Finding Common Ground in Biological Conservation: Beyond the Anthropocentric vs. Biocentric Controversy

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ABSTRACT
A generalized demand for public decision processes to be open, integrative, and adaptive is increasingly evident in the environmental debate. In biological conservation, however, as in most other environmental controversies, we continue to find that our basic nature (evolutionary and cultural) generally predisposes us to exclude and confront one another in words or deeds, sometimes violently. In this essay we look at how differences in perspectives, how we deal with differences in perspectives, and how we deal with each other as people may work against broad democratic participation and the search for common ground. We argue that widely-invoked dichotomous classifications of perspectives such as the "anthropocentric vs. biocentric" characterization can be an obstacle to finding the common ground, because they tend to be rigid, exclusive, and confrontational in nature. The conditioning factors which underlie the habitual use of such characterizations include the "we vs. they" phenomenon, the age old debate pertaining to the relationship of humans with the rest of the world, and overly simplistic views of self and others. As an alternative, we suggest the use of more open, flexible, and constructive approaches that account for differences in people's perspectives. We provide an example of such an approach based on people's identities, expectations, and demands, and we encourage the exploration of better ways to find common ground for environmental sustainability.

Making a decision about biological conservation is no different than the policy-making process in any other arena. It is a process of human interaction wherein people try to clarify and secure their common interest. People may succeed or fail for a variety of reasons, not the least of which are differences in perspectives, how we deal with them, and how we deal with each other as people. This paper examines the concept of diverse perspectives as it relates to a commonly debated issue in conservation—the anthropocentric vs. biocentric controversy.

PERSPECTIVES AS OBSTACLES TO FINDING COMMON GROUND

DIVERSE PERSPECTIVES AND DICHOTOMOUS CLASSIFICATIONS

People's perspectives are made up of their *identities* (i.e., who or what they identify with), *expectations* (i.e., set of expected outcomes), and *demands* (i.e., patterns of claim-making) (Lasswell and McDougal 1992). People with perspectives of like kind tend to gravitate toward one another and develop a common, mutually reinforcing cultural outlook, based on similar core beliefs (also called a paradigm, doctrine, framework, outlook, myth, or ideology). Gravitating towards one another, however, does not necessarily result in a loss

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of individual perspectives. People, for instance, may share a group identity but have different expectations and demands. Likewise, people may have similar expectations and demands but retain somewhat different identities. Figure 1 illustrates the way these differences may result in diverse perspectives. The three interconnected elements of people's perspectives—identities, expectations, and demands—always come into play in a biological conservation debate or any other process of interpersonal interaction or decision.

Many diverse people participate in processes of deciding about the environ-

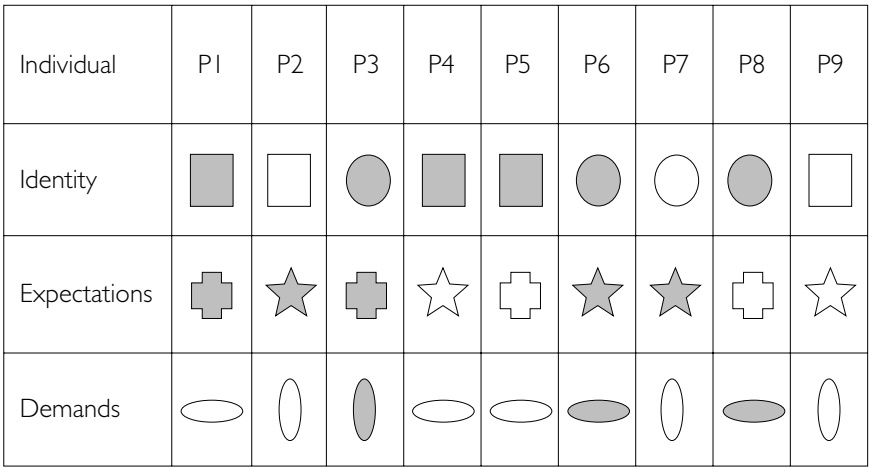

Figure 1 Differences in people's identities, expectations and demands result in unique perspectives among participants in a decision process. For example, participants P3, P6 and P8 may share an identity (shaded circle) but have considerably different expectations and demands. Likewise, participants P2 and P7 may have similar expectations (shaded star) and demands (blank vertical ellipse) but retain considerably different identities.

Other people involved in the same process may be committed to different perspectives. These differences must be overcome in order to find the common interest.

ment, biodiversity, and other public matters (see Clark and Brunner 1996). Participating in these processes compels us to view ourselves in relation to others, and we generally rely on the basic belief systems at the core of our identity to sort or classify perspectives in a given social decision process (e.g., in a given endangered species case). For example, a scientist who adheres to a belief in experimental, reductionistic science wants the empirical "facts," and knowledge of how they were derived. Other people involved in the same process may be committed to different perspectives. These differences must be overcome in order to find the common interest.

In the biological conservation debate some people have suggested that participants tend to fall into two basic perspectives, which are founded on two fundamentally different paradigms, thus giving rise to the widely discussed anthropocentric vs. biocentric dichotomy (e.g., Spash and Simpson 1993; Grumbine 1994; Stanley 1995). Table 1 lists features commonly used to contrast these two types of perspectives. As with most characterizations of perspectives, differences are both descriptive and normative, that is they not only pertain to how participants think "the world is" but also how they think

Table 1 Commonly invoked differences between the anthropocentric and biocentric perspectives.

ISSUE	ANTHROPOCENTRISM	BIOCENTRISM
Placing of humans with respect to nature	Humans are uniquely different from, and superior to, the rest of the biological world.	Humans are but another member of the world biological community.
Limitations on the human-environment relationship	There are nearly unlimited possibilities to what humans can do with the environment.	There are important limits to what humans can do with the environment.
Sources of meaning	Progress, efficiency, independence.	Stability, conservation, interdependence.
Criteria for allocation of resources	Decisions should be made to maximize the value of total net benefits to humans.	Decisions should be made in context where all organisms - humans included - have equal standing.
Focus of attention in the environmental problem	Human social processes, the here and now.	Environmental processes, now and later.
Vision of future based on current trends	The world is becoming an increasingly better place to live in.	The world is becoming an increasingly adverse place to live in.

"the world should be." Moreover, the contrast between the two types of perspectives is regarded as a central issue to be reckoned with directly in the biodiversity conservation debate. Indeed, for many participants, resolving the controversy between these two perspectives and arriving at more satisfactory conservation outcomes seems to turn on one side convincing the other side of, or converting the other side to, the first side's perspective. We contend that classifications like this are just versions of the "us vs. them" phenomenon, which is overly simplistic and rigid. It tends to limit an inclusive and constructive participatory process of decision about conservation in the common interest.

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EXCLUDING AND CONFRONTING PEOPLE WITH DIFFERENT PERSPECTIVES

Dichotomous characterizations of perspectives such as anthropocentric vs. biocentric can be an obstacle to an open, participatory, integrative, and adaptive process for finding the common interest. Classification systems include or group together like elements and exclude dissimilar types. In human affairs, this can lead to a "we vs. they" dichotomy. No matter which camp one is in, there is a predisposition to exclude and confront those in the opposite camp. For instance, when the "we-biocentrics" take the form of "conservation biologists," the "they-anthropocentrics" is often a catch-all for everyone else in the debate. The list of potentially excluded people labeled "they" is rather large and diverse, often including decision-makers, managers, politicians, miners, ranchers, fishers, members of the business community, the general public, and scientists in other disciplines, such as economists and sociologists. Broad categorization is exclusionary, leads to stereotyping, and is often confronta-

tional. On this predisposition to confront, Sahurie (1992: 91) notes "The 'ours' is to represent 'our' most cherished values, while 'theirs,' the foreign and unknown, is regarded as dangerous…almost inevitably, it also accentuates a competition that, no matter how desirable the outcome it tends to produce in terms of efficiency, is nurtured precisely by the provincialism of the we or they."

The tendency to exclude and confront alternative perspectives needs our explicit attention because of its limitations and divisiveness. First, the notion that the anthropocentric vs. biocentric characterization accounts for the majority of perspectives with respect to biological conservation issues is often taken for granted. It seems to demand or expect that all of us fall into one or the other camp and that this dichotomous outlook should be appealing to every participant, especially to those of us assumed to be in the "we" camp. Unfortunately, this dichotomy leaves out people who see themselves falling into (i.e., identifying with) neither camp, perhaps because their views reflect a blend of the two perspectives or because the contrast is of little meaning to them.

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Second, there is a tendency to confront people with different perspectives. The dichotomy separates people by placing them in opposing camps. Once battle lines are drawn, often considerable intellectual and political resources go into determining whose perspective is more legitimate, appropriate, or useful according to some set of standards, which may or may not be explicit or fully articulated. To date this human tendency to exclude and confront has led to a failure to resolve many of the basic differences among humans, and better conservation outcomes have not been produced as hoped for (e.g., Holling 1995). Livingston (1981: 2) recognized this by noting that:

> In conservation we have always assumed a dialogue between ourselves and everyone else; a civilized, adversary proceeding in which reason, logic, and meticulous argument, liberally laced with horrible precedent, would persuade just men and women to our position. Unfortunately for reason and logic, for ourselves and for wildlife, it has not worked. One would like to know why.

Perhaps it has something to do with the ways we deal with diverse perspectives, especially those ways that exclude and confront.

In the next section we offer a view as to why we have had very limited success in reaching a consensus in terms of which perspective is more legitimate, appropriate or useful in biodiversity conservation. Or paraphrasing Livingston, why we think it is unlikely that all just men and women will ever be converted to either biocentrism or anthropocentrism in the foreseeable future.

PERSISTENCE OF DICHOTOMOUS DIVISIONS

Understanding clearly what has conditioned us to employ dichotomous divisions of perspectives readily in the biological conservation debate is somewhat difficult. When we consider this issue we are forced to take ourselves as objects of study at the same time that we are being ourselves as either biocentrics or

anthropocentrics. Taking one's own perspective into account scientifically as a variable in the biodiversity conservation debate is challenging. Among the conditioning factors likely to be involved in dichotomous and divisive characterizations of perspectives are the following three.

THE "WE VS. THEY" PHENOMENON

One conditioning factor in dichotomous characterizations is a human predisposition to use labels to accentuate group identity and exclusivity of membership. Terms like "us-biocentrics" are examples of group identity that take on added meaning when contrasted with "them-anthropocentrics." Indeed, distinguishing between "us vs. them" or "we vs. they" is universally common for reasons of individual and group meaning. Sahurie (1992: 90) explains that "we and they" constitutes the central leitmotif that holds together groups and larger societies and that this collective notion identifying "us" as against all "those" is a major component in virtually all human cultures. Still, the degree of exclusiveness in the collective notion of just who "us" is varies among human groups. Lasswell (1994) described perspectives on a continuum from *parochial* to *universal* depending on who is included in the group. Groups with a local cultural perspective excluding most other people are parochial whereas groups with a global view that includes all humans are universal. There are great differences between a parochial and a universal identity in regards to what is meant by the terms "we vs. they."

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THE AGE OLD DEBATE

Another factor predisposing the use of dichotomous classifications is a strong legacy of use and cultural reinforcement. First, there is considerable inertia maintaining the use of dichotomous accounts of perspectives in the biodiversity conservation debate. Indeed, the current anthropocentric vs. biocentric controversy is partly an outcome of a broader and longer debate pertaining to the relationship of humans to the rest of the world (e.g., Marsh 1864). This perennial debate has surfaced at different times in the history of biological resource management in the United States (Sellars 1997). At least two debates can be distinguished as predecessors to the one that is ongoing today. The first is the utilitarian vs. preservationist controversy of the early conservation movement at the beginning of the 20th century. The second is the ecocentric vs. anthropocentric debate of the conservation movement in the 1970's and 1980's (Dunlap and Mertig 1992). In both cases, diverse perspectives were similarly dichotomized.

Second, there is a pattern of positive reinforcement for the continued use of dichotomies in the conservation debate. On the one hand, there is reinforcement by example. Outlooks have been reinforced generation after generation by the use of such terms and behavior and the "education" of new in-group members. On the other hand, there is reinforcement by discrimination. By historically discouraging participation of people whose perspectives do not

match the in-group's "official" views, out-group people are selected against. These people are considered dangerous because they may bring in new ways of thinking.

OVERLY SIMPLISTIC VIEWS OF SELF AND OTHERS

Still another factor conditioning us toward dichotomous classifications of perspectives is our sometimes simplistic views of self and others. As mentioned earlier, participation in a decision process compels us to view ourselves in relation to others. By clarifying our own standpoints in relation to the public decision process and participants involved, we distinguish ourselves, our purposes, and procedures from the events we observe, including the purposes and procedures of other participants in those events (Lasswell and McDougal 1992). Unfortunately, standpoint clarification is often done in a cursory, highly implicit or otherwise simplistic fashion to the detriment of more effective overall participation (Clark and Wallace 1999). A widespread lack of more deliberate and explicit standpoint clarification in the biological conservation debate has prevented us from carrying out a critical self examination that would question, among other things, the validity and utility of several aspects of our own perspectives, including the way we view and classify other people. This deficiency can be associated with a more general lack of problem orientation particularly evident in participants with an academic orientation. Lack of problem orientation is partly fueled by a positivist scientific outlook in which goal and context are subordinated to detachment and universality. Goal orientation and context delimitation, however, are key to the appraisal of the utility and validity of different elements in the process, including the very accounts of participant perspectives (Lasswell and McDougal 1992).

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THE FUTURE?

There is little indication that this widespread tendency to divide issues and people into "us vs. them" will disappear soon. Regardless of the issue, dichotomies in perspectives are likely to surface again and again. However, more than ever before there is presently an opportunity to make the transition to a more flexible, integrative, and effective approach to resolving differences. Several lines of evidence suggest that this is true.

First, many of us find dichotomies such as the anthropocentric vs. biocentric characterization unsatisfactory as working premises. Some of us may not identify with notions held by either camp. An example is the anthropocentric view of humans having "unlimited" possibilities or a "free hand" with respect to the environment, and the alternative biocentric notion of humans having "limited" adaptability in the face of increasing natural resources scarcity. Others may find strong features shared by both perspectives, thus undermining a truly dichotomous taxonomy. For example, one shared premise regarding ecological systems is feedbacks. For the most part, both biocentrics and anthropocentrics either gloss over the issue of feedback mechanisms or imply

an overwhelming existence of positive feedbacks (i.e., re-enforcement of historic trends) when discussing, for instance, the fate of society, wilderness or biodiversity. On the other hand, many of us see that we all share important common interests that are rarely, if ever, brought out or discussed fully in the current debate. Clearly, there are numerous reasons why many of us may feel that our perspectives are not adequately represented by the anthropocentric vs. biocentric account.

Second, the increasing demand for more extensive participation in the conservation policy debate will likely continue into the foreseeable future. There is abundant and growing evidence that more and more people want to take part in decisions affecting their biological and environmental heritage. This is part of a much larger and expanding demand worldwide that individual human beings be accorded a greater role than ever before in the shaping and sharing of all kinds of value—power, wealth, enlightenment, respect, well-being, affection, skill, and rectitude (Lasswell 1994). On the other hand, the trend towards globalization continues to extend the scope of identities to become more universal, as the space shuttle picture of planet earth beamed down on Earth Day 1998 symbolizes. Both trends compel recognition of a multiplicity of perspectives with various degrees of diversity at different levels of inclusiveness that renders conventional dichotomous characterizations even less realistic.

Second, the increasing demand for more extensive participation in the conservation policy debate will likely continue into the foreseeable future. There is abundant and growing evidence that more and more people want to take part in decisions affecting their biological and environmental heritage.

Third, the influence of positivistic science is eroding, giving way to more inclusive, contextual outlooks (Sullivan 1995) that will facilitate—if not demand—a more deliberate and explicit clarification of standpoint and context among all participants of a decision process. Michael (1995: 462) noted that despite biophysical "reality," we "construct social reality. We create and choose among narratives—stories—that give motive and meaning to social action." With the increasing acceptance that social reality is at least partly constructed, people's focus is turning more to "meaning" and away from detachment and universality (Dryzek 1990). In short, more and more people want a meaningful life wherein human dignity in the broadest sense, and not detachment, is the overriding goal (McDougal *et al.* 1988). This is part and parcel of the global human rights movement (McDougal *et al.* 1980). In light of this current window of opportunity, exploring alternatives to business as usual is timely.

FINDING COMMON GROUND AND IMPROVING CONSERVATION OUTCOMES

We need to find workable alternatives to the status quo, which is dominated by an "us vs. them" dichotomy, to move us all closer to the goal of sustainable conservation of the planet in the common interest. It may not be inevitable that all resource use has to lead to permanent injury to the environment. In this section we examine three alternatives to the present situation ordered along a continuum.

Alternative 1: Continue to use dichotomous characterizations of perspectives that divide people into two camps, but with a better understanding of the limitations. Dichotomies are appealing because they afford a strong and simple way to differentiate perspectives and map where people stand in the conservation process. Following the example in Figure 1, the nine participants in a hypothetical conservation decision process can readily be divided into two camps based on highly discernable aspects of their identities (Figure 2). Moreover, dichotomies clarify, accentuate, and forge individual and group identity. Unfortunately, uncritical use of dichotomies can lead to outcomes that are more divisive than integrative. For example, overly rigid adherents to either side of the biocentric vs. anthropocentric dichotomy tend to believe that conversion of others will come about by more "education" and increasing the volume of the message. The rigidity of a divisive "we/they" trap works against democratic participation of many people, contributes to sentiments of competition and misunderstanding, and may ultimately lead to gridlock in the conservation process. Certainly, boxing ourselves into only two perspectives is highly undesirable. This often leads to destructive conflict. An increased appreciation of the practical limits of this approach wherein people realize that few biocentrics will be converted to anthropocentrics and vice-versa in the near future is a first step in the right direction. This realization, however, does not take us very far. While some tension may be eased and some understanding may be gained, the alternative is still not fully adequate to find common ground for improved conservation.

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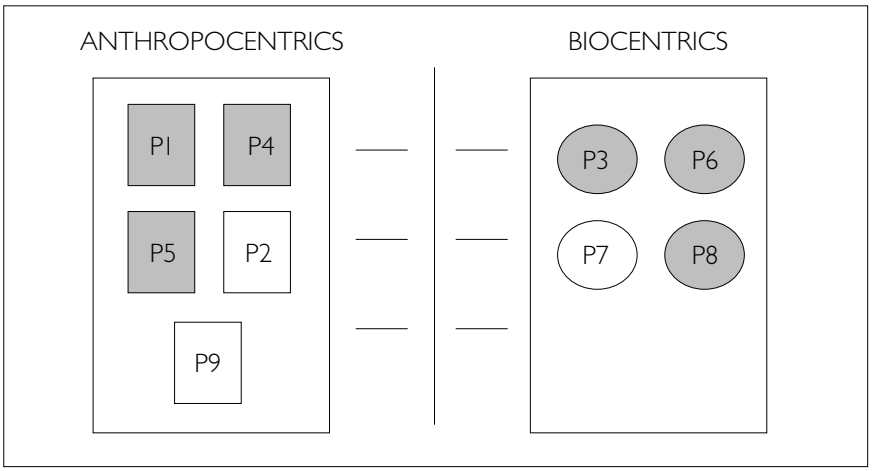

Figure 2 An example of a dichotomous account of participant perspectives. Dichotomies like the biocentric vs. anthropocentric characterization tend to be rigid, exclusive, and confrontational in nature. They have a great appeal, however, because they afford a decisive and simple way to sort perspectives and map where people stand in a decision process. The nine participants in Figure 1. can be readily divided into two camps based on highly discernable aspects of their identities: squares = P1, P2, P4, P5 and P9 (e.g., anthropocentrics) vs. circles = P3, P6, P7, and P8 (e.g., biocentrics).

Alternative 2: Move toward the use of more flexible accounts of perspectives. This alternative recognizes that there may be considerable overlap among perspectives grouped on opposite sides of the dichotomy, as well as considerable discrepancy among perspectives grouped on the same side of the dichotomy. Figure 3 shows an example of a more flexible account of perspectives. In this example, differences in perspectives among anthropocentric and biocentric participants are recognized. Indeed, more flexible approaches to dichotomies can provide space for many participants who somehow identify with one or the other group of perspectives, yet do not fully subscribe to all aspects of either. Moreover, such approaches could also recognize that a participant can identify with one perspective most of the time, but with another or a blend of the two at other times, depending on the issue and realistic knowledge of the context of application. By definition, this second alternative is more inclusive, contextually relevant, and less confrontational. Still, this alternative is not enough to break from the "we/they" trap.

Move toward a fully integrative classification of perspectives where many conventional divisions are abandoned as a basis for understanding other people and for taking practical, just action.

Alternative 3: Move toward a fully integrative classification of perspectives where many conventional divisions are abandoned as a basis for understanding other people and for taking practical, just action. We noted earlier that many diverse people participate in the process of deciding about biological conservation and one need not be restricted by reducing this diversity into two polarized camps. Alternatively, one could use, for instance, the three elements of perspectives—identities, expectations and demands—as the basis for distinguishing and clustering participants. An example of this is given in Figure 4. Identities can be contrasted in a variety of ways according to actual situations or contexts

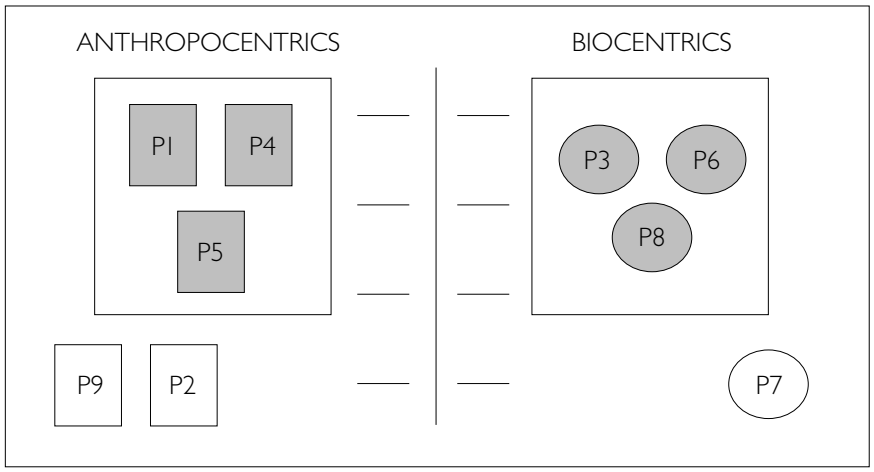

Figure 3 An example of a more flexible dichotomous account of participant perspectives. Shown here is a variation of the anthropocentric vs. biocentric account depicted in Figure 2 that entertains four variations of perspectives: purely anthropocentric (P1, P4 & P5 = shaded squares), anthropocentric with some elements of biocentrism (P2 & P9 = blank squares), purely biocentric (P3, P6 & P8 = shaded circles), and biocentric with some elements of anthropocentrism (P7 = blank circle). By definition, this alternative is more inclusive, contextually relevant, and less confrontational.

(e.g., identity with a job, an organization, a profession, an ethical position, and so on). Moreover, identity need not be the first or only criterion to distinguish among participants. Participants can also be distinguished by the kinds of demands they make or the expectations they have.

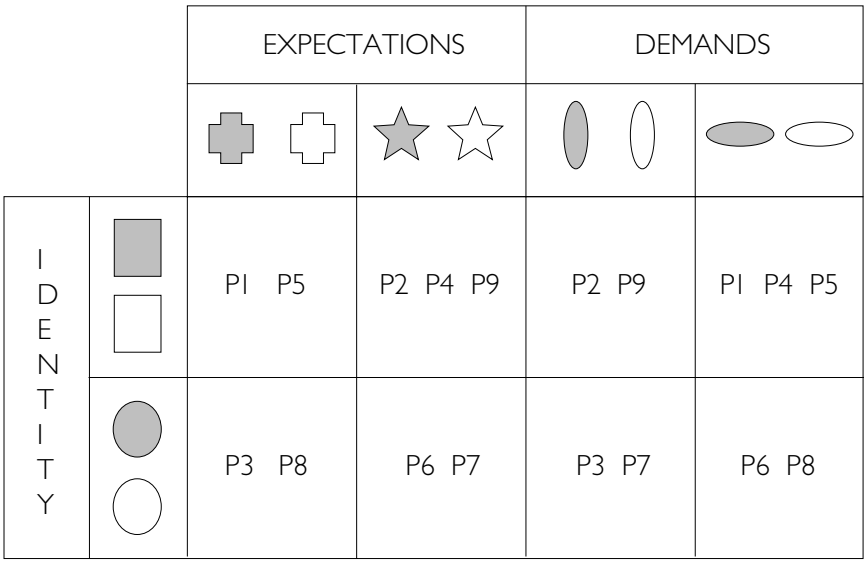

Figure 4 An example of a more dynamic, realistic, and integrative classification of perspectives that includes all three elements—identities, expectations, and demands. Participants can be distinguished and clustered in several ways using a single element or a combination of elements. Following the example in Figure 1., the participants can alternatively be grouped, for instance, by their identities in combination with their demands (P2 & P9 vs. P1, P4 & P5 vs. P3 & P7 vs. P6 & P8).

How can the recommended strategy be successfully implemented? First, more leadership in diverse professional and public meetings and publications would help. There is no reason why a "we" perspective cannot take a universal form, including all humans and all plants and animals.

This alternative is more inclusive as it more fully recognizes and accepts diversity among people. It is appealing to many of us who do not identify strictly with either the anthropocentric or the biocentric camp, or may think that contrasts afforded by sharp dichotomies are unhelpful to integrated decision making about the environment. This alternative is consistent with a goal of human dignity for the many, which includes freedom to establish and change identification and the fostering of the broadest possible identifications with all groups, functional and territorial, including collective loyalty to human kind, and by extension to a rich biological world (see McDougal *et al.* 1980).

How can the recommended strategy be successfully implemented? First, more leadership in diverse professional and public meetings and publications would help. There is no reason why a "we" perspective cannot take a universal form, including all humans and all plants and animals. Second, more teaching about these subjects in schools and universities would help. As Michael (1995: 461) advises, "minimize learner's sense of vulnerability by acknowledging feelings of vulnerability and the challenges to values; use the notion of error-embracing: trial and error search for the appropriate account(s) of perspectives—being adaptive; use metaphors to define boundaries and span them—

they reinforce entrenched views but also ease reforming views." Third, more practice in the field would help. All of us could do a better job of mapping participant perspectives and interacting more constructively based on those maps (Clark and Wallace 1998). This includes doing a better job of being self-aware of our own perspective(s) on issues and working toward democratic, integrated solutions to common problems.

CONCLUSION

Seeking inclusive democratic processes that are effective in achieving biological conservation in the common interest requires recognizing that rigid dichotomous notions about people's perspectives, such as anthropocentric vs. biocentric characterizations, could be an obstacle. Such notions can discourage broad participation because they tend to exclude and confront people. In advancing democratic process and biological conservation, we must understand our own as well as other people's perspectives (i.e., identities, expectations, and demands) realistically to the extent possible. In many instances this requires that we expand our own and other people's perspectives to be more encompassing of other people and more universal. In seeking the common interest in conservation we do not necessarily advocate a compromise of one's value perspective. On the contrary, we do not believe that the best alternative to clarifying and securing the common interest is always the middle ground between two polar perspectives. We do argue though, that more open and contextual understanding of people's perspectives will be helpful to achieving practical conservation. Three possible futures are offered: (1) continue with the current approach, (2) move toward more flexible perspectives, or (3) seek a fully integrated perspective. Alternatives 2 and 3 are recommended and can be implemented with more skilled leadership, greater introspection and active learning, and improved interpersonal working relationships in the field.

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LITERATURE CITED

Clark, T.W., and R.D. Brunner. 1996. Making partnerships work in endangered species conservation: An introduction to the decision process. *Endangered Species Update* 13(9): 1-4.

Clark, T.W., and R.L. Wallace. 1998. Understanding the human factor in endangered species recovery: An introduction to human social process. *Endangered Species Update* 15(1): 2-9.

Clark, T.W., and R.L. Wallace. 1999. The professional in endangered species conservation: An introduction to standpoint clarification. *Endangered Species Update* 16(1): 9-13.

Dryzek, J.S. 1990. *Discursive democracy: Politics, policy, and political science.* Cambridge University Press, New York, New York.

Dunlap, R.E., and A.G. Mertig. 1992. The evolution of the US environmental movement from 1970 to 1990: An overview. Pp. 1-10 in R.E. Dunlap, and A.G. Mertig, eds., *American environmentalism: The US environmental movement, 1970-1990.* Taylor and Francis, Inc., Philadelphia, Pennsylvania.

Grumbine, R.E. 1994. What is ecosystem management? *Conservation Biology* 8: 27-38.

Holling, C.S. 1995. What barriers? What bridges? Pp. 3-34 in L.H. Gunderson, C.S. Holling, and S.S. Light, eds., *Barriers and bridges to the renewal of ecosystems and institutions.* Columbia University Press, New York, New York.

Lasswell, H.D. 1994. Introduction: Universality versus parochialism. Pp. lxxxiii-lxxxix in M.S. McDougal, and F.P. Feliciano, *The international law of war: Transnational coercion and world public order.* New Haven Press, New Haven, Connecticut.

Lasswell, H.D., and M.S. McDougal. 1992. *Jurisprudence for a free society: Studies in law, science, and policy.* New Haven Press, New Haven, Connecticut.

Livingston, J.A. 1981. *The fallacy of wildlife conservation.* McClelland and Stewart Ltd., Toronto, Ontario, Canada.

Marsh, G.P. 1864. *Man and nature, or physical geography as modified by human action.* Reprinted 1965. Belknap Press of Harvard University Press, Cambridge, Massachusetts.

McDougal, M.S., H.D. Lasswell, and L. Chen. 1980. The basic policies of a comprehensive public order of human dignity. Pp. 367-415 in *Human rights and world public order: The basic policies of an international law of human dignity.* Yale University Press, New Haven, Connecticut.

McDougal, M.S., W.M. Reisman, and A.R. Willard. 1988. The world community: A planetary social process. *University of California Law Review* 21: 807-972.

Michael, D.N. 1995. Barriers and bridges to learning in a turbulent human ecology. Pp. 461-485 in L.H. Gunderson, C.S. Holling, and S.S. Light, eds., *Barriers and bridges to the renewal of ecosystems and institutions.* Columbia University Press, New York, New York.

Sahurie, E.J. 1992. *The international law of Antarctica.* New Haven Press, New Haven, Connecticut.

Sellars, R.W. 1997. *Preserving nature in the national parks: A history.* Yale University Press, New Haven, Connecticut.

Spash, C.L., and I.A. Simpson. 1993. Protecting sites of special scientific interest: Intrinsic and utilitarian values. *Journal of Environmental Management* 39: 213-227.

Stanley, T.R., Jr. 1995. Ecosystem management and the arrogance of humanism. *Conservation Biology* 9: 255-262.

Sullivan, W.M. 1995. *Work and integrity: The crisis and promise of professionalism in America.* Harper Business, New York, New York.

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