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Successful Return of a Wild Infant Chimpanzee (Pan troglodytes verus) to its Natal Group after Capture by Poachers

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Abstract: We report the successful return of an infant chimpanzee, aged approximately nine months, to her mother following the infant's capture by poachers. The infant received only minor wounds in the incident, but her mother received severe wounds from hunters' dogs during the capture. One of us (DK) was able to confiscate the infant from the hunters without incident. She was kept in fairly isolated surroundings in order to minimize disease transmission from humans, until the fate of her mother was determined. Following five days in captivity, we successfully returned the infant to her mother. The infant and mother appear to be in fine health eighteen months later. This case of a return of a dependant infant to its mother is perhaps the only successful record for wild chimpanzees, in part because we are able to follow the chimpanzees in question. The outcome was dependant on a number of factors that led to the successful return and acceptance of the infant, such as quick identification and confiscation of the infant, relatively good health of mother and infant, and brief separation time of the mother-infant pair.

Key words: chimpanzee, Pan troglodytes verus, Senegal, reintroduction, poaching, savanna

Résumé: Nous annonçons le retour réussi d'un bébé chimpanzé, âgé d'environ neuf mois, à sa mère après la capture du nourrisson par des braconniers. Le nourrisson n'a reçu que des blessures mineures lors de l'incident, mais sa mère a reçu de graves blessures notamment à cause des chiens des chasseurs utilisés durant la capture. L'un de nous (DK) fut en mesure de confisquer le nourrisson des chasseurs sans incident. Le nourrisson a été maintenu dans un environnement isolé afin de minimiser la transmission de maladies humaine, jusqu'à ce que le destin de sa mère soit déterminé. Après cinq jours en captivité, nous avons réussi à rétablir le nourrisson à sa mère. Le nourrisson et la mère semblent être en bonne santé dix-huit mois plus tard. Ce cas de retour d'un nourrisson à la charge de sa mère est peut-être le seul épisode connus pour les chimpanzés sauvages, en partie parce que nous sommes en mesure de suivre les chimpanzés en question. Le résultat était tributaire d'un certain nombre de facteurs qui ont conduit à la réussite du retour et l'acceptation du nourrisson, telles que l'identification rapide et la confiscation du nourrisson, de la santé relativement bonne de la mère et du nourrisson, et de la brève séparation en temps du couple mère-nourrisson.

INTRODUCTION

Although the number of apes in sanctuaries across Africa and Asia continues to increase, successful reintroductions of these primates in the wild are relatively few. A trend exists, however, where reintroductions and rehabilitants released into island, and even mainland, forest habitats are increasingly successful, building upon experience and expertise associated with these attempts (Beck, in press; Borner, 1985; Farmer et al., 2006; Farmer & Courage, 2008; Moscovice et al., 2007). Given the large number of infants taken from the wild, we add our case to the growing literature on rehabilitation and reintroduction of great apes to the wild, an aspect of primate conservation that is increasingly important as the number of apes in captivity continues to rise (Farmer & Courage, 2008). Here we report the case of a confiscation of an infant chimpanzee in the possession of poachers and the successful return of this infant to her mother within the Fongoli chimpanzee study community in southeastern Senegal.

A number of factors may prohibit the successful return of captive apes to the wild, including lack of appropriate reintroduction sites, concerns over introducing disease to wild ape populations, lack of opportunities for learning...
certain behaviors, and the difficulties associated with ex-
captives’ adjustment to a life not characterized by human
 provisioning. The fact that all great apes are Endangered
or Critically Endangered (IUCN, 2010) makes it crucial
to protect the remaining individuals in wild populations,
especially considering the likelihood that most of those
taken from the wild will be unable to return to such a life.
Additionally, in most cases where apes are captured, the
scenario involves the killing of one of more individuals,
including the mother, in order to acquire young individuals
(Teleki, 1989). We describe our efforts to ensure the safety
of the infant taken from the Fongoli community, as well
as her social group, in what may be the only recorded,
monitored, and reported successful return of an infant
chimpanzee to its mother in the wild.

STUDY AREA AND BACKGROUND

Chimpanzees in Senegal inhabit the area known as
the Mandingue Plateau, which also comprises part of
southwestern Mali and northeastern Guinea (Carter et
al., 2003). In southeastern Senegal, chimpanzees coexist
with humans belonging to the Bédik, Malinké, Bassari,
Diahanke, and Puhlar groups. Rainfall in this area averages
less than 800 mm annually (Pruetz & Bertolani, 2009). The
Fongoli site (12º40’ N, 12º13’ W; Figure 1) is at the junction
of the Sudanian savanna and Sudano-Guinean woodland
vegetation belts and can be envisioned as a savanna-
woodland mosaic, with predominantly open woodland and
grassland, small patches of gallery forest, and seasonally
cultivated fields (Pruetz, 2006). The Fongoli chimpanzee
home range is estimated, minimally, to be 65 km² (Pruetz,
2006).

Figure 1. Fongoli study site, southeastern Senegal. Map courtesy
of M. Howells.
former field assistant admitted he had once killed a female chimpanzee years earlier in the range of Fongoli in an effort to sell the infant as a pet. The infant died, however, and the man claimed he was no longer interested in such activity. In another case, during the first year of the research project, field assistants encountered a man from a village more than 20 km away who came to a waterhole to kill a chimpanzee, possibly for medicinal reasons (see Clavette, 2005). During the dry season in Senegal, chimpanzees and other animals are restricted to a limited number of permanent water sources, so hunting certain animals in these areas is common. Researchers asked the local chief to prohibit persons from such activity, and they never encountered this particular type of incident again until January 2009. In several other cases, humans were encountered under circumstances in which chimpanzees could have been targeted, but the people either fled (Lindshield, pers. comm.; Pruetz, unpubl. data) or claimed they were hunting baboons (Papio hamadryas papio) (Pruetz, unpubl. data). Humans in the area commonly hunt warthog (Phacochoerus aethopicus), bushbuck (Tragelaphus scriptus), guinea fowl (Numida meleagris) and other animals, which is illegal, so interpretation of a hunter’s flight is difficult. They truly may be interested in opportunistically targeting chimpanzees, or are merely afraid of being turned in to local authorities for hunting in general.

After almost nine years of study, most of the Fongoli chimpanzees are relaxed in the presence of familiar humans (i.e., three Senegalese research assistants, Pruetz, and persons accompanying these researchers). They show varying levels of fear, however, toward unfamiliar humans. Chimpanzees flee the presence of transitory shepherders, who began frequenting the Fongoli area seasonally in 2006. They avoid, but are more relaxed, around humans that walk along trails, harvest wild fruit, or wash clothes and collect water in area streams.

In late 2008 and early 2009, we observed the Fongoli chimpanzees to be especially nervous in the southern part of their range, which they utilize in the early dry season months (i.e., December-January) and where the infant described in this case was ultimately captured. This exceeded levels of timidity that had been observed in 2007-2009 when chimpanzees used this area seasonally (Bogart, pers. comm.; Lindshield, pers. comm.; Pruetz, unpubl. data). In addition, in early January 2009, Pruetz observed a relatively small party of seven chimpanzees rapidly leave an area in the southern part of their range upon sighting a human approaching a fruiting fig tree they were in; a spent shotgun shell casing had been discovered earlier at this site. The chimpanzee party quickly traveled approximately 1.5 kilometers north into the core area of their range, in which they are more frequently found (Pruetz, unpubl. data), and did not return to the southern part of their range that day.

CASE REPORT OF THE CAPTURE, CONFISCATION AND RETURN OF THE INFANT CHIMPANZEE

January 24 – January 27

On 24 January, Pruetz, who was in the U.S., received a phone call from Kante from Kedougou, Senegal. He reported that a young man had approached him, asking if he knew anyone who would be willing to buy an infant chimpanzee. This man was a high school student in Kedougou and one of the hunters. Kante reported that he began to explain the goals of the research project but noticed that the young man became nervous, so instead asked him to see the infant. The young man was aware that he could get in trouble with officials (Eaux et Foret in Senegal) for capturing a baby chimpanzee. Based on the description of where the hunters had gotten the chimpanzee, we concluded that the infant was in all likelihood from the Fongoli chimpanzee study group. Pruetz then suggested that an effort should be made to try to return the infant to its mother, if she could be located and/or if the infant was old enough to possibly survive on its own (i.e., at least two years of age). It was agreed that Kante would take the infant from the men, which he accomplished by leading the hunter to believe that he might find someone interested in buying the infant.

In trying to understand the circumstances of the infant’s capture, Kante kept in communication with one of the hunters in the days following their capture of the infant (later confirmed as Aimee [AM] following the observation of her injured mother Tia [TI] without an infant). The hunters were never compensated for the infant chimpanzee. The hunter acknowledged the severity of what they had done, although the degree to which these young men regretted their actions is unknown, and it is unlikely that the details of the incident were revealed to us completely. Kante ultimately was able to piece together the varied information he received about the capture, and he visited the capture site with one hunter. Kante eventually learned that the hunters’ dogs had attacked TI beneath some Saba senegalensis vines. We believe that it was at this time that AM fell off of her mother or was grabbed by the dogs, as she had shallow puncture wounds on her back when Kante confiscated her from the hunters. These could have also been sustained, however, from sharp vegetation or rocks. We believe that TI would have escaped from the dogs initially by climbing a tree but was probably frightened as these hunters pursued the chimpanzees. We have accompanied the chimpanzees when they encounter dogs within their home range; they are able to chase the dogs away, although they initially respond by climbing trees to escape from them (Pruetz, unpublished data). All indications, therefore, were that TI was treed by dogs but then leapt from the tree to escape the humans. At this point, their dogs attacked her and AM was torn off or fell off during this attack. The hunter noted that TI turned and
attacked the dogs, chasing one of them from the scene, but was again pursued by one dog as she finally fled the area.

After learning of the infant's capture, Pruetz contacted J. Carter of the Baboon Islands Chimpanzee Sanctuary in the Gambia via email to discuss the situation, as Carter had reintroduced an infant chimpanzee into a group in the area between Kedougou and Salemata in southeastern Senegal (Carter, unpubl. data). Since the community to which the infant was introduced was not habituated, the ultimate fate of the infant is unknown. Carter did report the successful acceptance of the infant by the chimpanzees, however, encouraging us to consider returning the infant to our chimpanzee community, if possible. Discussion with Carter included information regarding factors that we deemed critical to consider in making the decision, including the age of the infant, the fate of the mother, and the health of both the infant and mother. When asked about alternatives, Carter confirmed that sanctuary in The Gambia was probably not an option, given its full capacity, but that the zoo in Dakar would be a likely home for an infant which could not be reintroduced to its group. Carter confirmed the likelihood that the infant would be adopted by the wild chimpanzees and had a good chance of surviving if the infant was at least two years of age. She noted the importance of keeping the infant from contacting people, as well as the complications known to arise when infant chimpanzees grew attached to their human caretakers. These were the same measures outlined in general in the IUCN's guide to ape reintroduction (Beck et al., 2007). The practice most relevant to our particular situation concerned safeguarding the health of the wild population, arguably the most important consideration to wild ape conservation (Beck et al. 2007).

We initially assumed that the hunters had killed the mother ape, the most common occurrence in the case of the capture of an ape infant (Beck et al., in press); if this were the case, it would raise significant concerns about an attempt to return a nursing infant to her community. We eventually were able to determine that the infant chimpanzee was approximately nine months old, having been born in May 2008, and was the daughter of a primiparous female (Pruetz, unpubl. data). An infant of this age would be nursing hourly (Goodall, 1986), so concern also existed about her nutritional state. The men who had the chimpanzee infant had tried to give her some banana, but she was afraid to take it from them; we were able to get her to take some solid food.

On 25 January, Pruetz received photos of the infant that she had requested from Kante, and confirmation that Kante had been able to take her from the hunters. The infant chimpanzee had abrasions over her left eye and matter in the same eye that made it impossible for her to open it. She was kept in a hut at Kante's house in a large cage, isolated from people, and fed milk prepared from powder whenever she cried. Pruetz flew from the United States to Senegal on 26 January and arrived at Kante's house in Senegal on 27 January, around midnight. The infant's eye was much better compared to its appearance in the photo. She appeared to be in good health, and we decided to take her out to Fongoli, try to find her group, and see if her mother was still living.

Once Kante had taken charge of the infant, he kept her removed from other people so as to minimize the likelihood that she would become ill. Kante fed AM while she was in the cage, except for the day she was released, when Pruetz held her while she drank milk so that Kante could administer drops to her eye. Pruetz wore a surgical mask and sanitized her hands to reduce the likelihood that germs might be passed to the infant at this time, as well as when contacting AM's food, and when she carried the infant out to the chimpanzee group. Pruetz consulted with a veterinarian at Iowa State University who recommended treatment for an infection in case the wounds incurred by AM had not begun to heal. The infant's wounds fortunately were much better by the time she was released back into her group, so we only administered eye drops (Visine™) to her, to provide some relief to any discomfort she was having. A small amount of discharge was evident the day she was returned. In addition to milk, the infant was fed small pieces of orange around midnight on January 27, and on January 28 before she was taken to her mother. The infant's stool was firm, her injuries sustained from the capture were healing (i.e., scabbed over), and her eye was almost completely clear of matter on this day.

January 28

We left for the field site with the infant in the cage at ~0500 hours and began a search at ~0600 hours of the area where chimpanzees had been seen a few days previously. Pruetz found a group of chimpanzees at ~0900 hours on January 28 and noted that a young female, TI, was missing her infant, AM. TI was in a party containing eight adult males and several adolescent males. She exhibited gashes on her genital swelling where the hunters' dogs apparently had bitten her, as had been relayed previously from the hunters to Kante. Kante, in radio contact, joined Pruetz and remained with the group of chimpanzees while Pruetz returned to Fongoli village to retrieve the infant. With the assistance of field assistant M. Sahdjakho, Pruetz carried AM to the chimpanzee group. The infant had no difficulty clinging to clothes. As Pruetz and Sahdjakho approached the chimpanzees, they put AM in a burlap sack, hoping to place the sack on the ground some distance from the chimpanzee party and leave. This strategy was based on the assumption that adult males, especially, would likely behave aggressively towards humans with the infant (J. Carter, pers. comm.). AM did not vocalize when she heard the chimpanzees, so we decided to move closer to the chimpanzee party while in a tight-knit group and leave the infant within sight of them. We moved to within about 10
meters of the party, which was feeding in a Ficus tree in woodland habitat. Kante and Sahdjako put the sack down and opened it so the infant could see the chimpanzees. We observed some chimpanzees notice this, and an adolescent male (MI) who was at the edge of the feeding tree crown climbed down and approached the infant. We have no reason to suspect that MI is matrilineally related to TI or AM. MI approached within several meters of AM, pausing and appearing to smell and look intently at her before approaching to within one meter of AM. MI stood bipedally, presenting to AM for carrying, as is typical of chimpanzees here, and she climbed onto his ventrume, screaming in excitement. MI carried AM to the feeding tree, where TI was just climbing down. Pruetz was able to observe TI take the infant from MI, who had approached TI. Other chimpanzees in the party quickly surrounded TI and AM and appeared curious about the infant. Observers could not see TI or AM for several minutes, but AM could be heard panting in greeting to adult males (Nishida et al., 1999). Surprisingly, none of the chimpanzees appeared alarmed at the fact that researchers carried AM to them, as there was no piloerection, warning vocalizations (Nishida et al., 1999), or other behavior to indicate stress.

Pruetz remained with the chimpanzee group for the rest of the day, from about 1100 to 1900 hours. None of the chimpanzees appeared to act differently towards Pruetz, although at least several of them had observed the researchers placing AM on the ground. AM was observed to nurse and even to play with her mother. When the chimpanzees traveled in the late afternoon, the same adolescent male (MI) who had retrieved the infant from the sack carried AM for TI (Pruetz, unpubl. data). TI was not able to travel quickly and frequently stopped moving, often checking her wounds and placing AM on the ground.

**January 29 - January 30**

The following day, January 29, Sahdjako followed the group of chimpanzees while Kante and Pruetz returned to Kedougou to meet with an official of the local Wildlife and Forestry Department (Eaux et Forets, Wula Nafaa) to discuss this incident. Sahdjako saw MI again carry AM for TI during travel. Pruetz followed the chimpanzees from night nest to night nest on January 30. TI still moved slowly, stopping frequently during travel, but her wounds did not bleed. AM appeared to be doing fine, and her eye looked almost completely healed.

**Post-reunion months**

Kante and other field assistants working for the Fongoli Savanna Chimpanzee Project followed chimpanzee parties containing the pair for several months following AM's return, to keep track of their progress. Approximately one month after the incident, TI appeared to be fully recovered from her wounds and had resumed cycling. Following the first several months after AM's return to TI, field assistants adjusted their data collection schedules to observe adult male focal subjects that traveled in the same party as TI and AM. TI and AM, as well as the parties in which they were found, were never seen to move back to the extreme southern part of their range. In fact, TI and the parties in which she was seen remained near their core range area, not far from Fongoli village, rather than concentrating on an area with a permanent water source several kilometers east, as is usually the case during the late dry season (Boyer, pers. comm.; Pruetz, unpubl. data). TI and AM were seen frequently for the next three months (May-July) following their reunion, although observers reverted to the normal protocol that entailed following specific male subjects according to a monthly schedule. During the six months following their reunion, neither AM nor TI appeared to have become ill as a result of infection or other illness, and researchers shifted back to the normal protocol. We expect that they have fully recovered physically from this incident, 18 months following AM's capture.

**DISCUSSION**

This case provides the only complete record of the successful return of a captured chimpanzee to its natal group of which we are aware. Most reintroductions occur after significant time has passed since capture (Treves & Naughton-Treves, 1997), and rehabilitation events often include ex-captives with unknown geographical origin (Hannah & McGrew, 1991). For example, the only release of chimpanzees onto an island with a subsequent self-sustaining population persisting over the long term so far is the Rubondo Island, Uganda, case (Borner 1985; Muscovice et al., 2007). Some cases of success are associated with rehabilitant chimpanzee projects where these apes do not have to be subsequently provisioned (e.g., Farmer, 2000; Gossens et al., 2005), but the similar case of a young female reintroduced to a wild chimpanzee community in Uganda ended with her capture and translocation to a zoo after she abandoned the wild chimpanzee community and reappeared at a human settlement (Treves & Naughton-Treves, 1997). Our case was successful for a variety of reasons, as described above.

A number of variables were considered in our decision-making process. Although we used the IUCN guidelines to ape reintroductions, there was relatively little information pertinent to our situation. This particular instance was unique in that (1) we recognized the infant as a member of our study community, (2) the infant was confiscated within two days of being taken by hunters, (3) the infant was returned to its mother within five days of being taken from her, (4) the infant's reintroduction back to her group was not deemed an endangerment to the wild population because she had relatively little contact with humans, and (5) the fact that the mother and the infant were in reasonably good health indicated that the infant
had a good chance of surviving.

Although human mothers may not stop lactating for weeks following cessation of nursing, research on the nutritional content of milk in other mammals indicates that significant changes can occur within a few days after infants are no longer nursing (Fleet & Peaker, 1978). We acted as quickly as possible, therefore, to locate the infant’s mother and to return her. Although young chimpanzees, like other primates, seek constant contact, we decided to keep the infant relatively isolated, save for Kante feeding her. The infant was kept in a cage to minimize her attachment to humans and the likelihood that she would contract an illness from humans. We therefore made the early decision to restrict human access as a means of preventing disease transmission, although it is certain that AM would have been comforted by more human contact, given her reluctance to break contact once it had been established.

We plan to continue monitoring TI and AM in order to record their progress over the long-term, with special attention to their health, specifically. Neither appears more timid around human observers, although their behavior around unfamiliar humans has yet to be witnessed. While this was an unfortunate incident, upon discussion with local authorities, we are hopeful that it can serve as an example in efforts to counter future similar episodes. The Fongoli Savanna Chimpanzee Project has redoubled efforts to educate people in southeastern Senegal through a workshop series that uses the instance described here as an example, and continues to work with local people in addressing conflicts between humans and chimpanzees.

ACKNOWLEDGEMENTS

Funding for the Fongoli Savanna Chimpanzee Project provided by the National Geographic Society, Wenner-Gren Foundation for Anthropological Research, the Leakey Foundation, the National Science Foundation, Primate Conservation Inc., the American Society of Primatologists, U.S. Fish and Wildlife Society, and Iowa State University, College of Liberal Arts and Sciences, Institute for Science and Society, Center for the Study of Violence, and the Department of Anthropology. We are indebted to Michel Sahdjakho, Janis Carter, Jo Ann Morrison, D.V.M., Frans Lanting, Chris Eckstrom, John Rubin, the National Geographic Society (especially Cheryl Zook and Eleanor Grant), and Dean Michael Whiteford and Dr. Paul Lasley of Iowa State University, College of Liberal Arts and Sciences, for contributing significantly to our ability to successfully return infant Aimee to her mother. At Iowa State University, Stephanie Bogart, Katie Klag, Stacy Lindshield, Janni Pedersen, Melissa Senf, Taylor Shire, Chrissy Tourkakis and Elizabeth White provided assistance, and Kelly Boyer and Michel Sahdjakho provided additional assistance in the field in Senegal following the return of Aimee. We thank Benjamin Beck, Stephanie Bogart, Kay Farmer, Stacy Lindshield, and Kristina Walkup for helpful comments on earlier versions of this manuscript.

LITERATURE CITED


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*Mother Tia and Infant Aimee - Fongoli Research Site, Senegal*

*Photo courtesy of Kelly Boyer*