

Conservation, biology, and religion

Van Houtan, K. S.

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upkeep and changes in the organization of human labor on large, consolidated farms. This ecosystem change led to further social changes in economic institutions. Subsistence-based agriculture increasingly gave way to a surplus market-based system. These social and ecological changes also impacted worldviews as agriculturalists believed that technological advances would continue to increase crop yields and make food production more efficient.

Social institutions operate at multiple scales. They are dynamic and mutually reinforcing, as the discussion of one agricultural ecosystem illustrates. A general understanding of the following three institutions provides a framework for understanding human behavior.

14.4.1 Cultural

Culture is a dynamic system of collectively shared symbols, meanings, and norms – the non-genetic information possessed by a society. People are born into cultures, which help shape their perceptions of the world around them. For example, societies that believe guardian spirits reside in forests will often take measures to protect those forests; likewise societies that believe that ecosystems are naturally held in balance might do little to actively conserve their resources. These belief

systems are often called “worldviews”. Societies share some worldviews, or systems through which they interpret information and then consequently act. Within societies many interpretations of reality coexist, depending on an individual’s gender, age, occupation, or education level. Understanding these perceptions helps to explain why individuals act in particular ways in their environments (Marten 2001).

Many traditional societies and human ecologists share a common perception of nature, that everything on earth is connected (for example, the Nuuchah Nulth of Vancouver Island say “Hishuk ish tswalk,” which means, “Everything is one and all is interconnected”). This worldview asserts that the actions humans take have consequences in nature. Human ecologists are inclined to focus on the details of these consequences. Another common worldview sees nature as benign, and presumes that as long as people do not alter the environment too much, she will not harm them (Marten 2001). It is not uncommon to hold contradictory worldviews at the same time. For example, one’s religious beliefs may encourage human domination over nature, while one’s academic field may view humans as just one part of a broader environment (Box 14.4 further explicates the role of religion in conservation biology). Together with values and norms, worldviews

Box 14.4 Conservation, biology, and religion Kyle S. Van Houtan

Conservation is said to be a worthy cause for a variety of reasons. The great wilderness evangelist John Muir advocated nature preservation by describing its majesty. Forests were “sparkling and shimmering, covering hills and swamps, rocky headlands and domes, ever bravely aspiring and seeking the sky” (Muir and Cronon 1997). When she warned of the threats of pesticide pollution, Rachel Carson invoked peaceableness. Her landmark *Silent Spring* (1962) opens with: “There was once a town... where all life seemed to live in harmony with its surroundings.” And in describing the perils of human overpopulation Paul Ehrlich pleads for

justice. His *The Population Bomb* (1968) asserts that enjoying nature and breathing clean air are “inalienable rights.” Often, however, such arguments forget their deep roots in religious traditions. For centuries, religious practices carried the torch of virtue and moral guidance. So it seems appropriate that science and religion might partner in the work of conservation (see Clements *et al.* 2009). Yet today both religion and science face a number of complaints from conservation.

Some Christians, for example, rationalize environmental destruction based on their interpretation of human dominion. Their view

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Box 14.4 (Continued)

holds humans to be superior above all the Earth's creatures and therefore baptizes industrial development and economic growth. Any environmental regulation that limits human enterprise then becomes the enemy of divine order. Other religious beliefs maintain that the path of history culminates in apocalyptic fury. Such sects do not regard ecological preservation because they believe the planet is destined for destruction.

But science is not safe from ecological criticism either. The scientific revolution, some argue, institutionalized ecological destruction by linking experimentation, knowledge, and political power. Scientists then claimed their craft to be the new means to master human limits. It was the great empiricist Francis Bacon, after all, who dreamed a society where nature's secrets were tortured from her. Critics contend that modern science has inherited an insatiable curiosity and lacks the capacity to restrain itself, working alongside government agencies and economic corporations in a united program to exploit the biosphere. Mountains become "natural resources," ancient forests are seen as "agriculture," rivers of fish are "stocks," and human communities become the "labor force."

The question then should not be how religion and conservation biology can combine forces (Box 14.4 Figure). This might forget the ecological complaints against science and religion, which are very real and must be taken seriously. A different approach would be to cultivate the virtues conservation requires. The wisdom to know the virtues from the counterfeits that have been passed down to us requires the practical intelligence and witness of those who practice them. It is the scientists who know science best. And it is from within religious traditions where religions are most faithfully judged. Knowledge in both traditions is social and must be vigorously encouraged. People who have a foot in both a scientific and a religious tradition might be especially important here. They may see more clearly the transgressions that produce the ecological crisis. They may know more than most the virtues that conservation requires.



Box 14.4 Figure Nature is the context for virtue in many religious traditions. Saint Jerome, a father of the early Christian Church, is commonly depicted as a desert ascetic, pulling a thorn from a lion's paw. The upper left image in the painting suggests Jerome is drawn to the wilderness for healing and renewal, the same reason the lion is drawn to him. (Saint Jerome and the Lion. Roger van der Weyden. Reprinted with permission from The Detroit Institute of Arts).

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Box 14.4 (Continued)

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underlie resource management systems, and form the basis for decision-making and action.

An example from Papua New Guinea illustrates how culture impacts conservation interventions (West 2006). Noticing the decline in birds of paradise, an international conservation organization set out to save these species from extinction. Since conservationists saw the importance of these birds for the ecosystem and local community, they believed the local resource users would readily comply with their project. Unbeknownst to the conservationists, when they asked the local villagers to engage in conservation actions, they were entering into a complex exchange relationship. Villagers expected not only medicine, technology, and tourism development, but an ongoing reciprocal relationship by which the villagers would continue to protect species in exchange for ongoing assistance in any number of areas that are usually the purview of government. Fundamental cultural misunderstandings such as this undermine conservation interventions, leading to disappointment and project disintegration.

14.4.2 Political

Political systems are a set of institutions that govern a particular territory or population. These systems are not to be confused with politics, or the maneuvering for power (though politics heavily influence whether conservation initiatives will be carried out). Political institutions can be distinguished by degree of power concentration, level of formality, global to local scale, and normative characteristics. Conservation interventions often require the reinforcement of policy by multiple political systems at different

scales. A small-scale conservation intervention, for example, may draw on traditional authority, the national environmental ministry, an international NGO (non-governmental organization), and global trade policies to achieve its goals. While there are a range of political systems that impact conservation efforts, we focus on political processes, or governance here. Governance refers to a set of regulatory processes and mechanisms through which the state, communities, businesses and NGOs act (Lemos and Agrawal 2006).

In addition to compensation and clarification on land tenure and access (see Equity, Resource Rights, and Conservation section below), participation in governance has been critical to establishing good relationships between conservationists and local resource users (Zerner 2003). This sharing of resource management, sometimes referred to as co-management, more equitably distributes authority between local people, stakeholders, state-level political systems, and conservation organizations involved (Brechin *et al.* 2002). There is considerable controversy over when, where, and to what extent co-management should be endorsed. Some worry that co-management and consideration of local concerns are dangerous, over-riding the maintenance of biodiversity, whereas others call for increased equity for indigenous and local communities. These debates should be contemplated in light of the fact that political and economic institutions are the products of a contestation for power between various sectors of a population, and that historically this struggle has resulted in entrenchment of institutions that favor the powerful. That is, conservation must often arise through institutions that are themselves considerably inequitable.

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