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## Ethnoprimatology: Toward Reconciliation of Biological and Cultural Anthropology

Erin P. Riley

*University of Georgia, Athens, GA*

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*Articles***Ethnoprimatology: Toward Reconciliation of Biological and Cultural Anthropology**Erin P. Riley<sup>1</sup>

*One of the hallmarks of the discipline of anthropology is its holistic approach to the study of what it means to be human. A perennial challenge to the discipline, however, is the question of whether biological and cultural anthropology can truly coexist given their traditionally disparate epistemologies and methodologies. In this paper, I argue that the emerging field of ethnoprimatology, which focuses on the ecological and cultural interconnections between human and nonhuman primates, has real potential to bridge these two subfields. I support my argument by discussing the theoretical rationale of an ethnoprimatological approach with regard to the notion of “natural environments” in primate ecology and conservation, as well as in anthropology in general. I also discuss the practical rationale of such an approach in the contemporary era where anthropologists and others are increasingly realizing that conservation needs to take place within a broader ecological framework that includes the human dimension. By drawing from recent research in ethnoprimatology, I discuss the relevance and power of specific methodologies from biological anthropology, cultural anthropology, and conservation management in making this a multifaceted, integrative, and robust approach to anthropological inquiry.*

**KEYWORDS:** Biological anthropology, conservation, cultural anthropology, methods, interdisciplinary

**Introduction**

One of the hallmarks of the discipline of anthropology is its holistic approach to the question of what it means to be human (Peters-Golden 2004).<sup>2</sup> A 100-yr survey of articles published in the *American Anthropologist* (Borofsky 2002), however, indicates that only 9.5% of them could be considered “holistic,” in the sense that the research represented substantive collaboration across the sub-disciplines. Having done so, Borofsky (2002) ponders why this myth of subfield collaboration still exists within anthropology, concluding that for the most part we as anthropologists (biological, cultural, linguistic, and archaeological alike) have really only been ‘talking the talk’ rather than ‘walking the walk.’

The validity of this hallmark is also questionable considering the fact that there has been a long history of division between cultural and biological approaches to the study of humanity (Howells 1952; Paul 1987a; Morell 1993; Cartmill 1994; Calcagno 2003). Many see the source of the dislike and tension between cultural and biological anthropology<sup>3</sup> as a function of the two competing traditions that have existed in anthropology since its inception: the objective approach, which stems from the biological sciences, and seeks to discover causes or laws to explain phenomena, and the humanistic approach, which seeks to explore more subjective knowledge through interpretation and the search for meaning (Cartmill

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<sup>1</sup> Erin P. Riley, Ph.D., Department of Anthropology, University of Georgia, Athens, GA 30602 [rilevep@uga.edu](mailto:rilevep@uga.edu)

<sup>2</sup> This holistic approach applies to American anthropology which has always been defined by its “four-field approach”—the incorporation and integration of the biological, cultural, archaeological, and linguistic perspectives.

<sup>3</sup> It is important to point out, however, as does Calcagno (2003), that this dislike and tension is not a problem that stems from anthropology per se but from the anthropologists themselves.

1994; Rappaport 1994)<sup>4</sup>. In some cases, this mutual intolerance has resulted in the division of anthropology departments, where many biological anthropologists have found homes in other departments, such as biology<sup>5</sup>. While some biological anthropologists may be delighted with such divisions, others argue that without the cultural component, biological anthropologists are little more than “egocentric zoologists” (Ruff 2002: 2). Furthermore, others (e.g., Nader 2001) consider these seemingly disparate approaches to not be mutually exclusive, and question why we continue to dwell on a “false problem” rather than striving to blur the boundaries.

Fortunately for the discipline, a number of anthropologists, cultural and biological alike, have attempted to identify areas of convergence in hopes of reaching reconciliation. Paul (1987b) points out how there have been parallel developments in biological and cultural anthropology in emphasizing *individuals* as the strategizing agents. Some look to the link between primatology and human evolutionary ecology, with its attention to the evolution of culture and human behavioral ecology (e.g., Smith & Winterhalder 1992) as a bridge between the biological and cultural realms of anthropological inquiry (Rodman 1999). Rappaport (1994) contends that an adequate understanding of humanity must encompass both law and meaning. Matt Cartmill, in his luncheon address at the 1994 meeting of the American Association of Physical Anthropologists, admitted that biological anthropologists do have something to learn from more humanistic approaches; critical theory, for example, demonstrates how knowledge acquisition is often a political process rather than one of pure discovery<sup>6</sup>. Cartmill (1994) goes on to state that what is needed is not a retreat by biological anthropologists from their cultural colleagues, but rather an engagement between them. Borofsky (2002:474) envisions public anthropology as providing a hopeful point of convergence, as we move away from the intra-disciplinary concerns to those of the public, and the real world in which our “work faces more critical tests.”

Yet still, in the new millennium, the question remains: can biological anthropology and cultural anthropology truly coexist as components of a “holistic” anthropology, given their traditionally disparate epistemologies and methodologies<sup>7</sup>? In this paper, I argue that ethnoprimateology, first coined by Leslie Sponsel (1997), has real potential to bridge these subfields, presenting a new form of reconciliation within anthropology. I discuss the past and present theoretical and methodological linkages between cultural anthropology and primatology to support my argument.

### Theoretical Legacies and Bridges

Prior to 1960 there was little interest in nonhuman primate behavior within the discipline of anthropology. Instead, the early years of primatology were dominated primarily by individuals from other social and behavioral sciences, such as psychology (e.g., Robert Yerkes and Ray Carpenter) and zoology (e.g., Sir Jolly Zuckerman) (Ribnick 1982), as well as a more general influence from ethologists, such as Konrad Lorenz, Niko Tinbergen, Robert Hinde, and Desmond Morris. The two most influential individuals in the development of primatology in American physical anthropology were Earnest Albert Hooten and his student Sherwood Washburn (Gilmore 1981). Although Washburn (1968, 1977)

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<sup>4</sup> Cartmill (1994:1) sees anthropology as “an institutionalized train wreck” caught between science and humanities. It is important to note, however, that this distinction is an oversimplification of the differences in approach within anthropology as there exist a number of paradigms within cultural anthropology, for example, cultural materialism and evolutionary ecology, that are far from humanistic in approach.

<sup>5</sup> At Duke University biological and cultural anthropology split into two separate departments in 1988. In the early 1990s, the Department of Anthropology at the University of California, Berkeley split and biological anthropology moved to the Department of Integrative Biology.

<sup>6</sup> A good example is Celia Lowe’s work (2004) in which she contends that the transformation of the Togeian macaque from “new form” to “endemic species” was a strategic means to legitimize a Togeian conservation project that would attract significant international funding.

<sup>7</sup> A plenary session at the 2003 meetings of American Association of Physical Anthropologists meeting, entitled “Can Biological and Cultural Anthropology Coexist?,” addressed this concern.

considered laboratory research in primatology to be of great importance, he stressed that the primary source of knowledge must come from studies on nonhuman primate in their natural habitats. Irvén DeVore (1962), one of Washburn's students, became the first anthropologist to produce a dissertation on the behavior of free-ranging nonhuman primates (i.e., DeVore 1962). DeVore, however, was a graduate student in social anthropology. His dissertation work on the social behavior and organization of baboons was therefore heavily influenced by Radcliffe-Brown and social theory (Gilmore 1981). For example, his notion of the male dominance hierarchy as the force binding the primate social group is compatible with Radcliffe-Brown's view of human social structure:

The most fundamental fact about the structure of a baboon troop is that all of the adult and sub-adult males of the troop have relationships of dominance and subordination with each other. These dominance and subordination relationships pervade all of the other complex social relations in a troop, and all of adult acts must ultimately be considered in terms of the actors' positions within the dominance structure. (DeVore 1962: 10)

The social relationships, of which the continuing network constitute social structure, are not haphazard conjunctions of individuals, but are determined by the social process, and any relationship is one in which the conduct of persons in their interactions with each other is controlled by norms, rules, or patterns. (Radcliffe-Brown 1956:10)

Furthermore, the key areas of interest in Washburn's and DeVore's subsequent works followed a social anthropological perspective: social organization, dominance, threat behavior, and socialization. Thus, when considering the contemporary debate between cultural and biological anthropology, it is useful to remember that the very roots of anthropological primatology are situated in social theory of cultural anthropology. That being said, I would like to return to the idea of primatology in natural environments to pursue a more contemporary bridge between the two subfields.

Since the 1960s, following DeVore, primate field studies have been fundamentally concerned with the behavior and ecology of nonhuman primates in their *natural* environments. What is implied by "natural environments" is an ecological context that is free of human influence. One could argue, however, that living in close proximity with other primates has characterized much of our evolutionary history, during which human and nonhuman primates competed, possibly directly and indirectly, for key resources in their shared environments for centuries, millennia, or possibly longer (Sponcel 1997; Sponcel et al. 2002; Sprague 2002). For example, in Lopé, Gabon, it is believed that three genera of hominoid (*Pan*, *Gorilla*, and *Homo*) coexisted for a period of at least 60,000 years, whereby overlap existed in the plant foods favored by these genera, possibly resulting in competition among them (Tutin & Oslisly 1995). Godfrey & Jungers (2003) argue, based on cut-mark evidence on remains of *Paleopropithecus* bones from Taoloambiby, Madagascar, that it is possible that human hunting played a role in the extinction of at least some of the large-bodied subfossil lemur species. The potential longevity of this sympatry challenges us to reconsider whether one or more forms of human-nonhuman primate symbiosis necessarily represent an *unnatural* situation (Southwick et al. 1965).

Ethnoprimateology is fundamentally concerned with human-nonhuman primate interconnections, and therefore challenges the existence of natural environments from which humans are separate (Fuentes & Wolfe 2002). The idea of a "human-nonhuman primate community" (Riley 2005a), for example, moves beyond the notion of boundaries between humans and nature, and envisions human and nonhuman primates as members of a dynamic ecosystem. By expanding our notion of an ecological community to include humans as part of nature, our understanding of key concepts in community ecology, such as ecological niche and niche separation, are also expanded. Riley (2005a) found that human habitat alteration results in a shift in niche occupation of Sulawesi Tonkean macaques (*Macaca tonkeana*) in

Lore Lindu National Park, Central Sulawesi, Indonesia; those in human-modified habitats spent more time on the ground, and thus face potential conflict with humans who also occupy this niche in areas of overlap (e.g., agroforestry areas). More time on the ground means that Tonkean macaque foraging strategies may include foods that exist at this level, including both wild foods and anthropogenic foods (e.g., crop raiding on cacao). In this case, crop raiding can be viewed as an interesting example of niche competition rather than a side effect of *abnormal* ecological conditions (Richard et al., 1989).

Investigations of predation pressure on primate communities have also been central to a community ecology approach (e.g., Hart 2000; Schultz et al. 2004). In the primatology literature, however, human hunting is not typically discussed as a form of predation; “the extent to which human hunting can be considered along with nonhuman predation is questionable, as the former often causes much higher mortality rates in prey species than does the latter” (Reed & Bidner 2004: 11). Given the potentially long history of human-nonhuman primate sympatry, which in some areas may have involved frequent human hunting of nonhuman primates (e.g., examples mentioned above), it seems critical that we incorporate humans as key actors in nonhuman primate predation (e.g., Peres 1999).

Moreover, it is important to note that this reconceptualization of “primates in nature”<sup>8</sup> by many anthropological primatologists stems from a research trajectory advanced by social scientists from a more humanistic tradition (e.g., cultural anthropologists, human geographers, and environmental historians), who argue that humans have long played an active role in altering and maintaining what it is that we call “nature,” and who challenge, for example, the notion of an unspoiled wilderness, arguing that wilderness encompasses an enormous amount of human history (Williams 1980; Botkin 1990; Adams & McShane 1992; Cronon 1995; Balée 1998; Agrawal & Gibson 1999; Sponsel 2001). This parallel also plays out in how these reconceptualizations are received by the broader natural resource management and conservation community. Eden (2001) point out that the (humanistic) “attack on nature” (see Soulé & Lease 1995) is often misinterpreted as an attack on the value of biodiversity conservation rather than as a means to expose the problem (and impossibility) of dividing the natural (wilderness, nature) from the cultural (human). Similarly, for ethnoprimateologists, the critique of the notion of a natural environment for nonhuman primates (i.e., as the only appropriate context to examine primate behavior) does not imply a rejection of the importance of conservation efforts that seek to maintain intact, minimally-altered habitat for nonhuman populations. Instead, the objective is to challenge ourselves and others to carefully consider what we mean by “human habitat disturbance,” and “community ecology,” and to consider the broader ecological context that includes the human dimension (e.g., history and power and the role of power relations in conditioning human-environmental interaction (Moore 1996; Bryant & Bailey 1997). Moreover, by problematizing the idea of nature, the humanistic tradition does not attempt to claim that environmental problems do not exist, but rather that we must recognize that environmental problems are cultural—for ‘problems’ are only defined as such because they are experienced by humans (Meadowcroft 2002). As such, Eden (2001) argues that environmental problems can only be successfully addressed through interdisciplinary efforts. Ethnoprimateology represents one such approach.

Fedigan (2000) and Pavelka (2002) identify another important bridge that exemplifies the relevance of primatology to anthropology: the cross-species (primate) perspective employed by primatologists is an extension of the very essence of the discipline of anthropology, the cross-cultural perspective. Ethnoprimateology broadens this extension by focusing on an inter-primate species (i.e., human-nonhuman primate) perspective in the changing, contemporary world. In sum, these theoretical legacies between cultural anthropology and primatology, as well as the contemporary parallels in research trajectories,

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<sup>8</sup> Interestingly, “Primates in Nature”, one of the best texts on primate ecology, does not consider the significance of human influence for the study of nonhuman primate behavior.

create a space for substantive cross-discipline dialogue and interchange in both theory and applied practice (e.g., conservation).

### Multiple Methodologies

Ethnoprimateology's focus on ecological and cultural interconnections between human and nonhuman primates necessitates the use and integration of theory and techniques from both biological anthropology and cultural anthropology. By doing so, this approach differs from previous attempts at reconciliation in anthropology; rather than encouraging the adoption of biological methods to answer questions of culture, ethnoprimateology employs a multifaceted approach that embraces "multiple methodologies" (Orlove 2003).

Just as the theoretical roots of primatology are situated in cultural anthropology, so is its early methodology: early primate field studies took the form of ethnographies, incorporating rich and descriptive accounts of social behavior. An exception to this was the pioneering work of Ray Carpenter (1964), whose methodological contributions (e.g., counting of primates, habituation of nonhuman primates, dyadic analysis for the study of social relationships, and the use of playback in studying vocalizations) are well recognized.<sup>9</sup> Carpenter's work and the further development of ethological methods in biology in the late 1960s and the 1970s (e.g., Altmann 1974) transformed primatology into a science relying on systematic behavioral sampling and quantitative analyses. The search for unifying principles (in primatology, and more broadly, in biological anthropology), combined with this new emphasis on objective, quantitative data, however, did not mesh well with the simultaneous expansion of cultural relativism and postmodernism in cultural anthropology (Strier 2003).

I would argue, however, that biological anthropology has some important methodological lessons to learn from postmodern critiques of "objectivity." Firstly, we are urged to recognize and minimize the biases in our research.<sup>10</sup> For example, within primatology, reflection on our biases resulted in the questioning of the baboon model that overemphasized the importance of male dominance in social organization and ignored female roles other than mother-infant relationships (e.g., Strum 1982, 1983; Fedigan & Strum 1997; Strum & Fedigan 2000). Such reflection has also contributed to the development of alternative perceptions of primate aggression, including expansion from a more 'traditional' focus on aggression (e.g., *Demonic Males*—Wrangham & Peterson 1996) to considerations of cooperation and reconciliation (e.g., *Peacemaking Among Primates*—de Waal 1989) among primates. By being cognizant of our biases we become acutely aware that culture is at work in the practice of science (Nader 2001).

Another important lesson to learn from postmodern critique, relevant to biological anthropology, is being cognizant of who we (researchers) are and who/what we represent; that is, negotiating our identity at our field sites. This is likely to prove particularly salient for field primatologists engaged in conservation efforts at their field sites in light of current trends in people-park conflict and the recognition by many that protected areas need to be managed within a broader ecological framework that includes the cooperation and support of local people (Brandon & Wells 1992; Wells & McShane 2004).

Despite these important lessons, disciplinary pressures (e.g., funding, publication) require that primatologists and biological anthropologists maintain the tradition of conducting and reporting objective

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<sup>9</sup> See Montgomery (2005) for extensive review of Ray Carpenter's methodological contributions to field primatology in the 1930s and 1940s.

<sup>10</sup> It is important to note that this lesson is in line with the reason systematic techniques in behavioral observation were initially developed, and currently, define the methodology of primatology: to minimize bias in the interpretation of nonhuman primate behavior and social organization.

science. As conservationists, primatologists are also well aware that natural resource policies rely on scientific analyses. Yet, as anthropological anthropologists we also need to be attuned to the value of understanding not just what people do but *why* they do it. We therefore have much to benefit from the application of methods in cultural anthropology, and in particular those that originate from cognitive anthropology, which are increasingly being employed by ecological and environmental anthropologists (e.g., Paolisso & Maloney 2000; Casagrande 2004; Miller et al. 2004). Cognitive anthropology examines how people acquire information about the world (i.e., cultural domains such as plants, animals, and kinship terms), and how they process and use that information (Bernard 1995). Cultural domains represent the “smaller, coherent segments of the total information pool constituting culture” (Romney et al. 1986: 314). One powerful technique used to study cultural domains with a long history of use in cultural anthropology (Weller & Romney 1988) is freelisting. In freelisting, the respondent is asked to list all of the *X* they know: for example, “please list all the forest resources you know.” These freelists can then be analyzed by the software ANTHROPAC 4.983 (Borgatti 2004) to determine which items in the list are the most salient<sup>11</sup> (Bernard 1995). For example, Riley (2005b), in her study of overlapping resource use between villagers and Tonkean macaques in Lore Lindu National Park, Sulawesi, Indonesia, used the freelisting interview technique to obtain information on what forest resources were important to villagers, as well as which animals were considered the worst crop raiders by villagers.

Freelisting techniques can also be used in conjunction with cultural consensus analysis (Ross & Medin 2005). Motivated by a recognized need to more objectively investigate culture, Romney et al. (1986) developed the cultural consensus model, a methodology that allows one to assess the extent to which a group of people agree about some domain of cultural knowledge. For example, in order to determine how human ecology affects the conservation of Tonkean macaques, Riley (2005a) used consensus analysis to explore whether respondents shared common perceptions regarding Lore Lindu National Park and its conservation. The basic assumption behind consensus analysis is that agreement among respondents indicates shared knowledge. These techniques are particularly relevant for research examining people’s perceptions of the environment and conservation, such as ethnoprimate research<sup>12</sup>.

Human societies often have elaborate cultural beliefs, values, and customs regarding forests and wildlife, including nonhuman primates (Sponsel et al. 2002). It therefore follows that information we obtain from the above mentioned quantitative techniques can also be enriched by rich, descriptive narrative that gets at the *meaning* behind *why* people do what they do.<sup>13</sup> For example, Cormier (2002) found that monkeys are central to the way of life in the material, social, and ideological aspects of the Guajá culture in western Maranhão, Brazil. Although the Guajá hunt primates for food and capture them for pets, Cormier (2002) found that sustainable hunting practices and the provision of refuges from habitat destruction contribute to primate conservation in the area. Such ethnoprimate research demonstrates that human-nonhuman primate cultural conceptions can contribute to primate conservation. Similarly, Shepard (2002), in his research with the Matsigenka people in Manu National Park in Peru, identified how culture contact, changing resource use practices, and demography are affecting the way the Matsigenka subsist—changes that are now negatively affecting the monkeys in the region. The author suggests that as the human population grows, and as indigenous populations both inside and outside Manu gain greater access to Western goods and services, community-based management of hunting and resource use will become increasingly important.

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<sup>11</sup> It is typically assumed that those items listed more frequently and listed closer to the beginning of list are the most salient (Bernard 1995).

<sup>12</sup> Cultural consensus analysis can also be applied to data collected in true/false, yes/no, and ranked answer formats. See Weller & Romney (1988) and Bernard (1995) for specifics on these methods, and de Munck & Sobo (1998) for good examples of conducting freelists and the application of consensus analysis to these techniques.

<sup>13</sup> See Russell & Harshbarger (2003) for presentation of relevant methodologies for social research in conservation.

Riley (2005a) found that Lindu villagers possess folklore that envisions monkeys and humans as interrelated biologically, ecologically, and culturally, and that this folklore is manifested in taboos against harming macaques, even in areas of human-macaque overlap where Tonkean macaques raid crops. These findings, which have important conservation implications for this endemic primate species, were only possible through the use of multiple methodologies—that is, identifying through systematic techniques in behavioral observation (Altmann 1974; Martin & Bateson 1993) the home range use and overlapping resource use between macaques and villagers, as well as ethnographic research in search of the *meaning* behind people's commitment to not harming the macaques despite their crop raiding tendencies. The integration of methods (primate habitat use and human forest resource use) renders important information on the ecological and behavioral plasticity of nonhuman primates that use human-modified landscapes, as well as on the sociocultural and economic realities of the people living in and relying on those same environments<sup>14</sup>.

### Conclusion

Calcagno (2003) rightly recognizes that although holistic research sounds good, it is often difficult to accomplish, and more importantly, to accomplish *well*. This difficulty should only challenge us to think across boundaries, to accept different ways of seeing the world and different ways of doing research, and to learn that *we can learn* from other experts in our field of anthropology. A critical step will be in the training of current and future anthropologists with more integrative graduate coursework and hands-on training. For primatologists, this means being committed to learning about theories and techniques in cultural anthropology, and for environmental anthropologists, for example, this means learning systematic, quantitative techniques to facilitate communication between themselves, conservation biologists and other natural resource managers traditionally trained in the natural sciences.

Since the inception of ethnoprimateology, there has been a growing interest in this field of study as evidenced by two edited volumes<sup>15</sup> addressing the human-nonhuman primate interface, and a recent symposium, “The Human-Nonhuman Primate Interface: History, Evolution and Conservation,” held at the 2005 meeting of the American Association of Physical Anthropologists<sup>16</sup>. By focusing on an interaction paradigm rather than a pristine paradigm, ethnoprimateology encompasses a flexible approach to the integration of the interests and concerns of both human and nonhuman primates (Fuentes & Wolfe 2002). As such, ethnoprimateological research shows considerable potential to reverse the estrangement between the biological and cultural domains of anthropology, and to work toward reaffirming the soul of anthropology that we have come rather close to throwing away (Howells 1952): the holistic approach to the study of the human condition.

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<sup>14</sup> See Loudon et al. (in press) for recent research on the integration of primatological and cultural anthropological techniques.

<sup>15</sup> Fuentes & Wolfe, eds. (2002) “Primates Face to Face: Conservation Implications of Human-Nonhuman Primate Interconnections” and Paterson, ed. (in press) “Primate Commensalism and Conflict.”

<sup>16</sup> The symposium was organized by Trudy Turner, Agustin Fuentes, and Fred Anapol.



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