation from a model of economic compensation for damage and a loss of individual property,

to a broader model of community damages and remedial needs associated with the loss of a healthy way of life. This transformation was arguably achieved as a result of our collaborative and participatory methods. We helped create the space for Tribunal judges to listen and consider the Marshallese perspective and experience in new ways.

It is important to note that such interdisciplinary, purpose-driven, evidenced-based work is developed with a strong reliance on “four field” anthropology. A holistic anthropology is essential when studying and attempting to address the consequential damages of the human environmental disasters that too commonly define our times. In my work documenting the human rights abuses accompanying dam development in Guatemala (Johnston 2005, 2009b), for example, the communication skills of linguists and translators allowed Maya A’chi, Quiche, Spanish and English speaking people to communicate and participate in every stage of the study process. Archaeological research substantiated the connections between existing villages and ancestral populations. Excavation and forensic analysis substantiated informant testimony: people had been massacred; they did not simply flee the area, as claimed by the government. The Rio Negro exhumation was one of the first to have shaped the events that led to the 1996 Peace Accords. Medical and ecological anthropologists advised and assisted in developing the household survey and damage assessment tool. Sociocultural, historical, political and economic anthropology helped shape the conceptual approach, providing key elements of the historical chain of events. The end result was an increased public awareness of how dam development served as a driving force in the escalation of violence and the human and environmental costs of this history. This awareness has led to increased political will to negotiate remedial actions, with the government of Guatemala accepting the evidentiary analysis as a definitive statement of damages and a plan for reparation. Documenting this history has also helped encourage changes in how development is planned and implemented in Guatemala (Johnston 2005, 2009b, 2010).

Conclusion

The planetary right to a healthy environment, and the related notion of sustainability, was a key concept emerging from the 1990 global Earth Day activism and subsequent 1992 United Nations Earth Summit in Rio de Janeiro. The Earth Summit was attended by representatives of 172 governments and 2,400 NGOs. Concerned about the relationship between economic development and environmental degradation, they adopted three major agreements (Agenda 21, the Rio Declaration on Environment and Development, the Statement of Forest Principles), and two legally-binding conventions (the United Nations Framework Convention on Climate Change and the United Nations Convention on Biological Diversity). At that Summit, one anthropologist, Emilio Moran, attended as a formal delegate of the AAA, and several others as advocates with and for indigenous peoples (including David Maybury Lewis and Terry Turner).

In the ten years that followed Earth Summit, the right to a healthy environment was formally recognized in enactment of 90+ national constitutions as either a

justiciable right, or a noted element of the constitutional rights to life, health and family life. While government created policy (and was very much the hallmark of the 90s and its rights-based governance), actual implementation was subsequently hindered or made impossible by the resurgent security state accompanying the Bush presidency in the US and the new culture of governance that emerged around the world.

In his 1973 review essay, James Anderson called for an anthropology that, in its embrace of a holistic, systemic dynamic, ecology produces transformative insights and improves the biocultural reality of life on this planet. He called for an anthropology that has significant influence in how we think about the human environmental relationship, and how we attempt to address the serious problems that threaten survival. In the history and illustrative examples offered in this presentation, I argue that we are well on our way to such an anthropology.

In today's environmental anthropology, we document, assess, and interpret local conditions, and through these efforts seek to understand and improve the human condition. Such purpose-driven work addresses the ulcerating conditions of life in the here and now, as well as what we see coming down the line if conditions do not change. In this "anticipatory anthropology," we use research findings to influence broad publics and specific audiences with the goal of shaping policy agendas in ways that might forestall or prevent future crises (cf. Hale 2008). For example, we see anthropological insight and voices shaping the public understanding of the social context of recent "natural disasters" (Katrina, Sri Lanka, Haiti), drawing public attention to water, public health, and vulnerability in the making of disaster and in the response to disaster (cf. Button 2008, 2010; Gunewardena and Schuller 2008; Johnston 2008; Whiteford and Whiteford 2006; Oliver-Smith 2009; Schuller 2010). Similarly, place-based and comparative anthropological research has led to a widespread engagement in global advocacy and negotiations over climate change, drawing public attention to the inequities in experiencing rising sea levels, contaminated water supply, enduring drought, floods, and violent storms, as well as the various human rights dimensions of climate change response.

Years ago, Roy Rappaport described this socially-engaged, problem-focused work as "the anthropology of trouble" (Rappaport 1993). Personally, I see our disciplinary engagement with human environmental crises as the necessary, and perhaps inevitable response to the consequential damages of plunder (Mattei and Nader 2008). There seems to be an ever-expanding set of urgent crises, and no end of opportunities for meaningful anthropological engagement. Trouble is a high-growth business.

Now, more than ever, Anderson's call for a humanistic science is needed, especially an anthropological engagement that moves beyond our tried and true norms. As a discipline we still largely train our students to work as independent actors, to know and engage deeply in case-place specific ways. We still flounder about in our methods to connect the micro with macro, aggressively exploring systems of power, and effectively engaging in the larger conversation on the state of the world and the directions we might take. We value our peers and award positions, tenure, and career stability for work that is largely discipline-focused, devaluing or dismissing work that is interdisci-

plinary, conducted as part of a team, involving public outreach and advisory roles, and involving public service or political engagement, such as advocacy-oriented work. In short, while we have many examples of success in shaping “an anthropological ecology,” we have yet to thoroughly realize the challenge embedded in Anderson’s 1973 question: What is, or what might be, the power of an anthropological ecology?

NOTES

¹ Much of the text in this section of the paper appears with greater detail as part of a special issue on Engaged Anthropology in the journal *Current Anthropology* (Johnston 2010b).

² See, for example, publications of the International Working Group of Indigenous Affairs; Colonialism and Indigenous Minorities Research and Action; Minority Rights Group; Survival International; and Cultural Survival; also, Bodley 1975, 1988; Burger 1987, 1990, Downing and Kushner 1988.

³ In 1997, following the organization of the SfAA Environmental Anthropology Project, the SfAA Committee for Human Rights and the Environment was discharged of its duties. The Arabic version of *Who pays the price? The sociocultural context of environmental crisis* was published by Dar Al Faris, Amman in 1997 as an initiative of the US Department of State Arabic book program and is distributed by the US Embassy in Amman, Jordan.

⁴ This description of the human rights and environment committee work has been previously published in various forms. See Johnston 1994a, 1995a, 1995b, 2001b.

⁵ All work proposed, funded, and implemented through the SfAA-EPA Cooperative Agreement was developed in partnership with EPA project partner Theresa Trainor and the environmental anthropology project advisory committee: Bonnie McCay, Muriel (Miki) Crespi, Ed Liebow, Miguel Vasquez, and SfAA Presidents Jay Schensul, John Young, Linda Bennett, and Noel Chrisman. In the final year of the project (2001), Rob Winthrop served as project director managing the activities of interns and fellows, and I conducted a project evaluation and drafted technical assistance brochures.

⁶ See the SfAA Environmental Anthropology project page <http://www.sfaa.net/eap/abouteap.html> to access links to the SfAA-EPA Cooperative Agreement, and to access project brochures, reports, conference papers, and other publications. The Cooperative Agreement is reproduced in its entirety at <http://www.sfaa.net/eap/cooptext.html>. An evaluation of the project and its outcomes was published as a special Environmental Anthropology issue of *Practicing Anthropology* (Johnston and Young 2002).

⁷ This praxis has its critics. The complaint that anthropology as “social work” destroys the objectivity and integrity of anthropological science is still a powerful criticism, powerful enough to cause the rescinding of the Darkness in El Dorado Task Force recommendation that partici-

patory and collaborative methods be a core element of research with indigenous populations (Gross and Platner 2002; Johnston, forthcoming).

⁸ For a critical assessment of professional organization–sponsored human rights advocacy see discussion of the AAA Committee for Human Rights investigation of Chilean dam development and displacement of the Pehuenche, in Johnston and Garcia-Downing (2004). For an example of how professional organization–sponsorship helped insure investigations were independent, communicated international interest, and helped create rights-protective space in a consequential damage assessment and plan for reparations in Guatemala, see Johnston (2009b). In the Guatemala case, American Association for the Advancement of Science and AAA sponsorship helped insure that research was conducted as an independent scientific investigation, with full professional peer review. In later years the AAAS expanded on this approach, creating their Science and Human Rights coalition (2005) and an “on-call” program scientists with human rights needs (2008).

⁹ Various versions of this summation of problem and approach to the Marshallese work have been published in the following publications: Johnston and Barker 1999a, 2000, 2001, 2008.

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