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**Brief Essays
On
Some of the Contributions of the
Social Sciences to
Ecosystem Planning and Management**

by

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Highlights

The following “mini” essays provide ways of thinking about some of the contributions of the social sciences and humanities. They try to illustrate the wide array of human dimensions that professionals need to understand in efforts to become more effective ecosystem planners and managers. The essays focus on the following general themes:

1. Cautionary Tale of Virtual Reality—looks at some human characteristics we bring to our professional life
2. Different Questions/Different Answers: Trying to Understand the Social Content of Natural Resources—explores the social content of natural resources and the concomitant need to ask different questions that address social content as compared to only biological or physical content of natural resources.
3. Between a Rock and a Soft Place—emphasizes one of the values of integrating the social sciences and humanities, i.e., their contribution to achieving greater relevance, while also emphasizing the need to maintain appropriate levels of rigor in the process of integration.
4. Selected Human Values and the Conservation of Biodiversity—focuses on the need to understand human values and how they affect the ways we think about and address complex issues such as the conservation of biological diversity;
5. Chinese Baseball: Thinking About the Challenge of Meeting the Needs of Humans and Other Living and Non-Living Things—raises one of the ever constant issues of understanding and being able to shape our planning and management activities in ways that address symptoms as compared to causes of problems.
6. Being On Target: Do We Always Hit the Mark as We Search for Solutions—questions some of our efforts to go back after we have taken action, proclaiming victory or achievement of results that may or may not have been achieved, except perhaps accidentally.

Cautionary Tale of Virtual Reality

In my first job out of college, I was Assistant Curator of the Alamo. One of many unusual experiences I had that summer in 1972 occurred after Walt Disney presented his TV version of the battle of the Alamo. On the following morning, a young boy came into that Shrine to many Texans. It was evident from his question that what he believed he witnessed on TV the night before to be real did not connect in some ways with the reality that he was seeing on that summer morning inside the Alamo itself. He walked up to me, and amidst all of the questions I was being asked by other visitors, his question was the one that gave me most pause. He asked: "Where did the tourists hide when the battle took place?"

For this young boy, the "reality" of the battle he had seen on the television the night before began to collide with the reality of the context in which he found himself the next morning. The building he walked into looked the same as the one he saw on the screen. Some of the relics of the battle, including Davey Crockett's rifle, were on exhibit. He overheard people around him talking about the battle. He evidently began to bring new information from his own perceptions on site and re-evaluate what he thought he had "known" to be true with the new facts that he was observing for himself. He dealt with the discrepancies by somehow superimposing the one way he thought he had understood the world from the evening before onto the way that he was now seeing the world. And the convergence of these two messages came together in a seemingly inexplicable and perhaps even bizarre juxtaposition of belief and reality.

This story illustrates one of the real challenges--a human dimension of our own professional lives-- that all of us must constantly come to grips with in our work. We have been educated to think about how the world "should" work. However, that does not necessarily converge with the reality that we confront when we go to the field. We often have different assumptions, ways of defining problems, even selecting the problems on which we will work, and thinking about alternative solutions to problems. All of these may or may not be the same as those of our colleagues and more importantly, they may not be the same as those held by the local resource managers who farm, herd, hunt, fish and do other things that meet their needs and desires.

Thus, we often superimpose our view of the world on a world that exists. And, we may come up with a similarly strange question as the one that the young boy asked me at the Alamo over 24 years ago. (Source: Parker, J. Kathy. 1995. "The Human Dimensions of Ecosystem Management." Invited plenary presentation at the New England Society of American Foresters. March 1995. Burlington, VT)

Different Questions/Different Answers: Trying to Understand the Social Content of Natural Resources

If we accept the traditional definition of forestry as an applied science dealing only with biophysical phenomena, we might ask:

- what species are appropriate for specific sites;
- what preparation practices do we need to use for different soil types;
- what techniques and timing do we need for silvicultural management;
- what technologies do we need for harvesting.

It is becoming increasingly clear that we should make more adjustments to address the fact that while forests are biophysical entities, forestry is a human activity. And, forests and trees typically have social content. Therefore, while forestry includes the application of biological and physical manipulations of the forest, trees, and related natural resources, it should also include the goals defined to meet a society's needs, the organizational structures of institutions to achieve those goals, the values and beliefs of people, and so forth. Integrating these perspectives, then, we should include questions including but not limited to:

- what species, appropriate for this site, are people most likely to select in order to meet the priorities of their households;
- what organization of a forest service, including division of labor, hierarchy, rules and regulations is needed to establish, maintain, protect, produce, and distribute the goods and services provided by forests and trees;
- what is the social content of trees; e.g., what values and beliefs do they reflect as sacred groves or as residences for ghosts and how will that affect our ability to work with people to manage, protect, and/or utilize certain trees.

The point, is that the kind of question and the "way a question is asked limits and disposes the ways in which answer to it--right or wrong--may be given" (Langer, 1951:15). We must understand that some of the ways we think about the world in biological and physical terms blind us to the larger social purposes and realities in the daily lives of people. (Source: Parker, J. Kathy. 1990. "Strands in the Web of Life." Invited Plenary Presentation. Society of American Foresters National Conference. Washington, D.C.)

Between a Rock and a Soft Place

Whatever our disciplinary education might be, one of our most important challenges as researchers and practitioners who want and/or feel they must integrate human dimensions in natural resources research and management is to take a variation on the rock and hard place metaphor as our guidance. One variation, however, makes an important contribution to our thinking about the challenge. It is a corruption" of the phrase, proposed by a psychologist. In his work, he talked about being caught between a rock and a soft place". By this, he intended (not as some might jump to the quick conclusion

about stereotypes of the hard and soft sciences) the rock to represent efforts to ensure rigor and the soft place to represent the ever-constant need to strive for and achieve relevance in our efforts.

The challenges of working between a rock and soft place are perhaps greater than those encountered between the old rock and hard place. On the one hand, the challenges occur in a world that revolves around sets of institutions and individuals that make up academic and professional disciplines and which strive to achieve the rigor that their scientific belief systems hold as the standard. On the other hand, the challenges occur in a world that revolves around other sets of institutions and individuals, including local communities, members of households throughout the world as they strive to deal with the realities of their existence in oftentimes very harsh conditions, and non-resident populations that may value given areas as places for rest and relaxation. As these different worlds come together (and unfortunately they sometimes seem to collide when they do), there must be an interplay between the need and desire to be scientifically rigorous and the need and desire to be relevant to the needs and desired conditions of many publics. The outcome of this interplay is hopefully to become more effective researchers and field practitioners. (Source: Parker, J. Kathy. 1996. Integrating Gender Considerations with Rigor and Relevance: An Opportunity to Learn by Looking at Past Mistakes.” in: Callihan, David, et al. Results-Oriented Natural Resource Management (RESON) First Phase Synthesis Report: Experience to Date and Anticipated Experiences in the Future. Draft. Prepared for the US Agency for International Development)

Selected Human Values and the Conservation of Biodiversity

If, over the past 500 million plus years, species extinction has been occurring with a great deal of regularity and sometimes at exceedingly fast rates with the demise of many species and whole ecosystems, why is it that the human species thinks it can or should change the phenomenon of extinction of itself and/or other biological species now? Another way to think about it is not whether or how, but why do we think we can or should be managing biodiversity?

We believe the answer resides in better defining and understanding human dimensions relevant to the conservation of biodiversity.

In the book Quantum Self: Human Nature and Consciousness Defined by the New Physics, Danah Zohar (1991: 142-143), a physicist states:

At the subatomic level of elementary particles, there is no death in the sense of permanent loss. The quantum vacuum, which is the underlying reality of all that is, exists eternally.nothing is ever lost.

Individual particles arise out of the vacuum, exist for a brief while until they collide with other particles, and then either become something new or return to the source from which they sprang. But their brief passage is not in vain.Each quantum event that happens leaves its trace, its ‘footprints on the sands of time.’

What we would like to emphasize here is that we could focus on many human values, but for the moment, we will focus only on one. If, for example, we take the perspective of the new physics, as an analogy, it would lead us to think of "loss" of species as meaning nothing more than mere change. The concept of loss as something to be stopped, mitigated or mourned perhaps reflects many human values that suggest that loss is and should be something for which we try to manage. Aldo Leopold (1966:8) noted, in A Sand County Almanac, that: Man brings all things to the test of himself...". We take Leopold's observation as including even fears of loss and what it means to humans. Leopold (1966:54) later in the book noted that: It is a kind providence that has withheld a sense of history from the thousands of species of plants and animals that have exterminated each other to build the present world. The same kind providence now withholds it from us. Few grieved when the last buffalo left Wisconsin, and few will grieve when the last Silphium [plant] follows him to the lush prairies of the never-never land."

We would ask if there are there contradictions here that we should explore both intellectually and emotionally? What, if anything, does this have to do with human fear or concerns over loss or mortality? Are some of our efforts to manage or preserve diversity, a reaction similar to what has been defined as the steps of denial, anger, guilt (individual or collective), etc. that Kubler-Ross and others describe when they talk about how humans try to come to grips with their own death or the death of others they cherish? These seem to be very powerful human values that we need to think about as we reflect on time, space and biodiversity. (Source: McFadden, Max W. and J. Kathy Parker. 1996. Space, Time, and The Human Dimensions of Biodiversity. Presented at the North American Forest Insect Work Conference. San Antonio.)

Chinese Baseball: Thinking About the Challenge of Meeting the Needs of Humans and Other Living and Non-Living Things

In many ways, those of us working on the integration of the social and biophysical sciences have a challenge that can be likened to Chinese Baseball. As described by management expert Ralph Siu, this game is played like American baseball in most ways. Chinese baseball, however, has one basic difference, for:

...after the ball leaves the pitcher's hand and as long as the ball is in the air, anyone can move any of the bases anywhere.

In other words, everything is constantly changing--not only the events themselves, but also the very rules governing those events. This kind of arena is alien to the scientific tradition of fixed boundary conditions, clearly defined variables, non-subjective assessments, and rational consistency within a closed system (Siu, 1978:84).

Fundamentally, the forestry and natural resource management professions face the dynamics of change, unfixed boundary conditions, fuzzy definitions of variables, subjective assessments, consistently irrational or different kinds of rational beliefs, and open systems. All these heighten

the level of challenge that we, as professionals, have in meeting the real needs of humans and other living and non-living things.

In part, meeting this challenge will depend on who defines those needs and how they define them as much as in the ability to respond with plans, technologies, and policies. We must recognize that often we have our solutions in search of someone else's problems and those problems and solutions may not match. We think that we are the most skilled at defining and solving those problems.

We also must recognize that we frequently deal only with the symptoms of problems. They typically show up in the form of biological and/or physical degradation. We know that there are indeed technical solutions to address these symptoms. Therefore, our response to dealing with symptoms is usually one or a combination of biological and physical interventions.

However, many of the challenges/problems of unsustainable forestry, agriculture, and so forth are caused by humans and therefore need to (at least in part) have social, economic, political, and institutional responses that can be combined with biophysical responses/solutions to achieve some greater possibility of sustainability.

Of course, teasing apart what are symptoms and what are causes is one step in the process. Another is figuring out how to deal with what is a symptom as compared to a cause. And, frequently those trying to address a given problem may only be skilled and/or have sufficient resources to deal with the biophysical symptoms rather than some of the deeper socioeconomic causes. Thus, the responses often fail, and the complexity is left unaddressed. This will be a continuing challenge.

Being On Target: Do We Always Hit the Mark as We Search for Solutions

The finally essay begins with a story that reminds me of what quite a few of us may feel like in our efforts to really hit the mark as those of us, as outsiders, work with local people to seek and find solutions to global or local concerns. This is a story about

"A duke ... hunting in the forest with his retinue of men-at-arms and servants; [when] he came across a tree. Upon it, archery targets were painted, and smack in the middle of each was an arrow. 'Who is this incredibly fine archer?' cried the duke. 'I must find him!'

After continuing through the forest for a few miles he came upon a small boy carrying a bow and arrow. Eventually the boy admitted that it was he who shot the arrows plumb in the center of all the targets.

'You didn't just walk up to the targets and hammer the arrows into the middle, did you?' asked the duke worriedly.

'No my lord. I shot them from a hundred paces. I swear it by all that I hold holy.'

'That is truly astonishing,' said the duke. 'I hereby admit you into my service.'
..... 'But I must ask one favor in return,' the duke continued. 'You must tell me how you came to be such an outstanding shot.'

'Well,' said the boy, 'first I fire the arrow at the tree, and then I paint the target around it.'" (cited in Cohen and Stewart 1994)

I don't know about most readers, but I have had more than my share of experiences where I have had to undertake action and then had to go back later to show somehow, some way, to some one how I did what I did. How often do we paint the target after we have done the deed? Lots of our purported successful local solutions may be constructed in somewhat similar fashion whether you or I would admit to it or not.

In the story about the boy and his target we have an opportunity to think about how we often are called upon to act first (many times because we are forced to do so by the courts, or the Congress or the publics we serve). But, then we confront the need to show our results, so we go back to find out whether we hit a mark, our mark, or anyone's for that matter, or whether we have to draw a target to show the world that we could hit some mark some where. This is a very uncomfortable position to be in, and many of us probably are in this position on a daily if not hourly basis is my guess. It is an unresolvable dilemma in many cases, unless perhaps you can paint your target quickly and discretely. Some of us are all too adept at this unfortunately, and in the end this may cause a greater problem for us all. Both the difficult challenges of addressing these issues and the ethical dimensions of our responses are what I find most compelling about this story. (Source: Parker, J. Kathy. 1997. "Selected Reflections on Some Points to Keep in Mind as We Address Global Concerns and Develop Local Solutions: Development of Secondary Roads, Too Many Visitors in the Wilderness, The Bark of a Tree, The Death of a Stag, A Boy and His Target, and Out of a Cuckoo's Nest". Presented at the Society of American Foresters National Convention, Memphis, TN).