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Review

Creating a 'Conservation with Chinese Characteristics'

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ABSTRACT

As China becomes increasingly influential in international affairs, it is important to understand the unique characteristics of Chinese environmental values and policy processes. This is especially true given the rate and scale of China's environmental impacts on natural ecosystems from local to international levels. Currently, however, Chinese conservation values, policies and practices are not well-integrated. We identify four systemic barriers to conservation in China that contribute to this poor integration: weak rule of law; unclear land tenure; top down government authority; and disconnects between scientific research and management implementation. To advance China toward an environmentally secure future, we suggest that combining traditional Chinese environmental values with contemporary science and international conservation practices will help to create a 'Conservation with Chinese Characteristics'. We do not believe that traditional values should replace modern science and management. Rather, we suggest that, given the cultural and political conditions in China today, using traditional values to frame contemporary environmental science and ecosystem-based management may create stronger societal support for conservation implementation.

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1. Introduction

As the People's Republic of China (PRC) continues its economic rise, the country's environmental actions are becoming increasingly influential. An environmentally healthy and secure China can benefit the world, and this will only become more apparent

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over the course of the 21st century (Grumbine, 2007). Up to the present, however, China has a mixed track record solving domestic environmental problems. Some of the world's worst air and water pollution occurs in China (Ansfield and Bradsher, 2010; Economy, 2004). Despite great efforts by the central government, biodiversity protection, as indicated by various data, shows both progress and decline (Xu et al., 2009c).

China's difficulties in managing its domestic environmental problems are beginning to have global ramifications. Regionally important rivers including the Indus, Brahmaputra, Mekong, Irrawaddy, Salween, and Red River all rise in China with hundreds of millions of downstream people dependent on them (HFP, 2010; Xu et al., 2009c). The PRC has become a large importer of unsustainably logged timber from Russia, Asia, and Africa (Laurance, 2008). To accommodate growing domestic and international demand for automobile tires, China has cut down much of its native tropical forest and replaced it with rubber plantations (Ziegler et al., 2009). Imports of wildlife products make China the number one illegal market in the world, exerting great pressure throughout Asia on numerous species of concern (Li et al., 2008; Rosen and Smith, 2010). And, since 2007, though its per capita emissions remain well below the US, China has become the top emitter of CO₂ into Earth's atmosphere, spurring concerns over climate change impacts on both the country and the world (Asia Society, 2009; Lewis, 2009).

More than ever, the PRC needs to balance conservation with development. Yet immediate prospects for this outcome are uncertain. China is in the early stages of the most rapid development expansion in world history, with one of every two buildings under construction today located in the PRC (Campanella, 2008; Fernandez, 2007). Concurrently, China is committed to the multi-year *xibu dakaifa*, "Great Western Development Strategy", which is bringing the environmental impacts of roads and other basic infrastructure to less-developed areas of the country (Doyle and Havlick, 2009; Goodman, 2004). To satisfy demands for construction materials, the PRC already has the world's largest steel and cement industries; these energy-intensive sectors are set to continue their rapid expansion even though they already account for 31% of China's total CO₂ emissions (Asia Society, 2009).

That China will continue to develop over the foreseeable future is a given. Yet China is also of great importance due to a suite of additional factors: it is a mega-diversity country harboring globally significant biodiversity (Mittermeier et al., 2005); it is also a country with great cultural diversity; China's landscape is primarily human-dominated; and, despite recent increases in the standard of living, much of the population remains rural and poor.

China's increasing commitment to conservation action is reflected in the central governments' adoption of various international scientific resource management standards and practices. These include supporting a protected area system, biodiversity research and management, and environmental education. Some of these programs result from the scientific and policy influence of conservation ideas and models imported from outside China. In addition, international environmental nongovernmental organizations (NGOs) are active in the PRC and today can wield broad policy making influence (Yang, 2010).

Conservation programs based on Western models and supported by international NGOs, however, do not necessarily match Chinese values regarding nature and how to practice environmental management. Nor can such programs, implemented under the unique set of conditions in China outlined above, likely conserve the PRC's diversity of species, ecosystems, landscapes, and cultures into the future (Xu and Melick, 2007).

In this paper, we examine briefly some of the traditional attitudes and current characteristics of Chinese conservation and resource management, and we offer suggestions for how to

improve conservation in the PRC going forward. China is a country with an unusual set of circumstances influencing conservation along with unique approaches to valuing and working with nature; it is not enough to simply graft international conservation models onto the PRC (Sanderson, 1995). Some authors have described China's economic system as 'capitalism with Chinese characteristics' to distinguish the PRC's mixing of market mechanisms with state control (Huang, 2008). We believe that the country must also develop a 'Conservation with Chinese Characteristics' which explicitly blends a variety of traditional cultural norms and values with current science and international conservation standards.

2. Methods

For this review, we read extensively in the primarily English language scientific, conservation planning, and environmental history literatures on Chinese conservation past and present. We have discussed conservation in China (and Asia) at length over the years with many people at local, provincial, and national levels including scientists, government officials, park managers, village chiefs and elders, and farmers and NGO staff. Many of these were not formal interview sessions (unless they were part of previously published studies). One of us (Xu) has been engaged with conservation in China (and Asia) for 20 years, working primarily on the links between biological and cultural diversity and human livelihoods. (Grumbine) has 7 years of biodiversity conservation policy analyses in China, focused mainly on the countries' nature reserve system and national and regional environmental security concerns. We have sought to understand contemporary Chinese conservation policies and practices through: local peoples' customary and statutory/institutional access to natural resources; key external drivers for landscape transformations; and the impacts of state conservation policies on biodiversity, human livelihoods, and land-use change. Our conclusions result from critical analysis of the conservation status quo in China, with the goal of improving biodiversity and human livelihoods through conservation outcomes on the ground, which, in turn, would make for a more secure nation.

3. Traditional attitudes and values toward nature in China

The roots of Chinese concepts about nature are complex and often different from Western values. China has a deep history stretching back four millennia containing three major philosophical traditions: Daoism, Buddhism, and Confucianism. None of these traditions match closely with Western conceptions of nature. The history of Chinese intellectual thought shows a continuous probing into the relationships among *tian* (heaven), *di* (earth) and *ren* (humankind). The Dao (way) of the Three Powers (*tian-di-ren*) constitutes a holistic fusion of heaven, earth, and humanity. *Tian* has links to 'nature'; this word originally referred to "sky". The Emperor was the "Son of Heaven" and this helps one to understand how nature was a broader realm for the ancient Chinese, not limited to the terrestrial Earth. The core concept of *tian ren heyi* (heaven-and-human oneness) embodies the general ethos of Chinese philosophy.

Two other Chinese terms hint at these relationships. The Mandarin word for 'nature' is *ziran*, yet the modern usage of this term to define 'nature' dates back only to the early 20th century (Weller, 2006). *Ziran* traditionally meant "self-so", or "spontaneously"; it captures only some of the Western meaning of nature as in 'something that happens naturally'. *Ziran* doesn't cover much of the primary territory many Westerners use to define nature: the physical world, the opposite of culture, the essence of things (see Weller, 2006, pp. 20–23 for a full discussion).

Then there is *qi*, the flow of energy that runs through mountains, rivers, humans – everything. *Qi* goes well beyond a foreigner's conception of 'nature'; to the Chinese, it is the universal force flowing through all elemental matter. There are parallels between *qi* and the energy and information flows in ecosystem ecology, but, of course this scientific terminology lacks any reference to "heaven" or "spontaneity".

In the West, much has been made of Daoism and Buddhism as sources of environment-friendly values (Girardot et al., 2001; Tucker and Williams, 1997). But these traditions, though influential throughout Chinese history, have always been minority streams in China. Daoism and Buddhism have influenced classical poetry and painting more than they have guided how the majority of Chinese have lived their day-to-day lives (see Elvin, 2004).

Confucianism, the third great Chinese philosophical tradition, has always been and continues to be the most influential path defining human–nature relationships (Adler and Bol, 1998). Confucianism is often portrayed as having a utilitarian approach to conservation. Confucian scholars have outlined several steps that link *tian*, "Heaven", directly with the affairs of humans. Individuals are connected with the cosmos in a well-ordered humanist hierarchy that begins with personal cultivation and extends through harmonious family virtues, a well-ordered state with wise rulers, to *tian*. This is yet another notion of nature missing in the West. Confucianism, with its emphasis on the relationship between the natural and human realms, also puts great stock in *tuanjie*, "social unity".

For all the strengths of Confucian attitudes toward nature, there are also weaknesses that must be recognized. Despite the philosophy of *tian ren heyi* unity, nature tends to be treated in the abstract; an ecological world of concrete, functional relationships between species is missing. Just as individuals tend to be subsumed by the greater social group, the ecological roles of individual species can be lost in a collective (and abstract) construction of nature. As a governance system, Confucianisms' emphasis on hierarchy has served the programs of political elites, fostering a disconnect between rulers and the ruled. This pattern has contributed to poor environmental management over time, despite Confucian philosophy emphasizing unity between humans and the land (Elvin, 2004; Tuan, 1968). Even within a single tradition, Chinese environmental values are not monolithic. But clearly, Confucian values are insufficient by themselves to ground a 'Conservation with Chinese Characteristics'.

Beyond Daoism, Buddhism and Confucianism, we wish to point out the multiplicity of beliefs about nature within the PRC's many ethnic nationality peoples that also contribute to traditional attitudes toward conservation in China (Fei, 1989). Though representing only about 8% of China's population, numerous ethnic groups at local and regional levels have for generations maintained functional landscapes through their traditional land use and cultural practices. This indigenous knowledge places a high value on protecting forests, water catchments, and maintaining biodiversity through religious beliefs, hunting taboos and the protection of sacred sites (Liu et al., 2002; Xu et al., 2005).

4. Twentieth century additions to nature in China

Modern meanings of nature in China reflect 20th century accretions including the influence of Western science, Maoism, and recent international ideas about conservation. Western scientific ideas, first introduced into China by the Jesuits in the 17th century, begat the basic cleavage separating people from nature that was largely absent from Chinese traditions (Weller, 2006). By the early 20th century in China, many intellectuals embraced Western science and this only increased as many biologists received training in schools outside the PRC.

For his part, Mao believed that people could conquer nature through Communist Party – organized socialist labor and productivity goals. Maoist values were often manifest in the construction of mega-projects and landscape engineering through the period 1950–1980 (Shapiro, 2001). It is also important to note that during these decades China was closed off from many foreign influences including the years when much American conservation legislation was enacted. It has only been since the 1980s that the PRC has been exposed directly to international environmental laws and best management practices.

'Nature' and, therefore, conservation in contemporary China is a polyglot in transition, a *mélange* of root attitudes (*tian*, *ziran*, *qi*), a highly developed landscape aesthetic inherited from Daoism and Buddhism, multiple ethnic nationality cultural traditions, and a Confucian humanist hierarchy set alongside science and lingering Maoist visions of top-down technological command and control.

Modern consumer culture has also taken hold in the PRC (Harris, 2004). As in much of the world, global standards of market consumerism often take precedence over environmental values. Contemporary Chinese conservationists are busy "translating" global environmental norms into Chinese society and there is a swelling movement of citizens, domestic NGOs, and the media that want to reduce pollution and enhance environmental quality for people (Yang, 2010). And while there is growing support for conservations' role in protecting the PRC's natural patrimony; few connect concerns for China's endangered species with real world habitat requirements. Nor are there many serious attempts to integrate *ren*, "humankind", into conservation planning in China, even though people are often dominant in China's landscapes. There is limited evidence on the ground of a Chinese conservation based on protecting biodiversity, ecosystem functions, and local, community-based environmental traditions—yet.

5. Contemporary systemic barriers to conservation in China

Despite the uneven blend of tradition, modern science, and foreign contributions as well as the ongoing focus on economic growth, conservation actions in China are increasing. The central government's commitment to protected area expansion and huge environmental restoration programs provides examples of the large-scale and rapid rates of change that conservation in China is undergoing today (Liu et al., 2008; MEP, 2009; Xie et al., 2004). While these programs show evidence of success, they also indicate systemic problems that must be overcome if a 'Conservation with Chinese Characteristics' is to become sustainable over time. Here, we focus on four barriers: the still-developing rule of law, lack of clear land tenure and use rights, limitations of centralized authority in China, and disconnects between conservation science and management implementation.

5.1. Rule of law

For millennia, China has employed a "rule of man" in lieu of a legal system; the PRC has only been crafting a Western-style rule of law since the late 1970s (Li, 2010). Much recent progress has been made with significant increases in public interest and environmental litigation. Still, for conservation efforts, there is much room for improvement. The state does not require analyses of alternatives to proposed projects in environmental impact assessments (McElwee, 2008). Citizens don't have legal standing to sue developers in the public interest, though the first-ever lawsuit brought by a Chinese NGO was accepted in a municipal court in 2009 (Wang, 2007; Xie, 2009). Corruption and cronyism can undermine local government environmental enforcement since both judges and Environmental Protection Bureau personnel are hired,

paid, and fired by local officials (Bergsten et al., 2008; Cohen, 2006). Even straightforward environmental regulations such as mandatory energy efficient building codes are not always enforced (Economy and Segal, 2009).

5.2. Land Tenure

Absent a strong rule of law and unlike many countries where legal rights are clearly codified and enforced, murky land tenure is a big problem throughout China. All land technically belongs to the state; confusion reigns, however, over the legality of collective, local-level user rights from timber to mining and from hunting to the collection of fuel wood and non-traditional forest products. Chinese law here is opaque, corruption abounds, and the state can (and often does) extinguish use rights without due process (Ho, 2001). Many scholars believe that clarifying land tenure is critical to the development future of China and the PRC is actively experimenting with forest tenure reform, though privatizing natural resources without environmental safeguards may become problematic (Xu, 2010). Certainly, clarifying land tenure and implementing corresponding legal rights and responsibilities is central to meaningful conservation planning given that collective forests account for 58.4% of the nation's total forested lands (Cheng, 2009; Zhu et al., 2006).

As infrastructure development and urban expansion proceed, conflicts will increase between rural area customary use rights and state-driven plans to access resources. Protected areas expansion, for example, cannot be relied upon to protect biodiversity under such pressures, especially when anywhere from 30–60 million people live in and around reserves (Jim and Xu, 2003). Residents often have collective use rights adjacent to reserves, though these rights, as noted above, are not often specified clearly. If any new systems designed to capture the value of clean water and healthy forests (i.e. payments for ecosystem services) are to be put in place then land tenure reform will figure greatly in building a workable system (Wunder et al., 2008).

5.3. Government authority

China's government has the power to initiate enormous changes without the due process that informs problem definition and policy implementation in other nations. This can sometimes be a good thing for environmental policy; for example, the rapid implementation of China's large-scale environmental restoration efforts (i.e. the Sloping Lands Conversion Program) could not occur in the West. However, despite Beijing's authority, political power in the PRC is also decentralized and susceptible to individual influences and discretionary power (Li, 2010; Xu and Ribot, 2004). This often creates constraints on efficient conservation practice (described below): bureaucratic competition, narrow definitions of "success" and "political achievement", and restricted communication and implementation channels between the government, NGOs, and citizens.

A focus on maintaining political control is a hallmark of the central state in China that is reflected throughout all levels of government (Duara, 2009). Absent a well-developed rule of law and coupled with a modern land management history that has been both turbulent and contradictory, it is easy to understand the "fragmented authoritarianism" that contributes to numerous battles for territory within and between bureaucratic levels (Lieberthal, 2004). Multiple ministries and bureaus struggle as they attempt to make sense out of a conflicting mix of mandatory and discretionary powers. In conservation work, competition creates difficulties due to the conflicting values and individualistic determinations of multiple decision makers (Harris, 2008).

Given the level of competition throughout the Chinese bureaucracy, it is essential to understand concepts of "success" and *zhengji*, "political achievement". Chinese officials regard evaluations by superiors from higher levels of government as more important than feedback from peers and citizens. "Success" is often measured symbolically by on-the-job field visits from high-level officials. This creates and maintains a narrow focus on upward accountability that can be resistant to reforms based on accommodating local community interests. Shared decision making between the state and local, customary-based institutions is not a hallmark of China's political process.

The concept of *zhengji*, political achievement, reinforces individualistic power relationships. Problems over implementing new national-level environmental impact assessment criteria on projects that are closely connected with powerful local figures show the difficulties of overcoming *zhengji* (Van Rooji, 2006). Although political favoritism and influence occur in many cultures, networks of relationships and obligations are exceptionally strong in Chinese society (Bian, 1994).

Dependence on high-level centralized authority also influences relationships with NGOs and citizens by limiting the amount of environmental advocacy and fundraising that these two groups of environmental actors may engage in. The state originally encouraged foreign NGOs to import their problem-solving skills and funding to help China gain capacity to untangle environmental problems. Today, in addition to numerous international organizations, there are thousands of domestic environmental NGOs. But given China's historical dependency on centralized authority, private philanthropy has developed little (Buckley, 2007; Young, 2007). This narrows the financial input and effectiveness that NGOs in China can leverage to solve complex environmental problems that demand coordinated action from multiple parties (Tang, 2008).

Chinese authorities may be slow to loosen NGO restrictions, but the government has made seminal moves to give local people greater civic representation. From the 1998 Village Organic Law (with 2010 revisions) that allows villagers to elect and replace local representatives to the 2008 environmental disclosure law, people in China have slowly been gaining a greater political voice (China Dialogue, 2009; French, 2008). Nevertheless, most major conservation programs are implemented from the top down with little input from the local people most affected. Some NGO's view close ties with the government as an asset; other groups have embraced community-based conservation and seek input from villagers in their project areas (Plummer and Taylor, 2004). But allegiance to the state remains deeply entrenched in China. Too often, government officials employ a "nationalist narrative" (Yeh, 2009) that marginalizes local peoples' contributions to environment and culture (see in general Scott, 2010; Sturgeon, 2007). Leaders at all levels have been less interested in ceding control to local people under the assumption that the hallmarks of community-based conservation – collaboration, transparency, and accountability – automatically undermine central authority.

5.4. Disconnect between science and management

The above barriers to conservation in China influence a general disconnect between conservation science and management outcomes. Conservation biology principles are lacking in government plans for designating protected areas or environmental restoration projects (Harris, 2010; McNeely et al., 2009). Quotas such as number of hectares protected or trees planted continue to drive conservation implementation in spite of empirical research that portrays general targets as problematic (Svancara et al., 2005). In addition, there are relatively few links between Chinese scientists pursuing

applied wildlife research and protected area managers using such research results on the ground (Harris, 2008). Given the paucity of connections between scientific research and management application, it is easy to understand why conservation in China has yet to reach its potential.

6. Creating a 'Conservation with Chinese Characteristics'

In the last 60 years, China has negotiated civil war, revolution, Maoism, and reform and opening to market capitalism, ascending to become the world's second largest economy. Conservation during this period has been subject to dramatic, unpredictable swings in government regulations from diverse common property arrangements arranged by local peoples to large-scale state collectivization, replacement of the collectives with the Household Responsibility System, and now, a globalized, state-regulated economy (Grumbine, 2010).

But with ongoing environmental deterioration and the uneven performance of foreign conservation models in a Chinese context, issues are coming to a head. Land transformation is not slowing down; from 1978–2007, the density of the national road network almost tripled (Wang, 2008), and in just the last 2 years the national railroad system will have increased by 13,000 km or 13% (Xin, 2011). Cities are expanding rapidly as infrastructure and services for 300 million additional urban dwellers are being built (Woetzel et al., 2008). The effects of global climate change, projected to impact the PRC significantly, are already being felt through drought and melting glaciers in western China (Qiu, 2010; Morton, 2009; Xu et al., 2009b).

In what directions might conservation in China proceed? How can China combine the best of its own cultural traditions of working with nature with science-based conservation lessons imported from the rest of the world?

China has the opportunity to create a unique conservation that can influence both domestic and international affairs. This is a task for the Chinese; there are valuable concepts to procure from outside sources, but the PRC must construct its own solutions. Since at least the 1930s, Chinese policy makers and public intellectuals have wrestled with how to “accomplish the renovation and transformation of Chinese culture by retaining the essence of traditional culture while absorbing the best elements of Western culture” (Yu, 2009, p. 128). But little attention has been paid to doing this for Chinese conservation.

We define 'Conservation with Chinese Characteristics' as an explicit union of traditional cultural values (both Han and ethnic nationalities) with contemporary conservation science and ecosystem-based management practices. We do not believe that traditional values can or should substitute for contemporary science and management; rather, we suggest that accenting some traditional values as framing devices may create stronger support for conservation implementation using science and ecosystem-based planning adapted to Chinese circumstances. We don't pretend to have a comprehensive set of answers to how these processes should evolve. As exemplified by the tensions toward nature found in Confucianism that we have already highlighted, conservation in China is exceedingly complex and will remain a work in progress. Nevertheless, we believe that a renewed emphasis on Chinese values from multiple traditions that place humans in partnership with the land could strengthen overall support for science-based conservation practice. Maintaining focus on the four systemic barriers to conservation in China, we offer here a rough sketch of major environmental fault lines at village, regional, and national scales that Chinese policymakers and managers must negotiate to create a viable 'Conservation with Chinese Characteristics'.

6.1. Village China

People live almost everywhere in China, therefore, effective conservation must benefit villagers. Village-level conservation is often grounded in traditional ecological knowledge along with deep-seated cultural beliefs and *xiangguiminyue* (local rules and norms), based on respecting nature while using it for *ren*, human-kind. Foreign conservation models adopted by the government are often based on protecting nature, not utilizing it. Especially in west and southwest China where development is only now gaining speed, 'Conservation with Chinese Characteristics' must contain equal parts of biology and culture.

The question is, will *xiangguiminyue*, that nowhere have the force of law, break down under the pressures of globalization and state economic modernization campaigns, or will village-level customs and cultural practices toward nature receive government support to adapt? A community-level 'Conservation with Chinese Characteristics' would acknowledge local land use customs and culture and use them to frame support for the adoption of modern conservation practices. There is a growing body of Chinese research portraying the value of indigenous knowledge in maintaining biodiversity (Salick et al., 2006; Xu et al., 2009a; Yin, 2001). The problem in China is that authorities at all levels continue to follow the 'rule of man' and have a poor track record of inclusive conservation planning. Numerous developing world studies suggest that successful village-level conservation “requires collaboration, transparency, and accountability so that a learning environment can be created” (Berkes, 2004, p. 624). But in China, government officials often assume that rural people who lack education in general and scientific knowledge in particular have little interest in modern conservation (Herrold-Menzies, 2010; Van Rijsoort and Zhang, 2005). Studies have shown, however, that if local people in China are allowed to participate in resource management, they “get the science” (or at least its practical implications), and become motivated to protect wild habitat (Menzies, 2007; Plummer and Taylor, 2004). If authorities acknowledged this research, they could use it to design community-level projects that might strengthen conservation outcomes on the ground, craft land tenure reforms, reduce disconnects between research and implementation, while at the same time increasing support for government programs.

These issues are complex because traditional Chinese values link the rule of man with *tuanjie*, “social unity”, and both of these at times may be at odds with empirically-based community-based conservation research and practice. We acknowledge these tensions. But our notion of a 'Conservation with Chinese Characteristics' would encourage a shift in emphasis away from traditional obeisance wed to government authority (rule of man) toward community-based conservation that supports *xiangguiminyue* to engage rural residents for the collective good of an ecologically healthy China in the 21st century (*tuanjie*). Concrete mechanisms to inject a reframed *ren-heyi*, people/harmony into conservation in village China could include: a state-standardized system of village council representatives that explicitly engage local environmental issues (i.e. land tenure rights and responsibilities, water availability along with pollution and treatment, rehabilitation of irrigation systems); preferential hiring of local people for jobs in and around protected areas; priority access to villagers for community-conservation contracts to offer local eco-tourism goods and services; and collaborative decision-making around traditional use rights for grazing and fuel wood collection. The state could also begin to fund environmental education in rural schools, not just in urban areas. Protection of cultural practices also needs a clear legal basis to add greater local control and benefits derived from them. Improving China's environmental impact assessment process to include analyses of the social impacts of proposed projects would help.

Though there are signs that the government is more open to such reforms, into the near-term, the Party-states' narrow interpretation of political authority remains poorly connected to local land use traditions and so lack of clear land tenure and citizen participation will likely remain stumbling blocks to a village-level 'Conservation with Chinese Characteristics'. We would like to believe that at some point, however, officials would accept the lessons learned about command- and- control top down authority leading to an erosion of trust in government regulations by local people (Brechtin et al., 2002; Brockington et al., 2008; Holling and Meffe, 1996; Layzer, 2008). And philosophical Confucianism, while hierarchical, accents links between Heaven and Earth, ruler and ruled, that have been severed in Chinese politics. A renewed emphasis on authorities listening to local people before acting would help to ground a 'Conservation with Chinese Characteristics'. There is no evidence that legitimate science-based, culturally sensitive, community-based conservation will undermine a strong, unified China.

6.2. Provincial China

Provincial governments wield great discretionary authority in China, so it is at this level that a 'Conservation with Chinese Characteristics' may best address the general disconnect between science and policy implementation. Several new conservation experiments in Yunnan province provide examples of ways to employ traditional *ren heyi* values along with science-based conservation to work on this problem.

In 2008, Yunnan Provincial Governor Qin Guangrong announced a multi-year plan to blend environmental protection goals with provincial plans for development. No more would the government segregate blueprints for roads and tourist development from plans to protect nature reserves and state forests (Jiao, 2008). This effort would be science-based, protecting 13% of northwest Yunnan in conservation areas with corridors between reserves to link the system together, and it would be funded out to 2020 with USD 1 billion. Governor Qin's mandate would require changes in the way provincial officials' job performances were evaluated within China's target-based, quantitative system; conservation incentives linked to promotion were part of the new strategy. Overall, Governor Qin used rhetoric that established sustainable development for the good of the land and the people of Yunnan (a modern version of *ren heyi* values) as the basis for these initiatives.

A second conservation planning experiment in Yunnan adds the new category of 'national park' to the Chinese nature reserve system (Zhou and Grumbine, 2011; Zinda, in press). Yunnan's new park policies typify how a 'Conservation with Chinese Characteristics' could offer a way forward by explicitly employing an interactive human–nature matrix as a modern version of traditional *ren heyi* values. These new protected areas are not copies of national parks in the West. Parks should not only “conserve the natural and cultural resources effectively, but also promote the development of related industries through tourist activities” (to) “alleviate the contradiction between resources conservation and regional development” (ROPGYP et al., 2010, p. 1). Unlike national parks in the US, Yunnans' policies create an explicit management zoning system that accommodates local peoples' livelihood needs. It also allows tourist development to fund environmental protection with a portion of park entrance fees allocated for local community development and education. If these park pilots are successful, they will likely reflect positively on the status of local government officials.

But just as there is a disconnect between conservation science and management in China, so is there a similar “implementation deficit” between central government rules and local government implementation (Morton, 2010). There is some evidence from environmental policy work in China that this deficit or “enforcement

gap” may be reduced through policies targeted specifically at local and provincial-level officials (Gang, 2009; Lo et al., 2006). Other studies at the interface between the Chinese private and public sectors show that institutional change often occurs in an informal adaptive manner that “eludes strict definition of variables, tidy hypotheses, and bold predictions” (Tsai, 2007, p. 221). These conclusions match our experience and point to the challenges of untangling conservation policy in China. For both of the above experiments, creating a 'Conservation with Chinese Characteristics' won't eliminate older *zhengji* values from the Chinese system. But it may nudge traditional “political achievement” closer to ‘credible scientific knowledge’ and ‘community support’ as new standards for success.

What happens next with these visionary conservation planning experiments in Yunnan will tell much about the future of building a national-scale 'Conservation with Chinese Characteristics'. These plans will be less successful if Yunnan's new provincial conservation targets with their links to specific promotion criteria are implemented poorly, or tourism development in the national parks trumps environmental protection standards (Zhou and Grumbine, 2011). But these efforts do begin to forge explicit links between conservation and development in modern China using (even if indirectly) traditional values that link back to *tian ren heyi*. What we would like to see is a more explicit use of these core values that are found across many cultural groups in China to place conservation science in a more supportive context. After all, the bedrock conundrum in conservation everywhere involves the balance between using nature and protecting it (Grumbine, 1994; Layzer, 2008).

Provincial-level 'Conservation with Chinese Characteristics' will not automatically solve China's environmental problems. While Yunnan has support from Beijing for its novel conservation planning efforts, another central government goal is to increase large-scale hydroelectricity production from the same region with likely severe environmental consequences. (Grumbine and Xu, 2011; Magee, 2006).

6.3. China the country

Building *hexie shehui*, “Harmonious Society”, has been an official PRC goal promoted by President Hu Jintao and Premier Wen Jiabao since 2004 (Lau, 2006; Zheng and Yang, 2005). Using traditional Confucian concepts, China's top leaders spotlight “environment-friendly society” as the means to “harmonious” ends. But without injecting a more explicit conservation science and planning mandate into *hexie shehui* from the national down to the local scale, the central government may end up promoting a 21st century version of the ancient dynastic pattern where rulers at the center received tribute from peripheral ‘resource colonies’. Instead of a “traditional” one-way flow of benefits – electricity from Yunnan, mineral wealth from Tibet, fresh water from southern China – from the resource-rich, economically impoverished west to the resource-poor, wealthy east, our vision of a national-level 'Conservation with Chinese Characteristics' would support the “harmonious” frame of China's leaders while using conservation science-based planning to flesh out the details. For example, Chinese policy makers could stimulate environmental partnerships across China by creating two way flows through Payments for Environmental Services (PES). In fact, a ecology compensation rule (Ecological Compensation Ordinance) should be enacted in 2011. This pilot program will provide direct cash payments for the freshwater, clean air and carbon banks that regional rivers and forests provide to downstream dwellers across the nation. Similar subsidies are already part of China's large-scale environmental restoration programs; PES needs to be expanded throughout China's hinterlands (Tennigkeit and Wilkes, 2008; Yin and Yin, 2010). Ecological taxes

in the form of water source regulation fees have already been used in some provinces and, given the need to reduce China's greenhouse gas emissions, carbon credit programs are also important options to pursue (Lewis, 2010). Shanghai and the Tibetan Autonomous Region are already experimenting with such mutual partnerships.

Facing ongoing economic and social imbalances, government leaders are still grappling with the fundamental environmental conditions that prevail in China – resources are increasingly scarce and under great pressure relative to peoples' demands and expectations. Yet this is precisely where traditional values combine with modern conservation science to advance a 'Conservation with Chinese Characteristics'. China's polluted air and waters breed anti-government sentiment by undercutting the basis of human livelihoods. If the state wants to maintain social stability while building an "environment-friendly" or "Harmonious Society", it would help to promulgate national policies that explicitly link environmental conservation with social cohesion. In doing so, Beijing would be reinvigorating links between people and rulers that form the bedrock of philosophical Confucian values that are not so much in conflict with contemporary conservation ideals.

At all scales of conservation practice, aspects of traditional Chinese values may be harnessed to enhance modern management outcomes. Emerging China has a strong sense of national pride, expanding economic weight, and growing political clout. After 150 years of difficult foreign relations ranging from war and occupation to isolation followed by its recent accession to the World Trade Organization, China is keen to claim its place as a global leader. Given the PRC's biogeographic importance as a mega-diversity country, government officials and conservation advocates should actively use China's growing stature to promote protection of the countries' unique species and ecosystems. Such a move would fit well with the multiplicity of values toward nature found within Chinas' ethnic nationalities and it could help build a broader framework for local people to comprehend environment and development. This would also engage Han citizens' national pride and, combined with messages highlighting the importance of ecosystem services in China, could appeal as well to Confucian traditions of utilizing nature in partnership with political institutions to sustain human society (see in general Bell, 2008). One obvious avenue toward this goal is improving the training of young conservation biologists in the national higher education system. Currently, biology curricula in universities across China lack a strong basis in evolution, general field biology, and coursework designed to stimulate creative problem-solving, though programs being funded through the Chinese National Natural Science Foundation are addressing some of these gaps (National Natural Science Foundation of China, 2010).

The environmental future of China may also depend on opening a voice for citizens as much as expanding the economy. This is already occurring through the development of Chinese NGOs, social networks, and civil society (Lee and Hsing, 2010). Yet a recent survey found that more than 86% of Chinese believe that they have no "important" role to play in national environmental protection (French, 2008). In addition, the central government continues to manage NGOs for maximum control, though this also limits civil groups' effectiveness (Hildebrandt, in press). Increased public participation in environmental affairs, however, is not likely to undermine the central government; a 2008 global poll showed that Chinese citizens overwhelmingly support their leaders (Friends of Nature, 2008). A 'Conservation with Chinese Characteristics', as we envision it here, considers citizen participation and greater local control as supporting a strong central state. This points toward a little-known fact of Chinese *realpolitics* highlighted by recent work from social scientists: nondisruptive environmental action that employs traditional cultural ideals through the use of sym-

bolic language gains legitimacy with the state (Ho and Edmonds, 2007; Yang, 2010).

7. Conclusion

Call it 'Conservation with Chinese Characteristics', "Harmonious Society", enlightened self-interest, or common sense; people and nature in China (and any society) are interdependent in the deepest Confucian sense of the term. Confucius was careful to illuminate abiding links between *tian*, Heaven, and what we would label today as environmentally sustainable behavior:

"Only when things are studied is knowledge refined; when knowledge is refined intentions are authentic; when intentions are authentic hearts and minds are (purified); when hearts and minds are (purified) personal lives may be cultivated; when personal lives are cultivated states are governed; only when states are governed is there peace all under Heaven" (Tu, 2001).

Note that Confucian governance depends on the close study of "things"; in 'Conservation with Chinese Characteristics' we would specify ecosystems and indigenous values about nature as those objects that require rulers' consideration. Chinese leaders today have forgotten that the Confucian roots of good governance lie with listening carefully to local people and the science of land conservation.

Environmental values in the PRC could be reconceived to reclaim their ancient Chinese roots. We do not mean that traditional values should *substitute* for modern science. Rather, we suggest that the unique strength of a 'Conservation with Chinese Characteristics' would support modern ecological insights within a reframed *tian ren heyi* working partnership with nature model that more explicitly upheld the inseparable bonds between heaven and earth, nature and people. Using this ancient ideal as a national framework, contemporary conservation concepts such as functional ecological landscapes, adaptive management, and economic payments for ecological services could be better embraced by Chinese citizens as the next evolution of national social norms and behaviors supporting *ren*, humankind. In fact, these conservation goals are reflected in the latest high-level environmental policy documents being discussed in Beijing (CCICED, 2010). But these official policy guidelines, written by scientists and planners, do not incorporate the traditional Chinese values spotlighted here that we believe would make implementation more successful if they were employed to frame the message.

Today, Chinese traditions have little direct influence on Chinese conservation planning. Yet the fundamental embeddedness of people in nature is reflected in Yunnan's biodiversity and national park experiments that aim to protect biodiversity while providing financial benefits to local peoples. It is also behind the central governments' support for national ecological compensation programs. And it is evident in Chinese international leadership in the UN Reducing Emissions from Deforestation and Forest Degradation in Developing Countries program.

We are not sanguine, however, about simple recombinations of selected traditional values with modern conservation science. As we have already pointed out, party-state interpretations of Confucian and indigenous nature traditions are often in conflict with customary values, community-based conservation and local participation. Confucianism, however, is "neither authoritarian or democratic... like most enduring social practices... it is complex and contradictory. The politics comes in with what we choose to use Confucianism to promote..." (Callahan, 2004, p. 138). The Chinese government has interpreted Confucianism to promote nation-state building and political authority. Through a 'Conservation with

Chinese Characteristics', we would encourage the state to use Confucianism to support biodiversity and cultural conservation for an environmentally secure China.

Yet the drive for economic growth in a globalizing world remains the primary force in the PRC. Given the rate and scale of environmental change that the country faces now and into the next few decades, no single element of traditional Chinese values whether Confucian, Daoist, Buddhist or vernacular is sufficient to support the behavioral change necessary to place the country on any road toward sustainability. History is clear on this point. Past and current policies of the Party-state are also insufficient. But taken together and employed as a messaging device in concert with conservation science-based management, the *tian-ren-heyi* framework along with more explicit support of indigenous values toward nature have much to offer that have so far not been used. We believe that the variety of traditional Chinese values that spotlight fundamental truths about human dependence on nature provide a powerful additional incentive to move China toward management that will strengthen and sustain the nation over time.

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