

Sorting Out Roles and Defining Divides: Social Sciences at the World Conservation Congress

Meredith Welch-Devine^{a,#} and Lisa M. Campbell^b

^aCenter for Integrative Conservation Research, University of Georgia, Athens, GA, USA

^bDuke University Marine Lab, Nicholas School of Environment, Duke University, Beaufort, NC, USA

[#]Corresponding author. E-mail: mwdevine@uga.edu

Abstract

Many conservation practitioners and scholars have called for increasing involvement of the social sciences in conservation and better integration among the various disciplines engaged in conservation practice. This research uses the International Union for Conservation of Nature (IUCN) Fourth World Conservation Congress (WCC) as a site of ethnographic inquiry to explore in-depth how conservation researchers and practitioners view the social sciences in conservation. This paper situates those views in the context of the WCC itself and treats such themes as the appropriate role for the social sciences in conservation, conflicts between social and natural scientists, and sorting out differences between academic social scientists and those working within conservation organisations. It ends with a reflection on what changes new approaches to conservation might bring to the relationship between natural and social sciences in conservation.

Keywords: social sciences, conservation, interdisciplinarity, World Conservation Congress, IUCN

DOI: 10.4103/0972-4923.78150

INTRODUCTION

‘Conservation problems are social and economic, not scientific, yet biologists have traditionally been expected to solve them’

— Schaller (1992)

There are strong arguments for interdisciplinarity when conducting research on real-world environmental problems (Lubchenco 1998; Kinzig 2001), and conservation is particularly complex and demanding of a holistic approach (McShane *et al.* in press). While conservation traditionally has been the realm of the natural sciences—particularly wildlife biology and ecology—the so-called ‘human dimensions’ of conservation are now widely cited as critical components of conservation practice. Conservation work takes place in ‘spaces dominated by human land uses focused on generating valued commodities’ thereby necessitating attention to human values, practices, and ambitions (Wilkie *et al.* 2008: 4). Likewise, ‘conservation actions are ultimately human behaviours, and it is vital to understand how social factors (e.g., markets, cultural beliefs and values, laws and

policies, demographic change) shape human interactions with the environment and choices to exploit or conserve biodiversity’ (Fox *et al.* 2006: 217). Conservation requires an understanding of both ecological and social complexity. Therefore, research increasingly calls both for greater involvement of the social sciences in conservation and for better integration of social and natural sciences, i.e., a move to interdisciplinarity (Mascia *et al.* 2003; Campbell 2005; Meine *et al.* 2005).¹

Fox *et al.* (2006) suggest this push towards integration is being undertaken with increasing urgency, and indeed, interest in the role of the social sciences in conservation has grown so great that a special issue of *Conservation and Society* (2007) was devoted to the engagement between the social and natural sciences and the role of social science researchers in biodiversity conservation and protected area management.² Similarly, *Conservation Biology* (2010) recently published a virtual issue to celebrate the International Year of Biodiversity, and one of the three themes covered, along with climate change and connectivity, was conservation social science.³ That insights from the social sciences are ‘needed’ in conservation has become somewhat of a truism.

Just as frequently as the need for greater input from social science and more interdisciplinary work has been recognised, lists of problems with integrating social science into conservation work have appeared. These problems relate to many factors, for example, practical, philosophical, methodological, and epistemological (Endter-Wada *et al.* 1998; Campbell 2005; McSweeney 2005; Brosius 2006; Fox *et al.* 2006; Adams 2007; Büscher & Whande 2007; King *et al.* 2007). As noted by Fox *et al.*, much of this reflection has been based on anecdotes, relayed by researchers and practitioners in editorial style contributions that detail their own experiences (e.g., Campbell 2003; Mascia *et al.* 2003). While these anecdotal stories have their value, little research has been undertaken on the challenges of making conservation interdisciplinary, either within a broader group of conservation researchers or practitioners, or within specific contexts. As Fox *et al.* point out, 'The scale and scope of this problem suggests that a substantial effort is needed to identify the most important real and perceived barriers to collaboration and integrating social science into conservation action' (2006: 1817–1818).

In this paper, we explore in-depth the views of conservation researchers and practitioners attending the fourth World Conservation Congress (WCC, Barcelona, 2008) about the role of the social sciences in conservation. We situate these views in the context of the WCC itself, where the International Union for Conservation of Nature (IUCN) sets its agenda for the next four years. Many of the 'new' directions explored at the WCC, for example the increasing interest in market-based mechanisms to achieve conservation (MacDonald this issue; Monfreda this issue), will require that IUCN further integrate new types of knowledge into its work. Thus, as urgent as the need for interdisciplinary approaches to conservation is already believed to be, both this need and the obstacles to its fulfilment are likely to increase as new approaches to conservation are explored. Increased reliance on market mechanisms, for example, will require new skill sets (e.g., in finance); come with different theories and assumptions; and introduce new power relations among those doing conservation. We suggest that, in this context, where ideas about how best to do conservation (and who should do it) are established and inform the specific activities of an organisation, broad acceptance of the need to make conservation interdisciplinary or to bring in new types of knowledge may prove problematic for traditional conservation practitioners and researchers (cf. Gray & Campbell 2009).⁴

METHODS

In October 2008, we engaged with 15 other researchers in a collaborative ethnography of the IUCN WCC. The WCC generally is comprised of two events: the Forum (October 5–9), which includes workshops, panel discussions, learning opportunities, and exhibit booths; and the Members' Assembly (October 10–14), which allows members to come together to

vote on motions, leadership, and IUCN's programme for the following four years (Brosius & Campbell this issue). While at the WCC, one of us, Welch-Devine, observed and participated in workshops, knowledge cafés, learning opportunities (part of the Forum), and motion discussions (both in plenary sessions and in contact groups), paying particular attention to how the social sciences were represented, discussed and invoked in these varied settings. Welch-Devine also conducted interviews with 11 people identified as key players at the WCC or within organisations that were highly active at the WCC. These people were employees of IUCN, World Wildlife Fund US (WWF), The Nature Conservancy (TNC), Conservation International (CI), and the Wildlife Conservation Society (WCS), as well as independent consultants, academics, and employees of smaller NGOs. Their disciplinary backgrounds ranged from biology, ecology, and zoology, to sociology, economics, and international development. These interviews lasted from one to two-and-a-half-hours and were recorded whenever feasible. In the months following the WCC, Welch-Devine returned to many of these people to discuss how their perceptions of what had happened at the WCC had changed. All interview transcripts and observation notes were coded and analysed according to themes found in the literature (e.g., difficulty of communicating across disciplines) and themes that emerged from the interviews and observed sessions (e.g., tensions between academics and practitioners).

Fox *et al.* (2006) identify many perceived barriers to collaborations between social and natural scientists in the realm of conservation. However, their online survey was meant as a pilot study to motivate further work on the subject. Responses were limited and provided little information about the context in which the respondent operated, and Fox *et al.* note that the most 'useful and nuanced' information came not from statistical analyses of forced-choice questions but from responses to open-ended questions (2006: 1819). The ethnographic approach used in this research, where capturing nuances is a central concern, is an alternative to the survey research approach. It allows the researcher to spend time with the respondent, exploring a problem in great depth and eliciting a rich account of perspectives and experiences, thereby going beyond the anecdotes that can be collected as a corollary to a survey by situating responses in context.

This paper will begin with a discussion of the role of the social sciences in conservation, as evidenced at the WCC. It will proceed to an examination of the relationship between the social and natural sciences in conservation and the interactions of academics and practitioners. It will end with a reflection on how changing approaches to conservation are affecting and are likely to affect different types of knowledge and the experts who are deemed important to conservation planning and implementation.⁵

Both the literature review and the data section are organised according to a few key themes that emerged from the data: 1) Different ideas about what the social sciences can and should contribute to conservation; 2) Tensions and difficulties between natural and social scientists; and 3) Tensions and difficulties among social scientists.

INTEGRATING SOCIAL SCIENCE INTO CONSERVATION: CHALLENGES IDENTIFIED IN THE LITERATURE

The Appropriate Role of Social Science in Conservation

The social sciences have many different applications to conservation, varying both across and within disciplines. As a result, it can be difficult for those who do not specialise in one of the social sciences to differentiate among the different types of contributions or to understand and recognise the value in certain applications. The first priority of conservation biologists is saving biodiversity, and as a result they tend to see social science's value as helping them do that. For example, Machlis asserts:

It is becoming increasingly clear that the management of protected areas in the twenty-first century is necessarily the management of people. And managing people is a difficult task that will be facilitated through the use of the social sciences at the protected area, regional, national, and global levels (1995: 45).

In that vein, social scientists are often called upon to manage conflicts, avoid litigation, improve participation, and do environmental education (Endter-Wada *et al.* 1998) or to 'fix' socio-economic problems (Campbell 2005). Endter-Wada *et al.* argue that even ecologists who recognise the 'political realities of ecosystem management' still 'fail to note the scientific contributions that can be made by political scientists, sociologists, anthropologists, economists, and other social scientists,' instead viewing them more as facilitators (Endter-Wada *et al.* 1998: 892). Many social scientists resist this role; as Brosius notes, 'whatever else anthropology is today, it is not about figuring out how to manage people better' (Brosius 2006: 684).

The need to move beyond seeing social scientists as meeting facilitators, public educators, and implementers has been recognised for some time (see, for example, Endter-Wada 1998), and, indeed, some progress towards that end has been made. Nyhus *et al.* (2002), for example, argue that the social sciences provide important inputs for better models (see also Turner 2007). In this context, the input that social science makes into conservation tends to be reduced to helping to better understand how humans impact 'natural' systems. In contrast, Endter-Wada *et al.* (1998) argue that the social sciences can be used to elucidate such things as: broad social, cultural, political, and economic values, behaviours, and trends; individual and group attitudes, values and behaviours; social organisational structures; power differentials; social and economic equity issues; linkages across groups and communities; and human conceptual systems in resource use and management approaches. Eghenter, for example, shows how the WWF Indonesia and Ford Foundation collaboration—the Culture and Conservation Research Program—'brought to light the complexities of the social, environmental, political,

and historical context of the Kayan Mentarang conservation area' thereby aiding conservation managers to design 'flexible and locally appropriate measures' (2004: 229). Similarly, Aswani and Hamilton (2004) argue that the social sciences are important for understanding how a certain geographical area was traditionally used, which can then provide ideas for management interventions.

At a more fundamental level, the social sciences can help test some of the underlying assumptions of conservation (Eghenter 2004; McSweeney 2005; Brosius 2006). McSweeney argues that conservationists 'have a weak grasp of the "how" behind social and political processes' and that they 'allow practice and policy to be guided by "myths"' that social scientists can help dispel (2005: 1376). For example, she uses her work to question the assumptions underlying the population-degradation link that is often assumed to exist, particularly in indigenous communities, where decisions about family size need to be understood in a broad social and political context (McSweeney 2005). Brosius (2006) points out, though, that when the social sciences provide data or deliverables, they are seen as welcome contributions to conservation, but when they are asking other questions, or dispelling 'myths', they are often seen as unproductive or even destructive (see also Eghenter 2008), even though such questions may improve both the equity and the effectiveness of conservation.

Differences Between Natural and Social Sciences

Much of the recent writing on social sciences in conservation is dedicated to identifying why it has been so difficult for natural and social scientists to work together, and indeed, different methods and epistemologies make some alliances easier than others. For example, quantitative social scientists (such as economic modellers) use data and methods that ecologists and biologists recognise as similar to some of their own (Campbell 2005). In contrast, data provided by more qualitative approaches, such as ethnography, can be seen as 'noise' (Brosius 2006: 684). Some natural scientists even profess a concern over the rigour of social science data (Gartlan 1998). As MacMynowski suggests, different types of knowledge 'have differential power associated with them', with some types having more 'influence and authority' (2007: 23–24).

Adams (2007) argues that conservation scientists are highly educated in one discipline and often unaware of the basic theories and methodologies of other relevant fields. Both natural and social scientists often fail to read outside of their disciplinary journals (Adams 2007), and tenure and promotion structures still discourage publication in more newly established interdisciplinary journals, which are sometimes seen as less credible (Campbell 2005). As a result, several authors point out that there is a lack of common vocabulary to speak to each other across disciplines (Endter-Wada *et al.* 1998; Fox *et al.* 2006; Adams 2007) and that concepts and terms often taken for granted by natural scientists—such as community, custom, tradition, rights, or indigenous—are seen as problematic by social scientists because they are fragile,

mutable, and variable (Brosius *et al.* 1998; Adams 2007).

Another important obstacle to effective communication lies in differing world views. Endter-Wada *et al.* (1998) argue that natural scientists view humans as intruders in ecosystems and social scientists view ecosystems as providers of goods and services for humans. While this is certainly an over-generalisation, it is worth considering. Such differences affect the assumptions and principles underlying the research, which questions are asked, and which methods and approaches are used. Campbell points out that many natural scientists view their role as being advocates for the species they study, while conservation advocacy can be more difficult: 'My data source is most often the people living with sea turtles and, as a result, I cannot be a direct advocate for sea turtles, because such a stance would influence the way my research subjects—people—interact with me' (2005: 576). Some social scientists, however, do see themselves as advocates for the human populations they study, and this can also pose problems for the relationship between social and natural scientists working in conservation (Brosius 2006).

The first step in moving towards increased interdisciplinary collaboration, as well as increased exchange between conservationists and academics, is for everyone concerned to find points of agreement (Redford & Brosius 2006). McSweeney argues that in addition to seeking points of agreement in project-level collaborations, social scientists must reach out to natural scientists in much broader contexts:

Achieving effective cross-disciplinarity in conservation science demands more than social scientists' input on specific conservation projects or in curricular development. Instead, social scientists must be willing to regularly and explicitly update conservation biologists about emerging ways of thinking about social processes, and they must demonstrate how these conceptual insights can be used to enhance conservation outcomes (2005: 1376).

That natural scientists will receive such efforts with enthusiasm is by no means given (Blockstein 2001).

Differences and Difficulties Within the Social Sciences

Though the social sciences are often lumped together and discussed as 'social science' rather than as 'the social sciences', each discipline brings its own approach to conservation. Anthropology, for example, brings something quite different to the study and practice of conservation than does economics, which in turn contributes quite differently than does education. Though there is overlap, one social science is not exchangeable for another, and within a particular discipline, individual scholars have very different orientations, with some focusing on providing data to craft better projects, while others use their work to question the very merit of a project-based approach. At the same time, the different approaches and tools of the various disciplines paint different pictures of the social and cultural aspects of conservation at different resolutions. Ethnography,

which is shared across anthropology, sociology, and geography, will arguably give a more complex and nuanced understanding of a specific situation than will rapid appraisal methods or quantitative approaches like cost-benefit analyses, but it is time-consuming and often context-specific; the broader lessons are more difficult to extract.

Campbell (2010) points to a spectrum of social science contributions to conservation. On one end are those adopting 'critical' perspectives, who may be interested in better understanding the processes through which conservation projects take shape in particular places and their impact on local livelihoods; on the other are those offering more utilitarian perspectives, whose research is designed to help understand why conservation is not working and to offer insights that might improve things. For some social scientists, for instance, the concept of conservation is itself subject to scrutiny; for others, its value is taken as given. Campbell (2010) argues that the extremes of the spectrum are likely to be inhabited by few individuals, that most social scientists lie somewhere in between, and that one's position can shift over time or in different contexts. It is important to note that not all social scientists believe that they should be working in concert with conservationists, even in a critical capacity. There is a strong counter argument that holds that critique can be most effective when offered from the outside (Li 2007, 2008). In *The will to improve*, Li (2007) argues that research and critique on development programmes that is not geared toward creating or improving a programme offers different insights than can be produced by scholars acting as consultants. She suggests that her brand of open-ended critique can be taken up by a variety of people working on different types of projects. In contrast, Brosius argues that it is precisely by engaging with conservationists that anthropologists and other social scientists can be most effective:

Anthropologists must challenge themselves to take their analyses to the next step: linking critique with engagement by showing in concrete form how their analyses can inform the practices of conservation practitioners by providing alternatives... We must premise this effort to bridge critique and engagement on recognition of the value of anthropological assessments of conservation and on recognition that critique alone is not enough (2006: 684).

These differences of approach can create tension among different social scientists; however, this tension has not been adequately explored in the literature.

INTEGRATING SOCIAL SCIENCE INTO CONSERVATION: CHALLENGES IDENTIFIED AT THE WCC

'Conservationists aren't working on biological issues; they aren't counting birds. The future developments we need to deal with are more social than biological. The big challenges are social rather than biological' (an independent consultant, zoologist).

The Appropriate Role of Social Science in Conservation

Social science research made only the occasional appearance in the panels and workshops of the WCC, and most of the sessions that did include social science were devoted to examples of how it could inform conservation interventions. Sessions that more critically explored social and political issues in conservation—examining assumptions underlying interventions, power relationships among various participants, and the role of gender—were virtually absent. As one interviewee (a political scientist in a large US-based NGO) described it, when social scientists are asked to provide information for conservation projects, the data asked for are often limited to such things as ‘how people are a threat and what incentives will make them change their behaviour’. Rarely will a social scientist be asked to provide a nuanced picture of the socio-political context of a place and an assessment of the viability of different conservation options, though this does happen in some small programmes of large NGOs (an economist in a large US-based NGO).

Many of the natural scientists with whom Welch-Devine spoke, though, did not conceptualise social science as a data-gathering and knowledge-producing endeavour at all. Several different practitioners, all natural scientists, outlined a typical, or ideal project, as beginning with the natural scientists designing the conservation intervention and the social scientists ‘talking to the people’ and getting their ‘buy-in’ (a biologist in a UK-based NGO). In essence, the social scientist is there not to provide a more thorough understanding of the context or its relation to a conservation intervention, but to make the people ‘behave’ (a biologist in a large US-based NGO). One field-based natural scientist heading a project that closely integrates human livelihoods into conservation work argued that he ‘does social science all the time’ because he ‘works with local communities’ and facilitates distribution of conservation benefits. In these cases, it seems as though people are failing to distinguish between working with people and ‘doing social science’. It is questionable, though, whether a project can adequately address the social issues and factors of a conservation intervention, or even design a conservation intervention that does not address social issues, without first assessing the conditions and processes at work (see Brockington 2004, and Terborgh 2004 for arguments that conservation that does not address social issues can be quite effective, given adequate enforcement).

Differences Between Natural and Social Sciences

As in the literature, people at the WCC brought up several obstacles to collaboration between natural and social scientists and discussed how to overcome them. For example, one workshop that explicitly addressed the link between social and natural sciences, 1537—‘Human Wildlife Conflict: Beyond Biology’⁶, featured biologists addressing the role of the social sciences in conservation. This session, organised by the IUCN Species Programme, noted that ‘social and

biological scientists have been slow to learn from each other and appreciate each others’ roles’ and argued for mechanisms to integrate different disciplinary expertise within IUCN (Thouless 2008:1).

However, more often than discussing these obstacles, interviewees explored the ideal composition of project teams—which for most would include both natural and social scientists—and what compromises are made when resources are limited. One natural scientist argued that some data needs are straightforward enough and that ‘you don’t always need trained social scientists to do social science work’ (an independent consultant, zoologist). Another pointed out that ‘if you must chose between a biologist and a social scientist, you chose the biologist’ (a senior administrator at a large US-based NGO, biologist). As a result, biologists and other natural scientists often find themselves executing tasks for which they are unprepared, something noted more broadly by Adams (2007), and discussed by interviewees:

I had some colleagues who just thought they could make up a survey and go out in the community, but when I looked at it, it was riddled with inconsistencies, potential misunderstandings, and other errors. They had no idea that there are procedures and protocols and best practices to follow (an interdisciplinary social scientist, large US-based NGO).

The view that biologists are perfectly capable of employing social science may stem from the conflation of social science and outreach, education, and ‘managing people’ outlined above. Some of it, though, may actually be the result of, rather than the catalyst for, the provision of social science tools to natural scientists. With adequate training and exposure to why and how a particular tool works, social science tools can be assets when time and funding do not permit the hiring of a social scientist. However, when used in the absence of that understanding and training, tools have the potential to be dangerous. As seen in the quote above, designing surveys and the like without an adequate understanding of social theories and methodologies can yield instruments that paint an incorrect picture of the context. Social, political, cultural, and economic factors affecting resource use, receptivity to various interventions, and equity can be misunderstood or overlooked, leading conservationists to design projects that may be more likely to fail. Such failures come at great monetary, and sometimes human, expense that could possibly be avoided with more sound social science.

Though it is often assumed that natural scientists will be able to ‘get by’ doing the social science work required in conservation by themselves, no equivalent assumptions were extended about the adaptability of social scientists. On the contrary, it was suggested that social scientists need thorough and rigorous ecological training in order to be effective partners (an independent consultant, zoologist; see also Fox *et al.* 2006).

The actual working of conservation requires some skills.

If you're a social scientist working in conservation you'd better learn some biology so you don't get fooled. For example, people say that swidden agricultural adds biodiversity, but it adds garbage species—it depends on your targets and priorities (a biologist in a large US-based NGO).

The prevailing sentiment among natural scientists with whom Welch-Devine spoke was that social scientists lack not only the ecological knowledge necessary to do conservation, but also the practical tools of project implementation. 'Social scientists don't know how to work with duct tape. Put a biologist out there and he'll get the job done, however it's necessary' (a senior administrator in a large US-based NGO, biologist). When discussing with one senior administrator at a US-based conservation organisation what was required for someone to run projects or programmes, he ran through a list of qualifications and then added 'It doesn't have to be a biologist, I'd let [social scientist's name] run my Asia program.' While on the surface the speaker was indicating that disciplinary training does not matter as much as skill and experience, naming someone with whom he had a long history and who he considered to have exceptional ability suggests it would require a 'special' social scientist to fill a programme manager role.

Differences and Difficulties Within the Social Sciences

One issue that came out much more strongly in the interviews than in the literature was the idea of conflicts and tensions within the social sciences and among different social scientists. While the literature has considered some of the differences arising from method and epistemology, people Welch-Devine spoke with particularly noted tensions between academic and practising social scientists, 'between those working within conservation organisations and those on the outside' (an international development specialist in a Europe-based international conservation organisation). While the lines between these two types of social scientists are often blurred (e.g., academics may work on projects implemented and funded by conservation organisations), interviewees discussed them as clearly distinct, and Welch-Devine use the terms academicians and practitioners as the interviewees did. Most of the social scientists Welch-Devine interviewed work in conservation organisations as practitioners and feel that the critiques of their academic counterparts are naïve and overly harsh, ignorant of the difficulties inherent in conservation interventions (a political scientist in a large US-based NGO). Further, while many academic critiques of conservation argue that projects overly-simplify the complexities, practitioners return the criticism, suggesting that academics underestimate the complexity of the practitioners' situations as well as the heterogeneity within and among NGOs: 'If people described indigenous communities the way they describe NGOs, with such a broad brush, they'd be laughed out of the profession' (a political scientist in a large US-based NGO). Practitioners also question the research priorities and orientations of academics:

Academics are used to talking in conceptual terms, analysing life from frameworks, and when you're actually in an organisation that just doesn't seem to happen very much. There's conceptualising around issues, but not about organisational processes. That level of analysis is not brought to bear on decision-making. I haven't reflected on things conceptually in a while; there's just not (enough) time (an international development specialist in a Europe-based international conservation organisation).

The feeling that practitioners are always pressed for time and funding heightens their sense that they and academics have different priorities and goals and that these priorities and goals can often be in conflict.

A second tension that was noted was between those working to advance particular projects and those operating from a more critical perspective. 'Social scientists can sometimes muddy the water. You need the right kind of social scientist, someone who's sympathetic, excited, and committed to the conservation project' (an independent consultant, zoologist). Critique, to many, is not a constructive means of engagement, and frustrations run particularly high when critique is not accompanied by suggestions to improve practice: 'What a copout [failure to fulfil commitment or responsibility] is critique without a constructive path forward' (a political scientist in a large US-based NGO). At times, academic social scientists are written off as merely serving as advocates for local populations, their scientific credentials overlooked or denied in the face of real or perceived 'activist' behaviour: 'Many social scientists go on and on. It's awful. They shout—put tape over their mouths—and just talk about people being moved out of their homes' (a sociologist in an intergovernmental environmental organisation; see also Gartlan 1998).⁷ It is important to note that many of these comments and sentiments are being expressed not by natural scientists but by social science practitioners. These social scientists often see themselves as trying to work 'from within' to affect change while characterising the efforts of their 'external' colleagues as counterproductive and a distraction.

DISCUSSION

The ethnographic data generated by this study of the WCC centre on a few key points. In the context of the WCC event, there was very little evidence of critical social science being discussed, much less incorporated into conservation interventions. Rather, the focus was on utilitarian social science addressing issues like threats and incentives; one side of Campbell's (2010) spectrum was dominant. At the same time, much of the focus on 'what social science can do for conservation' was oriented towards the role that social scientists can play in making people compliant with the conservation intervention, rather than toward data collection and knowledge production.

Tensions continue to exist between the social and natural sciences, and though many people professed that conservation

is a social rather than a biological ‘problem’, the natural sciences continue to be seen as the most important element of conservation planning. MacMynowski argues that though all scientists enjoy a ‘pre-eminent position to arbitrate claims to “truth”, not all sciences enjoy that power to the same extent, and understanding power differentials among the sciences is key to understanding the interface of natural and social sciences’ (2007: 20). At the WCC, the greater power of the natural sciences in conservation remained evident; it is the biologist who is hired when times are tight, the biologist who is deemed competent to do social science, and the social scientist who is thought to be incompetent with duct tape.

Finally, tensions among social scientists were highlighted much more at the WCC than in the literature, whether they exist between academics and practitioners, between quantitative modellers and qualitative ethnographers, or between critical theorists and those who take a more pragmatic approach. The sample is biased to practitioners, reflecting the nature of the WCC event, so the treatment of these tensions is from the point of view of practitioners. These practitioners at times articulate a kind of moral superiority over their academic colleagues (who are sometimes ‘coping out’ or providing only ‘noise’) and at others a kind of frustration with their lack of support and understanding. This conflict is likely related, in part, to the status of social scientists within conservation organisations; as their biological colleagues suggest, they are somewhat marginal and even replaceable ‘in a pinch’. Academic social scientists critical of conservation undoubtedly make the job of social scientists within organisations—who may be implicated in such critique by colleagues who lump all social scientists together—more difficult. Practitioners may also be defensive, feeling that their academic abilities are called into question in such critiques; for example, they refer to their lack of time to keep pace with the latest literature and to think about ‘concepts’—a luxury not available to those working in the ‘real world’.

Overall, the latter set of tensions, between practising and academic social scientists, generated the most concern among interviewees, as reflected in some of the quotes above. While there remain recognised obstacles to integrating natural and social science, there was more cohesion among practitioners than expected. Practising social scientists were aware of the misconceptions their natural science colleagues have of their work and roles, but were seemingly tolerant of these; it may be that the shared commitment to conservation, and to making conservation work, trumps interdisciplinary tensions within organisations. Another factor that may be contributing to greater perceived cohesion among natural and social science practitioners is the level of change occurring in organisations like IUCN, where managers and business people are running the organisations and where market-based mechanisms are increasingly the preferred policy mechanisms (Brosius & Campbell this issue; MacDonald this issue; Monfreda this issue). Biologists may be starting to feel somewhat marginalised themselves, creating a kind

of solidarity among practitioners, be they natural or social scientists.

Increasing Urgency of Interdisciplinary Integration

The 2008 WCC highlighted the contemporary enthusiasm for economic and market-based conservation, and though it remains to be determined to what extent conservation organisations will adopt these approaches, it was clear that they are being championed by an increasingly vocal set of supporters (MacDonald this issue; Monfreda this issue; Peña this issue). Economic and market-based approaches to conservation emphasise that while the benefits of conservation accrue at regional, national, and even global scales, the costs of conservation are often borne in specific places and usually by the poor. These approaches are based on the philosophy that we can only expect things to be preserved if benefits are redistributed to those who ‘pay’ for conservation (Health 1998), and various direct and indirect methods of payment are used to try to ‘make biodiversity conservation a competitive form of land use’ (Kiss 2004: 98). They are also promoted as a way to make conservation self-financing (McNeely 1988).

Market-based mechanisms constitute a particular class of economic approaches to conservation and are driven by ‘frustrations with traditional government regulatory approaches, growing recognition of the limits of protected area approaches to conservation, [and] societal demands for ecologically sound products’ (Scherr *et al.* 2004: 7). While market-based approaches are not new, the prominence they had at the WCC and the scale at which they are conceived (e.g., ‘global’ carbon markets) reflects their growth and proliferation as a preferred conservation solution. Market-based approaches also reflect an increasing engagement of the conservation community with the private sector, which may have a profound impact on how we conceptualise nature and conserve it, but these issues are beyond the scope of this paper (for a discussion on these issues see MacDonald 2010). Here, we reflect on how shifts to market-based approaches have the potential to change the types of knowledge relevant to conservation, which tools and disciplines are deemed relevant and necessary, and what kinds of data are needed, thereby potentially changing the relationship between the social and natural sciences, and making the integration of different knowledge types more urgent.

Economic approaches to conservation require new expertise in areas such as macro and micro economics, finance, marketing, and accounting. This increases the range of skills needed on a project team and makes engagement and integration across disciplines more urgent. If economists are to take a more prominent role in conservation, we might anticipate a shift in the composition of the ‘ideal’ project team and perhaps a corresponding decrease in the role of natural scientists. What effect might this have for the relationship between natural and social scientists? Along those same lines, we might anticipate non-economist social scientists, such

as anthropologists and geographers, finding it increasingly difficult to argue for a place on a team that 'already includes a social scientist'. As a result, we risk losing the perspectives of those who provide detailed, place-based data and analyses of social and ecological contexts.

There have been important critiques of economic approaches to conservation that suggest we cannot afford to lose those analyses of local contexts (Igoe & Brockington 2007; Global Forest Coalition 2008). For example, the Global Forest Coalition completed case studies of a carbon sink project in Colombia, certification in South Africa, ecotourism in India, bioprospecting in Costa Rica, and biodiversity offsets in Paraguay and found that local communities, particularly indigenous peoples and women, are not benefiting from these projects and that projects can affect community-level systems of governance, negatively impact livelihoods, and reduce food security (2008). Even when local communities are able to successfully enter the market, Igoe and Brockington argue that 'it is possible, even probable, that people will lose their capital due to limited opportunities on the bottom rungs of the investment ladder' (2007: 442). As these market-based approaches spread, social scientists will remain important to understanding the impact of conservation interventions.

Moreover, we would argue that a critical perspective remains crucial to ensuring that conservation continues to become more just and equitable for those it most directly affects. Such a perspective becomes even more valuable because a market-based approach—whether it is markets for ecosystem services, sale of conservation friendly products, or trading of carbon credits—requires incommensurable objects be made commensurable through a process of abstraction from their contexts and translation to a monetary value (McAfee 1999; Carolan 2006). It is a rather sticky question to think about who should have the power to assign a monetary value to cultural practices and beliefs. Or in the words of Martinez-Alier, 'who has the power to simplify?' (2002: 271). Who gets to reduce complexity to a dollar sign?

CONCLUSION

It has for some time been treated as 'given' that conservation would benefit from increased interdisciplinarity, particularly increased engagement between social and natural sciences. This paper has built upon previous studies that outline barriers to interdisciplinarity and has responded to a call by Fox *et al.* (2006) to unearth more nuanced and contextualised data to flesh out our understanding of the nature and scope of the problem of interdisciplinarity in conservation. This ethnographic work at the WCC has confirmed the importance of many of the same themes captured in the literature on the engagement of natural and social sciences but has also highlighted issues that have received less attention, like the tensions between 'academic' and 'practitioner' social scientists. Like MacMynowski (2007), we suggest that these tensions need to be understood not simply as problems to be 'fixed', e.g., through developing a shared

language, but are reflective of underlying power relationships through which particular types of knowledge come to be seen as more or less authoritative.

As IUCN and the larger conservation community begin to put more emphasis on economic and market-based approaches, the need for better integration of social and natural sciences becomes more urgent. At this point, it remains to be seen exactly what effect these changing approaches will have on interdisciplinarity in conservation practice and the attendant decisions about the composition of project teams, what data are relevant, which scales of analysis and practice are appropriate, and eventually, the character of the conservation projects that are implemented. These are profound rather than mechanistic questions, and need to be treated as such.

It is important to realise that economic and market-based approaches have not been universally and uncritically adopted by conservation organisations (Monfreda this issue). The debate over their usefulness and implications is currently playing out within many NGOs, and there is tension and push-back from those favouring place-based approaches and from some indigenous and traditional communities and their advocates, often social scientists (Doolittle this issue). Nonetheless, these approaches highlight new practical and theoretical questions and raise concerns about differential ability to pay for services, inequalities between those who are dependent upon a resource for their livelihoods and those who are not, and different ways of thinking about and valuing resources. These questions are particularly ripe for investigation by social scientists and invite exploration through a critical lens.

ACKNOWLEDGEMENTS

Funding for this project was provided by Advancing Conservation in a Social Context, a project of the MacArthur Foundation, and by the University of Georgia. We would also like to thank the anonymous reviewers for greatly improving this paper.

Notes

1. Interdisciplinarity implies more than the mere addition of different disciplines, and there is a pedagogical literature describing the differences between interdisciplinary, multidisciplinary, and transdisciplinary research (e.g., Eigenbrode *et al.* 2007). However, in the literature on conservation, the need to bring in more social science is often used interchangeably with making conservation more interdisciplinary. While this conflation is potentially problematic, we accept it for the purposes of this paper.
2. Issue available at <http://www.conservationandsociety.org/showBackIssue.asp?issn=0972-4923;year=2007;volume=5;issue=1;month=January-March>.
3. Issue available at <http://www.wiley.com/bw/vi.asp?ref=0888-8892&site=1>.
4. Gray and Campbell (2009) surveyed professionals working on Marine Protected Areas (MPA), regarding their commitments to scientific design of MPA versus the need to accommodate local participation. They modeled their survey on a similar study by Steel *et al.* (2004) and concluded that the two contexts of the studies—one a specific location

and issue (Pacific Northwest forests in the case of Steel *et al.*) and the other an abstract and global topic (MPAs in general in the case of Gray and Campbell)—may be key to explaining differences in responses.

5. The reader should note that Welch-Devine is primarily an anthropologist by training, and Campbell is a geographer. As a result, this is an article about social science's involvement in conservation written by two social scientists.
6. In some documents, this session was also called 'Human Wildlife Conflict: Biology and Beyond'.
7. The interviewee was commenting on some of the different theatrics in which social scientists can engage as they advocate for the communities they study.

REFERENCES

- Adams, W.M. 2007. Thinking like a human: Social science and the two cultures problem. *Oryx* 41: 275–276.
- Aswani, S. and R.J. Hamilton. 2004. Integrating indigenous ecological knowledge and customary sea tenure with marine and social science for conservation of Bumphead Parrotfish (*Bolbometopon muricatum*) in the Roviana Lagoon, Solomon Islands. *Environmental Conservation* 31: 69–83.
- Bayon, R., A. Hawn and K. Hamilton. 2007. *Voluntary carbon markets: An international business guide to what they are and how they work*. London: Sterling, VA: Earthscan.
- Blockstein, D. 2001. Integrated science for ecosystem management: An achievable imperative. *Conservation Biology* 13: 682–685.
- Brockington, D. 2004. Community conservation, inequality and injustice: Myths of power in protected area management. *Conservation and Society* 2: 411–432.
- Brosius, J.P. 2006. Common ground between anthropology and conservation biology. *Conservation Biology* 20: 683–685.
- Brosius, J.P., A.L. Tsing and C. Zerner. 1998. Representing communities: Histories and politics of community-based natural resource management. *Society & Natural Resources* 11: 157–168.
- Büscher, B. and W. Whande. 2007. Introduction: The politics of engagement between biodiversity conservation and the social sciences. *Conservation and Society* 5: 1–21.
- Campbell, L.M. 2003. Challenges to inter-disciplinary research: Perspectives of a social scientist. *Marine Turtle Newsletter, 100th Anniversary Special Issue* 100: 28–32.
- Campbell, L.M. 2005. Overcoming obstacles to interdisciplinary research. *Conservation Biology* 19: 574–577.
- Campbell, L.M. 2010. Studying sea turtle conservation and learning about the world: Insights from social science. *Conservation and Society* 8(1): 1–4.
- Carolan, M. 2006. Conserving nature, but to what end? Conservation policies and the unanticipated ecologies they support. *Organization & Environment* 19: 153–170.
- Eghenter, C. 2004. Social science research as a tool for conservation—The case of Kayan Mentarang National Park (Indonesia). *Policy Matters* 13: 224–233.
- Eghenter, C. 2008. What kind of anthropology for successful conservation management and development? In: *Against the grain: The Vayda tradition in human ecology and ecological anthropology* (ed. Walters, B.B.). Pp. 195–205. Lanham, MD: Altamira Press.
- Eigenbrode, S.D., M. O'Rourke, J.D. Wulforst, D.M. Althoff, C.S. Goldberg, K. Merrill, W. Morse, *et al.* 2007. Employing philosophical dialogue in collaborative science. *Bioscience* 57: 55–64.
- Endter-Wada, J., D. Blahna, R. Krannich and M. Brunson. 1998. A framework for understanding social science contributions to ecosystem management. *Ecological Applications* 8: 891–904.
- Fox, H., C. Christian, J.C. Nordby, O.W. Pergams, G. Peterson and C. Pyke. 2006. Perceived barriers to integrating social science and conservation. *Conservation Biology* 20: 1817–1820.
- Garlan, S. 1998. Every man for himself and God against all: History, social science, and the conservation of nature. *Yale F&ES Bulletin* 102: 216–226.
- Global Forest Coalition. 2008. *Life as commerce: The impact of market-based conservation on indigenous peoples, local communities, and women*. Asunción, Paraguay: Global Forest Coalition, CENSAT Agua Viva, COECOCEIBA, EQUATIONS, Alter Vida, the Timberwatch Coalition.
- Gray, N.J. and L.M. Campbell. 2009. Science, policy advocacy, and Marine Protected Areas. *Conservation Biology* 23(2): 460–468.
- Heal, G. 1998. Markets and sustainability. PaineWebber Working Paper Series in Money, Economics, and Finance. New York: Columbia Business School, Columbia University.
- Igoe, J. and D. Brockington. 2007. Neoliberal conservation: A brief introduction. *Conservation and Society* 5: 432–449.
- King, N., H. Biggs and R. Loon. 2007. Seeking common ground: How natural and social scientists might jointly create an overlapping worldview for sustainable development: A South African perspective. *Conservation and Society* 5: 88–114.
- Kinzig, A. 2001. Bridging disciplinary divides to address environmental and intellectual challenges. *Ecosystems* 4: 709–715.
- Kiss, A. 2004. Making biodiversity conservation a land-use priority. In: *Getting biodiversity projects to work: Towards more effective conservation and development* (eds. McShane, T.O. and M.P. Wells). Pp. 98–123. New York: Columbia University Press.
- Li, T. 2007. *The will to improve: Governmentality, development, and the practice of politics*. Durham: Duke University Press.
- Li, T. 2008. Social reproduction, situated politics, and 'The will to improve'. *Focaal: The European Journal of Anthropology* 52: 111–118.
- Lubchenco, J. 1998. Entering the century of the environment: A new social contract for science. *Science* 279: 491–497.
- MacDonald, K. 2010. The devil is in the (bio)diversity: Private sector "engagement" and the restructuring of biodiversity conservation. *Antipode* 42(3): 513–550.
- Machlis, G. 1995. Social science and protected area management: The principles of partnership. In: *Expanding partnerships in conservation* (ed. McNeely, J.A.). Pp. 45–57. Washington DC: Island Press.
- MacMynowski, D. 2007. Pausing at the brink of interdisciplinarity: Power and knowledge at the meeting of the social and biophysical sciences. *Ecology and Society* 12(1): 20–33.
- Martinez-Alier, J. 2002. *The environmentalism of the poor: A study of ecological conflicts and valuation*. Northampton, MA: Edward Elgar Publishing.
- Mascia, M.B., J.P. Brosius, T.A. Dobson, B.C. Forbes, L. Horowitz, M.A. McKean and N.J. Turner. 2003. Conservation and the social sciences. *Conservation Biology* 17: 649–650.
- McAfee, K. 1999. Selling nature to save it? Biodiversity and green developmentalism. *Environment and Planning D: Society and Space* 17: 133–154.
- McNeely, J.A. 1988. *Economics and biological diversity: Developing and using economic incentives to conserve biological diversity*. Gland: IUCN.
- McShane, T.O., T. Trung, A. Songorwa, A. Kinzig, B. Monteferrri, D. Mutekanga, H.V. Thang, *et al.* In press. Hard Choices: Making trade-offs between biodiversity conservation and human well-being. *Biological Conservation*.
- McSweeney, K. 2005. Indigenous population growth in the lowland neotropics: Social science insights for biodiversity conservation. *Conservation Biology* 19: 1375–1384.
- Meine, C., M. Soulé and R.F. Noss. 2005. A mission-driven discipline: The growth of conservation biology. *Conservation Biology* 20(3): 631–651.
- Nyhus, P., F. Westley, R. Lacy and P. Miller. 2002. A role for natural resource social science in biodiversity risk assessment. *Society & Natural*

Resources 15: 923–932.

- Redford, K.H. and J.P. Brosius. 2006. Diversity and homogenization in the endgame. *Global Environmental Change* 16: 317–319.
- Schaller, G.B. 1992. Field of dreams. *Wildlife Conservation* September/October: 44–47.
- Scherr, S., A. White and A. Khare. 2004. *For services rendered: The current status and future potential of markets for the ecosystem services provided by tropical forests*. Technical Series 21. International Tropical Timber Organization.
- Steel, B., P. List, D. Lach and B. Shindler. 2004. The role of scientists in the environmental policy process: A case study from the American West. *Environmental Science and Policy* 7: 1–13.
- Terborgh, J. 2004. Reflections of a scientist on the World Parks Congress. *Conservation Biology* 18: 619–620.
- Thouless, C.R. 2008. *Workshop report: Human-wildlife conflict: Biology and beyond*. Fourth IUCN World Conservation Congress, Barcelona.
- Turner, M. 2007. *Ecological complexity and the management of common property resources*. Tenure Brief, No. 5. Land Tenure Center, Madison.
- Wilkie, D., W.M. Adams and K.H. Redford. 2008. Protected areas, ecological scale, and governance: A framing paper. In: *Protected areas, governance, and scale* (eds. Redford, K.H. and C. Grippo). Pp. 1–14. New York: Wildlife Conservation Society.
-

