

Ethical Issues in African Great Ape Field Studies

Lori Gruen, Amy Fultz, and Jill Pruetz

Abstract

Great apes have been systematically studied in the wild for over half a century. Great apes are now critically endangered and this raises significant ethical issues for field primatologists who study and work to conserve these primates and their habitats. The most immediate ethical concerns involve the well-being of the subjects, but there are also important ethical considerations involved in researchers' interactions with local human populations and extracting industry representatives. This essay will discuss some of the ethical issues raised by African great ape research, with the hope of generating greater dialogue about best practices. After briefly presenting the history of great ape fieldwork, the ethical issues associated with habituation, intervention, and conservation will be discussed. This text will end with specific proposals that focus on the ethical concerns in great ape field studies.

Key Words: bonobo; chimpanzee; conservation; conservation ethics; field studies; gorilla; habituation; intervention; orangutan

Introduction

Great apes, including gorillas (*Gorilla gorilla*), chimpanzees (*Pan troglodytes*), bonobos (*Pan paniscus*), and orangutans (*Pongo pygmaeus* and *Pongo abelii*) are critically endangered. The African apes, chimpanzees, gorillas, and bonobos are all endangered in their native countries and their populations are declining, even within protected areas. Orangutans will reportedly become extinct within the next decade, and all three species of African apes are in danger of becoming extinct in our lifetimes. Studying endangered great apes in their range countries provides valuable knowledge about their natural behavior and life histories, their complex cognitive and social experiences, and the nature of the threats they face. It also raises a number of chal-

lenging ethical issues. There has been some discussion of the ethics of field research with great apes specifically, and primates more generally (Mackinnon and Riley 2010). Given the challenges that such work raises, it is surprising that specific ethical guidelines for field research have not yet emerged (Fedigan 2010; ASP 2000). This essay will discuss some of the ethical issues raised by African great ape research in the hopes of generating a greater dialogue about best practices. The issues with the even more seriously endangered orangutans in Indonesia and Malaysia are crucially important given the rapid destruction of their habitat for the development of palm oil plantations (Sharma et al. 2012). But the focus of this paper will be on gorillas, chimpanzees, and bonobos, otherwise known as the African great apes. This focus comes from the authors' experience with these apes in captivity and in the wild. After briefly presenting the history of great ape fieldwork, a discussion about the ethical issues associated with habituation, intervention, and conservation will be presented. The essay will end with specific proposals for addressing ethical considerations in great ape field research.

There are two sets of ethical issues associated with great ape fieldwork. The most immediate ethical issues have to do with the well-being of the subjects: how primatologists' work affects the apes and their habitats for good or for ill; whether and under what conditions researchers should seek to intervene to prevent injury or death; and the longer term impact of human activity on their survival. There are also ethical issues that primarily have to do with the researchers' interactions with other humans. An exploration of these relationships raises questions about the role of the primatologist as educator, employer, conservationist, and diplomat. These two sets of issues are not entirely distinct and raise overlapping, sometimes competing, always complex, sets of ethical questions.

Brief History of Great Ape Field Work

The study of wild great apes began in earnest during the second half of the 20th century. One of the earliest systematic studies began in 1959 when George Schaller spent a little over a year studying the mountain gorillas in the Virunga Mountains of East Africa. Mountain gorillas became well known through the work of Dian Fossey who observed them

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for eighteen years, from 1967 until her murder in 1985. In 1960, Jane Goodall began her groundbreaking study of the chimpanzees of Gombe, which has been a continuous research site ever since. In 1962, Japanese primatologist, Toshisada Nishida, began studying chimpanzees in Mahale at what is now a productive long-term field site. In 1973, Takayoshi Kano established a field site at Wamba in what is now the Democratic Republic of the Congo to study bonobos. In 1971, Birute Galdikas began her work in Indonesia studying the now critically endangered orangutans.

Over 50 years later, there have been about a dozen long-term field sites for chimpanzees and a number of both long-term and short-term sites for the study of chimpanzees, gorillas, and bonobos have been established (Kappeler and Watts 2012). The primary goal of the early studies was to learn about the other great apes as a way to help us understand our own evolutionary past. However, in recent years research goals have broadened to include understanding great apes in their own right, learning more about their unique social and behavioral histories, and observing diverse behavioral repertoires in ape communities in different habitats. Because great apes have a long life span, some of the apes that were born in the early days of field research are still alive. Long-term field sites have allowed for a rich understanding of intergenerational learning, multigenerational sociality, the aging process, and how endangered populations adapt to human threats.

Habituation

In order to accurately identify individuals, field researchers must be able to get close enough to the apes regularly, with minimal disruption, in order to observe natural behaviors. This closeness allows for the observation of facial expressions and vocalizations, as well as observation of behavior and subtle social interactions. The process, known as habituation, allows researchers to observe from fairly close distances while the apes engage in typical behaviors, seemingly indifferent to the presence of the human observer. The process of habituation involves being seen daily by the ape in a non-threatening way until the researcher becomes an “innocuous part of the surroundings” (Schaller 1965). Habituation is a slow process that may take many years with great apes. Habituation requires commitment and patience on the part of those doing the research, as well as tolerance on the part of the ape subjects.

In the early days of ape field research, the process of habituation was regularly accompanied by food provisioning. Providing valuable food items for the research subjects hastened their acceptance of human observers but it clearly changed natural behavior. It also led to trouble when animals began looking for food in human communities, putting both humans and animals at risk when they came into conflict. Even planting cane sugar to lure animals into readily visible sites has had deleterious affects on the social hierarchy and the behavioral ecology of the area, as other animals may also

make use of the food provided. Most researchers recognize that provisioning presents more problems than it solves: it interferes in substantive ways with natural behavior, it may impact the growth and development of the apes, and it ultimately poses unnecessary risks to both the subjects and those studying them.

Habituation, even without provisioning, also poses risks. The initial presence of humans causes animals stress and fear; the most common reaction is for the animals to flee, respond defensively, and alarm call. Stress not only affects animals physically, but also can destabilize social hierarchies and increase aggression. Ultimately, the goal of habituation is to achieve a state of indifference in the apes being observed; the animal should thus be relatively stress free and unafraid. However, teaching animals to no longer fear what may be a primary predator—humans—poses additional risks, particularly for great apes whose populations are dwindling and habitats are declining because of human development and poaching. The bushmeat and pet trade are among the greatest factors impacting the continued survival of chimpanzees, and to a lesser extent, other African apes. Proximity to humans also increases disease risks, as many infectious and deadly diseases are transmittable across the species barrier.

Increased vulnerability to human predation is, in many ways, countered by the long-term presence of established research sites. Ongoing field sites experience less habitat disturbance (Wrangham and Ross 2008) and an increased presence of threatened and over-hunted species (Campbell et al. 2011). There are multiple reasons for this: researchers report illegal poaching and other activities, most field sites hire local people who are committed to the success of the project, and the local employees will explicitly or implicitly discourage encroachment. Some researchers are actively engaged in conservation and seek not only to actively protect natural habitat but also to increase the areas that are being protected, as Crickette Sanz and David Morgan did in their work expanding the Goulougo Triangle in Nouabalé-Ndoki National Park.

When human conflicts occur, the fact that a field site exists can also heighten the vulnerability of the habituated apes and the local populations around the site. Boesch reports on the death of a habituated chimpanzee in his study group that did nothing as a poacher approached, shot, and killed him (Robbins and Boesch 2011). As an example, Malone et al. (2010) note, “During the great wars that engulfed the Congo Basin and beyond (1996–2003), the site became a magnet for militant groups. Throughout the period of extreme political upheaval and violence, researchers were largely absent, whereas the local families remained living within a forest of perceived wealth and habituated great apes. Tragically, as a result of soldiers entering the research area, human lives, and a proportion of the bonobo population, were lost.” The ethical responsibilities of researchers to the habituated apes, as well as to the local communities, are not set solely by research goals. Changing political and socio-economic factors are intrinsic features within this sort of research.

In the last couple of years, there has been an increase in concern as human disease has been identified as the cause of many deaths within habituated ape populations. Both naturally occurring and human introduced pathogens threaten gorillas and chimpanzees. In addition to poaching and habitat destruction, disease is one of the greatest threats to the survival of African great apes; making exposure to deadly human disease a serious problem (Kaur et al. 2008, Lonsdorf et al. 2011, Ryan and Walsh 2011). Though human transmission has long been suspected in sudden outbreaks that led to notable mortality, one study provided definitive evidence that common human respiratory viruses were the cause of three distinct outbreaks, which led to significant and rapid chimpanzee deaths in Cote D'Ivoire (Kondgen et al. 2008). Boesch (2008) suggests that the combination of multiple chimpanzee specific diseases, when coupled with immune weakening human diseases, can lead to rapid death in chimpanzee communities. These combinations can be transmitted between chimpanzees or transmitted from other animals to chimpanzees. The threat of disease transmission between species has raised serious concerns about field research (and great ape ecotourism that will not be discussed at length here) in which humans are in close contact with said apes.

A number of proposals have been suggested to minimize disease transmission risk, ranging from instituting a moratorium on field contact with wild apes to vaccinating apes through controlled provisioning and/or darting. Between these proposals lie precautionary practices common in laboratory settings: researchers abstaining from any contact when showing signs of illness; waiting for some period of time after travelling or otherwise being exposed to individuals who may be ill before going back into the field; semi-annual TB testing and up-to-date inoculations and vaccinations for everyone who will be in the field; maintaining high standards of hygiene and waste disposal at research encampments; maintaining health data on individuals within ape communities; and wearing protective clothing, particularly aerosol-blocking facemasks, when in proximity to apes (Collins 2003). Wearing facemasks also has an important expressive impact, as it sends a message to the public who see researchers wearing the facemasks. The message expressed is that the researchers are conscientiously doing what they can to minimize disease transmission for the sake of the apes (Goldberg 2008). Additionally, it may help habituated apes recognize field researchers more quickly or the converse, it will help them recognize poachers or other humans not part of the research team.

Donning more familiar laboratory garb may have subtler impact as well. A less discussed but nonetheless important problem associated with habituation, is the creation of the misperception that circulates amongst the uninformed public when they see popular images of field researchers wandering through the forests in close proximity to apes. As delightful and inspiring as these images may be, they also can generate the faulty idea that great apes are not dangerous or endangered (for the ways popular images can lead to mistaken understanding see Ross et al. 2011). Such images have also

contributed to the desire of many to go and see apes in the wild, and while ecotourism has generated much needed income for human communities in certain range countries, it also increases the number of humans to which apes are exposed. If field researchers were to wear masks and other protective clothing as warranted, this process could facilitate instituting such practices for tourists. In addition, it would help to generate interest in public health issues in local communities that could be augmented with education efforts to benefit both people and apes. If there are programs in place to enhance health care in human communities near research sites, field workers engaging in precautionary practices when working with apes can reinforce public health messages.

Habituating great apes in order for systematic field research to be possible, and establishing long term field sites to conduct this research has not only contributed to our understanding and appreciation of other great apes, but has also contributed to the well-being of apes and the humans who live in immediate proximity to them. But these benefits incur costs as well. Given the role field researchers play in protecting great apes—by bringing information about great apes to a broader public; by protecting them from immediate threats in the form of poaching and habitat destruction; by educating local human communities about the value of the apes; and by working to protect their habitat and the other wildlife that live in the habitat—the benefits of establishing long term field sites generally appear to outweigh the costs, at least for now. Changes in field practices to protect apes from human disease and to promote greater public understanding of these practices are ethically necessary, yet questions on how far researchers should go to prevent illness and injury are complicated. These questions will be addressed in the next section.

Intervention

Environmental philosophers and conservationists have debated the ethics of human intervention in nature within the context of eradication of invasive species in order to protect native species; in determining whether preventing the suffering that accompanies predation is ethically justified; and assessing when, if ever, reintroduction or “rewilding” should occur (Gruen et al. 2012). Though interesting, provocative, and contradictory arguments have been presented in favour of a number of different ethical solutions to conflicts in nature, it may be that no solutions are more pressing than the quandaries field researchers face when confronted with ill or injured great apes. Until very recently, one could say that if the illness or injury was caused by human intervention and there was a safe and ready way of reversing it, then there was an ethical duty for the researchers and others to act. However, given that virtually everything, even in the most remote parts of the world, has been affected by human activity, it is no longer clear how to draw the distinction between what humans cause and what they do not. For example, a non-human predator that is encroaching on ape territory may not have

been a threat to endangered apes if humans hadn't restricted the predator's habitat. Even aggression between individuals in an ape community, or between rival communities may be triggered by human activity, albeit perhaps from activity as remote as the events that have led to global climate change and the changes in food availability that results from subsequent changing weather patterns. The line between illness and injury that humans might clearly be responsible for (direct human injury) and that which we might not be directly responsible (natural food supply) for is getting harder to draw, and primatologists are having to face these issues with greater frequency (Fedigan 2010).

Intervening in Cases of Disease

There are relatively few cases in which researchers have intervened in order to treat disease outbreaks in ape communities. Perhaps the best-known intervention occurred during the polio outbreak at Gombe in 1966. Jane Goodall's team was able to administer the polio vaccine to the chimpanzees by placing it into provisioned bananas. Because the chimpanzees had been habituated to the bananas that were provided, it was not difficult to get the chimpanzees to take the vaccine. Researchers were able to monitor the banana vaccine consumption, but being sure that each chimpanzee got the right amount of the vaccine was problematic. As Goodall reported, if any chimpanzee ingested too much vaccine it might develop polio from the vaccine and that would also mean that other chimpanzees would not get enough of the vaccine to prevent them from contracting the disease. Watching the chimpanzees become paralyzed from polio and trying to prevent debilitation or death through vaccination was harrowing, but a decision that Goodall still defends (Greene 2005). Over twenty years later gorillas in Rwanda were vaccinated by darting in order to prevent further death from a measles outbreak (Webber and Vedder 2001).

As public awareness of the transmission of human diseases to other great apes has grown, so too has an interest in inoculating chimpanzees, gorillas, and bonobos against those diseases for which we have developed vaccines. Ebola outbreaks have been said to decimate gorilla populations, and have had a serious impact on chimpanzees. Some researchers are advocating for the administration of preventative vaccines in order to save the species, and prevent the spread of lethal hemorrhagic viruses to larger populations of apes and humans.

Preventative vaccination, rather than reactive vaccination in response to an immediate disease outbreak, remains controversial, in part because it is experimental. There are also concerns with the expense of vaccinating great apes when the local people have limited resources for health care and disease prevention. Some of the scepticism about preventative vaccination involves assessing the safety and efficacy of delivery of the vaccine, which would most likely involve darting. The practice of darting is dangerous, as there is injury risk to both the ape and the person administering the dart.

Another significant concern with preventative vaccination is the lack of coordinated oversight for this sort of experimentation. When researchers are reacting to an immediate deadly infectious disease outbreak, they are forced to act (or not) as there usually isn't time for an intervention protocol to be brought through an oversight process before leading to its approval. Having agreed-upon guidelines in place to inform research teams about vaccination protocols in the event of an outbreak, and coordinated, easily accessible data on previous actions is advisable.

Intervening in the Case of Injury

Depending on the immediate availability of veterinary resources, most researchers will, when possible, do what they can to assist injured or acutely ill apes in their study area. Providing antibiotics and other medications in the hope of saving lives and other forms of veterinary care when care seems promising has increasingly become the norm, even if in years past such practices were criticized as interference with the natural course of an ape's life. As we have discussed, human impact is ubiquitous, thus making the idea of a purely wild, animal nature metaphorical. The impact of certain human activities on great apes, particularly the injuries caused by snares and traps, has forced primatologists into action. Snares are loops of wire or nylon that are attached to a bent pole. When an animal steps on the wire, the pole releases and tightens the wire around the animal's limb. The snares are not usually set to catch apes, but rather smaller bush animals that are used for food. Unfortunately, younger or smaller chimpanzees and gorillas sometimes get caught in snares or hidden steel traps. When the snare is triggered it tightens around the arm or leg and rips into the skin. Steel traps can break bones. Because of their strength, apes are not usually trapped in place, but the damage is done and if left alone, infection, deformity, and death may shortly follow.

Many research sites now have snare removal programs in place. They employ teams, usually made up of local people, who patrol for snares and disarm traps. They tend to work closely with wildlife authorities and local law enforcement. The apes themselves have recently been observed disarming snares. In Rwanda, at the Karisoke Research Center, just one week after an infant gorilla died from trap wounds, a tracker who was disarming snares observed two young gorillas disarming the snares themselves. Researchers hypothesized that the young gorillas had witnessed others being caught in snares, learned they were dangerous, watched humans disarming the snares, and learned how to disarm them (Than 2012).

Observing a great ape with a trap or snare, struggling desperately to remove it from their body, certainly prompts one to want to intervene and assist. In order to do that safely, however, the ape must be anaesthetized, and that is dangerous. It is easier to administer a dart of anaesthesia to gorillas because they do not tend to climb, assuming the other gorillas allow

administration to occur. Chimpanzees, however, will flee into the trees and, once the anaesthesia takes effect, they could fall to their death or sustain greater injury. Nonetheless, some interventions to remove traps or snares from chimpanzees have been successful. The *Jane Goodall Institute* (2011) reports having successfully freed eighteen chimpanzees from traps and snares in Uganda and, in a particularly dramatic case, provided extended medical care before returning a young chimpanzee to their community. Mugu Moja, a young female chimpanzee, dragged a thirty pound steel trap around with her on her leg for two days before she was located and anaesthetized so the trap could be removed. The veterinarian found her leg so badly damaged that he decided to amputate. She was kept under veterinary care for over a month while she healed, was anaesthetized a second time so she could be transported back to the forest where, upon awakening, she reportedly climbed a tree and rejoined her family. Field researchers, through Mugu Moja's ordeal, were able to gain the interest of local people about the dangers of snares and traps, and many locals are now engaged in snare and trap removal (*Jane Goodall Institute* 2011).

Intervening in Poaching

Mugu Moja's veterinary intervention saved her life and, if her life continues, as it should, she will reproduce and bring infants into her community. Sadly, it is often the case that humans take infants out of the forests to sell as pets or entertainment purposes. Many of these infants are rescued and brought to African sanctuaries where they spend their days with other orphaned apes. The number of great apes in Africa living in sanctuaries now is exceedingly high and most of the sanctuaries are at capacity. Eleven of the twenty Pan-African Sanctuary Alliance (PASA) sanctuaries house over 760 chimpanzees (*Faust et al.* 2011). There have been hopes that one day the orphaned chimpanzees can be rehabilitated and safely returned to the wild. These hopes may be more difficult to achieve than initially thought as recent evidence reveals that sanctuary chimpanzees in Zambia and Uganda are infected with a drug-resistant, human-associated form of staph infection. Reintroducing infected chimpanzees will endanger resident wild apes (*Schaumburg et al.* 2012). In addition, some of the chimpanzees that have grown accustomed to humans have proven dangerous upon release; because of this there are local human populations who oppose reintroducing sanctuary chimpanzees to wild habitats (*Hockings et al.* 2010).

In a remarkable and unique rescue in 2009, Pruett and her team were made aware that an infant from their study group, Aimee, had been taken by hunters from her mother, Tia, who had been injured by the hunters' dogs, but was still alive. Aimee was located in town, confiscated, and after consultation and careful deliberation, Pruett decided to return the infant back to the community. At that point, the infant's contact with humans was limited to being fed a bottle through a wire cage. Aimee was gone for five days total and Tia, though

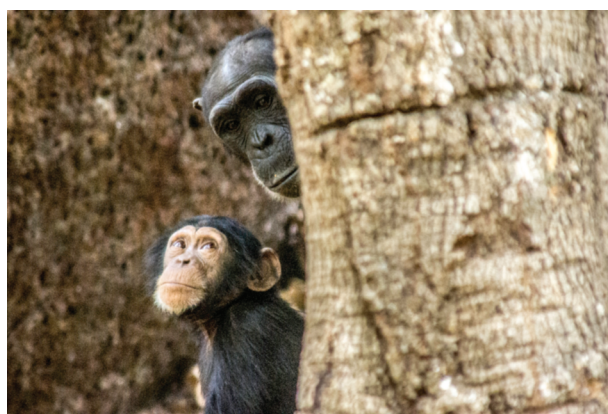


Figure 1: Aimee and Tia (Fongoli, 2012)

injured, was healthy. The researchers left the infant in a burlap sack in close proximity to the group. An adolescent male chimpanzee recovered Aimee and returned the infant to her mother. Mother and daughter (*Figure 1*) were fine for the next three years (*Puetz and Kante* 2010). In late 2012, Tia died from snakebite venom, but Aimee, at the age of five, remains part of her natal community. She was weaned at the time of Tia's death, travels with, and is supported in social situations by older adult males and a former alpha male.

This successful rescue is unique, but it does raise questions about the possible role field primatologists can play; not just trying to prevent poaching, but also establishing monitors to attempt to quickly locate individual apes that have been abducted and seeing to their safe return to the group. Working with locals to serve as informants in the event that poachers have captured apes could be beneficial. One of the potential ethical problems is that compensating informants for their information could contribute to increased abductions.

Conservation

Because great apes are seriously endangered, field researchers often find that they must simultaneously engage in conservation efforts as well as their research projects. In addition to poaching, the other most important factor contributing to the decline of the African apes, especially in Eastern African countries, is habitat loss. Researchers can work to minimize the loss of habitat, even when they sometimes contribute to it. When a research team develops an area as a field site they might cut down trees to build permanent housing, and this can contribute to habitat degradation. At one field site where gorillas and chimpanzees are studied in Bwindi, Uganda, researchers constructed their field site with only local traditional materials, thereby ensuring that the research camp would return to a natural state when the project ended (*Stanford* 2008). Even taking habitat loss into consideration, some infrastructure may still be required to support additional staff members such as research assistants or trackers. Establishing a field site inevitably entails some habitat loss.

Anthropogenic extracting activities, such as logging, mining, and oil drilling, are significant causes of habitat loss (Plumptre and Reynolds 1994). Researchers may unintentionally provide impetus for these extraction operations to move into an area by providing existing infrastructure. Roads or trails necessary to researchers also create additional access points for hunters and poachers. In one area in Uganda, Quiatt et al. (2002) state that over 25% percent of the chimpanzees have been injured or caught in snares, and researchers may inadvertently lead poachers to their study subjects who are then in danger of being killed and having their infants captured for export as pets.

Additional interaction or short encounters with humans, such as field researchers, may lessen an ape's fear of human beings. This may lead to the apes coming closer to people and raiding crops or even attacking humans. Communities that researchers have been working hard to educate and persuade to conserve the apes may instead begin to see the apes as pests that may harm their children or compete for limited food supplies.

Another, often overlooked, aspect of field research is the increase in the local human population size due to the influx of researchers and their assistants. This influx may lead to further habitat encroachment as the research team use resources, including food, water, and firewood, which may be in limited supply. Some sites use electricity to support equipment including computers or refrigerators. Gas is utilized for transport. Sustainable practices in the field become important to minimize the impact of each person on the team; possibilities include utilizing solar, wind, or other natural power sources whenever possible and limiting resource use.

At some sites, researchers are actively engaged with onsite extracting corporations, in order to help them develop sustainable practices. Crickette Sanz and David Morgan, for example, have worked with forestry companies to make changes in logging concessions. Their team at the Goualougo Ape Project has documented the effects of logging on chimpanzees and gorillas and have made recommendations that do not prohibit logging, but rather encourage methods that are sustainable and profitable. They have developed new best practice guidelines that include the identification of important trees for apes, the development of buffer zones around protected areas, and careful planning of roads that do not compromise apes. Like other field primatologists, they have worked in collaboration with the Forest Stewardship Council (FSC) to widely promote sustainable logging practices with consumers, as well as extractors: the protection of great apes being the ultimate goal (Morgan and Sanz 2007; van Kreveld and Roerhorst 2009).

Human Development Opportunities

People often view conservation as contrary to development, creating the perception that helping humans and helping wild animals are two mutually exclusive projects. However, protecting great apes and attending to issues that impact

humans are often complementary. All of the great ape field sites are in countries where there are complex problems affecting local human populations. Though the biggest threats to the survival of great apes are habitat loss and hunting, many people also include public health, political unrest, and poverty (Butynski 2001; Caldecott and Miles 2005; Nellemann and Newton 2002; Sandbrook and Roe 2010). Field researchers often are forced to address these complex issues, and must decide where their efforts will be most helpful. Supporting local people, and the organizations working with the people, becomes important to the survival of both the field site, and the species' being studied.

Field researchers may find themselves becoming philanthropists and look for ways to benefit local residents through the conservation of a particular species. Benefits might come through residents' direct participation in the research, or employment as camp cooks or trackers. Benefits may also be less direct, and include increased access to healthcare and other resources, such as education. In the past, problems have arisen when field researchers were seen as interlopers in the business or life of the local residents (Stanford 2008; Webber and Vedder 2001). Field researchers can have a positive impact on both the local people, and the apes they study, if the work is done carefully and ethically. Many scientists who study great apes have also established non-profit organizations, for example, that in part work toward promoting the well-being of local stakeholders as well as the apes that they study (e.g., <http://www.janegoodall.org/>; <http://www.savannachimp.blogspot.com>; <http://ngogochimpanzeeproject.org/conservation/>).

The great apes are popular, charismatic, flagship species that appeal to the public. Rose (2011) suggests that "the advertising and fundraising value of primate flagship species is tremendous" and forming bonds with these animals may lead to the recruitment of many future conservationists. Field researchers can bring more information about these species to the local communities and the public, thus assisting in conservation efforts.

Many African apes are found in national parks, but have limited distributions outside those parks. There are ongoing efforts by researchers in some areas to link segregated populations of chimpanzees to one another through the use of corridors (Green Corridor Project 2011). In Bossou, New Guinea, there are efforts underway to plant trees to create a forest corridor for the chimps that would link two separate populations of currently segregated chimpanzees. In Rwanda, the Gishwati project involves an ambitious plan of creating a corridor connecting an isolated chimpanzee group with another protected area where chimpanzees live over 50 km away (Forest Landscape Restoration 2009).

Addressing Complex Ethical Issues

As this paper has indicated, there are a wide array of ethical issues facing African great ape field researchers, their students, and collaborators. Current systems designed to help

oversee research, either in the form of Institutional Animal Care and Use Committees (IACUCs) or Institutional Review Boards (IRBs), are not entirely adequate. IACUC members may not have the necessary expertise or authority, and IRBs, though potentially insightful about issues involved in working with local populations, aren't the right oversight body when it comes to the local people, who are not the subjects of great ape field research. This lack suggests that another oversight committee, or structure, should be developed to help formalize guidelines for addressing ethical issues arising in great ape field research. This committee or structure would build on the various projects that have developed over decades among field primatologists. An oversight committee that consists of scholars and experts on African apes, others who are broadly familiar with local human culture and histories, conservation experts, health professionals, veterinarians, development specialists, and ethicists would ensure that the complex issues associated with great ape research would be carefully considered. Such a committee would also serve ancillary beneficial roles—the committee could boost confidence in addressing infectious disease decisions; it could combat human threats to the species; review and improve health and hygiene protocols at field sites; and work to ensure stability at new and existing field sites. Such a committee could also serve as a governing body to help researchers in negotiations with local governments, and representatives

of corporations that are extracting resources in the areas that impact great ape populations.

The primary value to be promoted by great ape field researchers should always be the well-being of the individual great apes, their communities, and habitats. Local human interests are also important, as is the value of the knowledge gained from the studies. Generally, before any study begins, the scientific merits (e.g., what data is expected from the study, whether the population in question is appropriate to yield such data, etc.) must be established. In addition, long term financing of the project should seem likely, and plans for securing funding should be promising. The scientific team should be well suited for the study site, familiar with local customs, laws, and regulations, and have an understanding of the relationships that exist between the local people and the apes that are to be studied. If the project is justified scientifically, and the team is knowledgeable and appropriate, there are still complex ethical issues that must be considered.

Conclusion

There are two decision trees provided here to help primatologists, and perhaps oversight committees, think through ethical concerns. The first tree (Figure 2) raises questions about the benefits versus the negatives when establishing a new

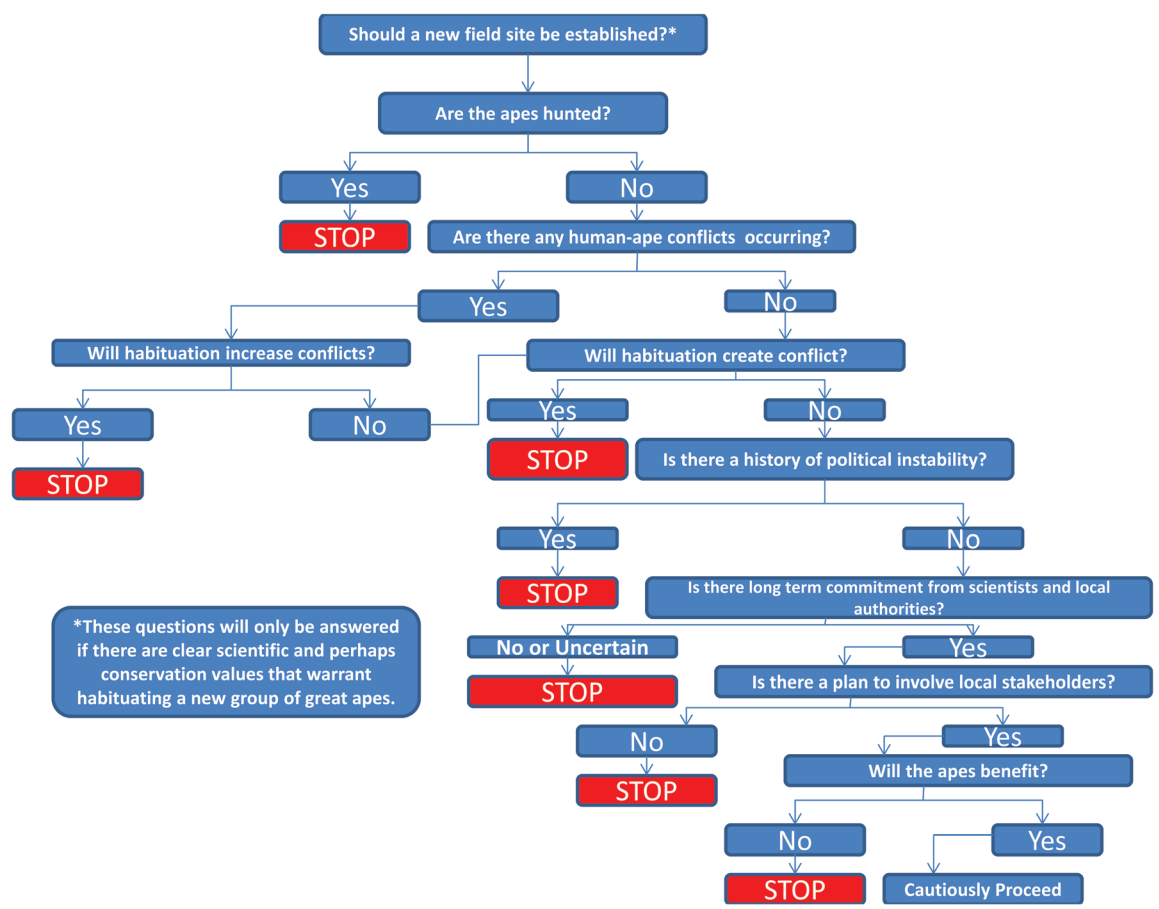


Figure 2: Habituation Decision Tree

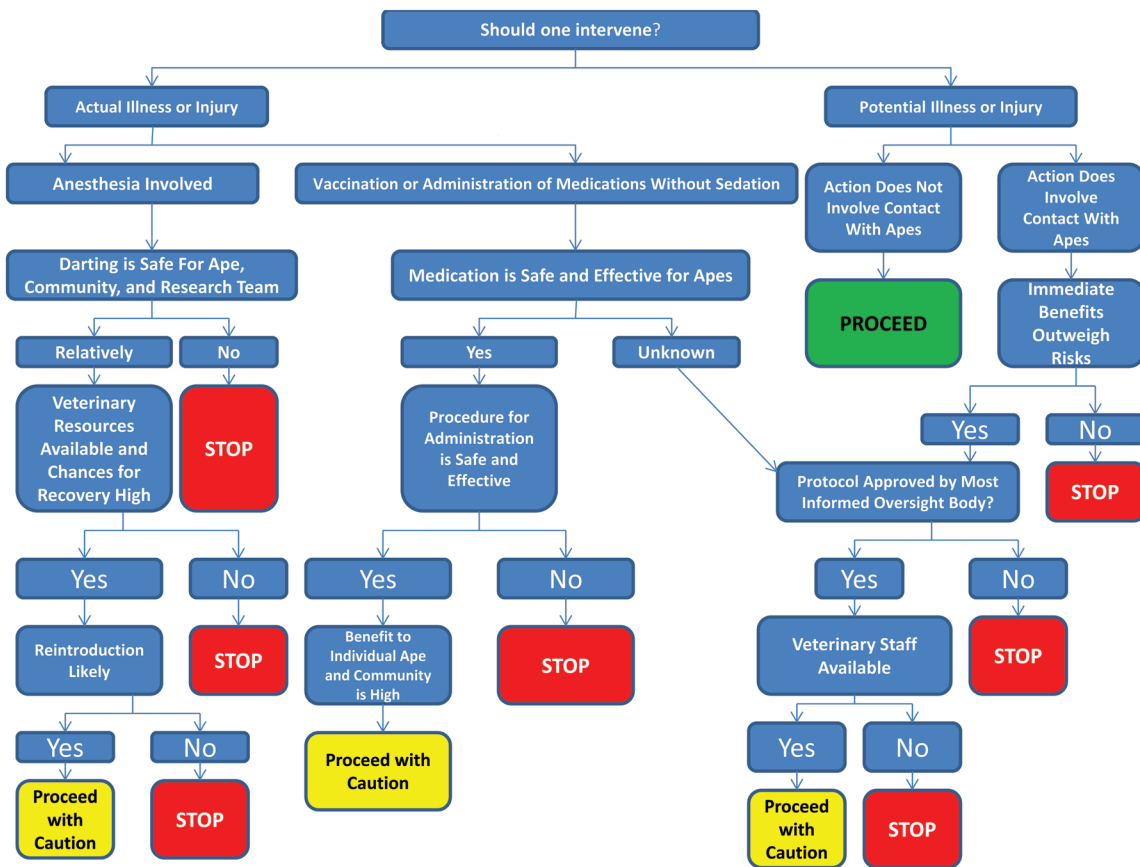


Figure 3: Intervention Decision Tree

field site and habituating a new community of apes; the second tree (Figure 3) addresses considerations for intervention in an already established, habituated community. The decision trees are meant to provoke dialogue, help with developing strategies, and build confidence in addressing the increasingly complex ethical issues field primatologists face.

Acknowledgments

LG would like to thank David Watts and Wesleyan University. AF would like to thank Steve Snodgrass and Chimp Haven. JP would like to thank Kelly Boyer, Janis Carter, Dondo Kante, Michel Sahdjako, the Republic of Senegal and the Eaux et Forêt for permission to work in Fongoli and Iowa State University. We also would like to thank the guest editors for this special issue and two anonymous referees.

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