1 Introduction: Doing Ethnoprimatology in the Anthropocene

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We are currently in the Anthropocene – the recent age of humankind. Some argue that the onset of this epoch began as far back as 8,000 years ago when humans first began affecting atmospheric greenhouse gas concentrations via agriculture and livestock production (Ruddiman, 2003); others contend that the global impact of human activities is most clearly marked as of the late 1700s (Crutzen and Stoermer, 2000). Regardless of the exact start of the Anthropocene, it is inarguable that humans have changed the Earth in a number of significant ways, many of which are on par with the magnitude of change that occurred in the Pleistocene ice ages (Syvitski, 2012). This reality has important implications for the objectives and practice of the natural, physical, and social sciences.

For primatology, the Anthropocene means accepting the fact that the study of primates living in "pristine" or "natural" habitats may no longer be feasible and, in some cases, may never have been, given the temporal depth of many human–nonhuman primate associations. Take, for example, the finding that in Lopé, Gabon, three hominoid genera (*Pan*, *Gorilla*, and *Homo*) coexisted for a period of at least 60,000 years, possibly competing for similarly favored plant foods (Tutin and Oslisly, 1995). Even some of the early pioneers of field primatology, such as Phyllis (Jay) Dolhinow, recognized the longevity of the human impact on primates: "man and monkey have shared the country of India for thousands of years" (Jay, 1963: 8).

The field of ethnoprimatology takes this reality seriously. First coined by ecological anthropologist Leslie Sponsel (1997), ethnoprimatology studies the ways in which human and nonhuman primates (NHPs), as members of dynamic ecosystems, overlap in their shared ecologies, co-participate in niche construction, and interconnect via key elements of human culture (Fuentes and Wolfe, 2002; Riley, 2006; Fuentes, 2012). In essence, rather than seeing the anthropogenic effect as a dilemma for behavioral ecological research, ethnoprimatology recognizes it as an opportunity to explore how anthropogenic processes may be important socioecological variables in their own right and examine the causes and consequences of behavioral plasticity (Fuentes, 2012; Riley, 2013). Attention to the human–NHP interface can generate important theoretical insights for the evolution of plasticity, community ecology, anthropological understandings of what it means to be human (and a primate, more generally), and has important implications for conservation.

In the years following Sponsel's landmark paper (1997), interest in the ethnoprimatological approach increased dramatically. Drawing primarily from theory and technique in primate ecology, conservation ecology, and cultural anthropology,

scholars have investigated both ecological (e.g., disease, overlapping resource use) and cultural dimensions (e.g., the role and place of primates in local mythology, folklore, and religion) of the human–NHP interface (Wheatley, 1999; Jones-Engel *et al.*, 2001; Fuentes and Wolfe, 2002; Cormier, 2003; Riley, 2007). In recent years, the parameters of these two dimensions have become blurred as ethnoprimatologists increasingly incorporate and integrate diverse theoretical frameworks and methodologies from within and beyond anthropology (e.g., niche construction [Fuentes, 2010]; landscape ecology [Lane de-Graaf *et al.*, 2014]; multispecies ethnography and science and technology studies [STS; Jost Robinson and Remis, 2014]; spatial ecology and geographic information systems [GIS; Klegarth, 2015]; and political ecology [Dore, 2013]).

While the theoretical and practical significance of the ethnoprimatological approach has been well addressed in the literature (e.g., Fuentes, 2012; Riley, 2013; Malone *et al.*, 2014), scholarship on ethnoprimatology's methodological considerations is sparse; to date only two published pieces exist (i.e., Jones-Engel *et al.*, 2011; Riley and Ellwanger, 2013). Because contemporary ethnoprimatology continues to ask new questions as well as old ones in new ways, researchers will need to continue to diversify their methodological toolkits in order to meet the theoretical and applied challenges of this interdisciplinary field. Acknowledging ethnoprimatology's growing popularity and important role as a bridge between the subfields of biological and cultural anthropology (Cormier, 2002; Riley, 2006), we saw the need for a resource to provide methodological guidance for future ethnoprimatological endeavors, specifically with regard to their design, implementation, and analysis. This volume aims to meet this need. Fuel for this volume derived in part from the contributions to two conference symposia: "Sharing Spaces: Living with our Closest Relatives, Strategies for Improving our Relationship with Nonhuman Primates," presented at the 2012 International Primatological Society Congress, and "Non-Human Primates in Human-Modified Habitats: Explorations in Ethnoprimatology," presented at the 2013 American Association of Physical Anthropology meeting. While highlighting current trends in ethnoprimatological research, the chapters in this volume read differently than other primatological edited volumes; they are less about research results per se and more about clarifying the *how-to* of specific types of ethnoprimatological research. In this chapter, we provide a brief history of the development of the ethnoprimatological approach. We then review the methodological landscape of ethnoprimatology, thereby providing the reader with a sense of the volume's layout and the different methods covered within.

1.1 Brief History of Ethnoprimatology

Ethnoprimatology is a hybrid field of study (Fuentes, 2012). Drawing on the emergence of field primatology stemming from Washburn's call for a "new physical anthropology" (Washburn, 1951), the pioneering work of the Japanese school of primate studies (Asquith, 1995, 2000), and the emergence of a coherent body of North American and European primatological studies in the 1960s–1980s (Rodman,

1999; Sussman, 2011), the ethnoprimatological approach initially sought to enrich conservation through a more comprehensive insertion of humans as subjects into primate studies. Starting in the 1990s, the first ethnoprimatological projects included Bruce Wheatley's pioneering work with Bali macaques in Indonesia, John Fa's work on the Gibraltar macaques, Linda Wolfe's work with macaques in India and Florida, Q. K. Zhao's work with macaques at Mt. Emei, China, and Leslie Sponsel's engagement with both neotropical primates and the coconut picking pig-tailed macaques of Thailand. By the end of the 1990s and through the 2000s, Agustín Fuentes and Erin Riley championed the ethnoprimatological approach, publishing both data-driven and theory articles on the topic (see Fuentes, 2006, 2012; Riley, 2006). During this time period researchers such as Loretta Cormier and John Knight were pioneering this type of approach from the perspective of cultural anthropology (see Cormier, 2003; Knight, 2005). By the end of the first decade of the twenty-first century, multiple researchers and research teams from across the range of primate studies were incorporating the ethnoprimatological approach and more fully developing its toolkit (see Paterson and Wallis, 2005; Fuentes and Hockings, 2010; Jones-Engel *et al.*, 2011; Fuentes, 2012; Riley and Ellwanger, 2013; Malone *et al.*, 2014).

In the current form of ethnoprimatology, the "ethno" prefix is different from its use in "ethnobotany" or "ethnomathematics." In each of those approaches the "ethno" marks a specific way of knowing that is culturally distinct from Western forms of the practice. Ethnoprimatology in its twenty-first-century incarnation moves away from traditional approaches in primate studies and assumes humans and other primates as participants in shaping social and ecological space, recognizing mutual roles in both ecological and cultural interconnections (Fuentes, 2012; Riley, 2013). In this manner, over the past 20 years practitioners of this approach have recognized that human–NHP interactions are not merely characterized by conflict and competition with a focus on human hunting and that NHPs are more than just prey, pests, or pets. Agustín Fuentes (2012: 106) outlined the ethnoprimatological manifesto which outlines the core precepts of the practice today: (1) Much of what we consider "normative" behaviors for primates may be stimulated by specific anthropogenic contexts; (2) the assumption that most primate populations have never been influenced by, or been forced to respond to, human activities in their recent or evolutionary histories is incorrect; (3) physiological, phylogenetic, and behavioral affiliations between humans and the other primates result in the two groups' relationships having a special significance ecologically, behaviorally, and evolutionarily.

The ethnoprimatological approach embraces the Anthropocene as a core context for understanding ecology and rejects the ideology that studying primates in minimally impacted "natural" settings is more valuable than studies in areas of extensive anthropogenic influence. It also assumes that humans are not separate from other primates, or from nature for that matter, and a fuller understanding of behavioral ecological and conservation contexts requires engagement with anthropological parameters (Loudon *et al.*, 2006; Fuentes and Hockings, 2010; Lee, 2010; Riley, 2010, 2013; Fuentes, 2012).

1.2 Layout of the Volume

Given its orientation around the human–NHP interface, ethnoprimatology is inherently methodologically complex. In recent years, the scope of methods from which ethnoprimatologists draw has continued to expand in new and exciting ways. The chapters herein highlight this trend by exposing the value and interworkings of a diverse array of techniques. In some cases the methods may be new to primatology; in other cases it is the integration of methods that makes the overall approach novel.

We have structured the volume into three parts, each with their own introductory chapter. Part I, titled "Characterizing the Interface," provides examples of the range of interfaces that exist between humans and NHPs around the world, as well as the many different research areas, methodologies, and methods that are used to characterize this range. Within this section, we have further organized chapters into the following research areas: behavioral ecology, epidemiological studies, predator–prey studies, and human–primate conflict. The methods covered in this section include: NHP behavioral assessments; NHP health assessments; NHP parasitological assessments; NHP hormonal assessments; NHP censusing; live trapping; questionnaires; interviews; camera trapping; geospatial assessments; meteorological assessments; transects; phenological monitoring; isotopic analysis; and biological sample collection, storage, and shipment.

While Part I focuses on the range of primatological and biological techniques used in ethnoprimatological work, Part II, titled "Following the Data: Incorporating Ethnography," highlights the range of ethnographic tools employed by ethnoprimatologists. Beyond the methodological guidance provided, one of the primary goals of this section is to demonstrate how qualitative data can broaden our understanding of NHP behavior. The methods covered in this section include: interviews; participant observation; cultural mapping; ethological observations of animals; ecological monitoring of habitats; discourse analysis of contemporary and historical texts; archival research; free-listing exercises; historical analyses; transects; geospatial assessments; and NHP censusing.

Finally, Part III, "Implications for Conservation," focuses on the conservation implications of ethnoprimatological research. Ethnoprimatologists have argued since the inception of the field that the only way to effectively conserve NHPs is to understand the perspective of the humans living alongside them. The chapters in this section take a critical perspective to NHP conservation efforts, exploring how Western perspectives differ from those held by local/indigenous human groups whose lives are directly impacted by the presence and behavior of NHPs and conservation policies aimed at protecting them. This part of the book highlights the following methods: interviews; participant observation; human focal follows; surveys; and geospatial analysis.

The primary underlying theme of each chapter in the volume, regardless of the part of the book, is how to *do* ethnoprimatology. Each chapter begins with a brief summary that identifies the major questions asked, the theoretical base(s) employed, and the methods used in the chapter, as well as how the same methods could be used

to address similar ethnoprimatological questions. It is our hope that the chapters within provide intellectual fodder and superior methodological guidance for future ethnoprimatological endeavors. Although this book is primarily geared toward primatologists in an effort to illustrate the complexity and interdisciplinarity of the ethnoprimatological approach, we also hope that ethnographers will benefit from reading it and recognize value in expanding their toolkit to engage with some of primatology's more traditional elements (e.g., see Lestel *et al.*, 2006; Candea, 2013).

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