Brief Report

Folia Primatol 2003;74:109–111
DOI: 10.1159/000070008

Received: October 31, 2002
Accepted after revision: January 11, 2003

White-Faced Capuchins Cooperate to Rescue a Groupmate from a *Boa constrictor*

Susan Perry Joseph H. Manson Gayle Dower
Eva Wikberg

Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany

Key Words
Predation · Boa · Capuchin · *Cebus capucinus* · Cooperation · Anti-predator behaviour

Although avoidance of predators has long been thought to play a major role in the evolution of primate sociality [van Schaik, 1983], there are relatively few data on predation attempts on primates and the responses of primates to attacks by predators [Stanford, 2002]. Wild white-faced capuchins *(Cebus capucinus)* regularly mob snakes [Chapman, 1986]. There is one published observation of white-faced capuchins killing a *Bothrops asper* with a club [Boinski, 1988], and one published account of successful predation by a *Boa constrictor* on a juvenile white-faced capuchin [Chapman, 1986]. In the latter instance, the victim's groupmates mobbed the snake and one adult male repeatedly dropped a stick on it, but none of the monkeys tried to use contact aggression to free the victim.

On July 13, 2002, while conducting a study on infant development in *C. capucinus* at Lomas Barbudal Biological Reserve, Costa Rica, we observed an attack by a 2-m-long *Boa constrictor* on a 3-year-old capuchin (MH). By the time the observers arrived on the scene, the boa was coiled around MH. Her mother, MA, arrived almost immediately and was soon joined by another juvenile. MA repeatedly bit the snake and pulled at it, uncoiling its tail and body from the victim. Meanwhile, alpha-male PP arrived and began hitting and perhaps biting the snake from the opposite side, so that the snake could not defend itself from MA and PP simultaneously. The juvenile who was first to arrive grabbed MH's arms and pulled

KARGER
Fax +41 61 306 12 34
E-Mail karger@karger.ch
www.karger.com

0015–5713/03/0742–0109$19.50/0

Accessible online at:
www.karger.com/fpr

Susan Perry
Proyecto de Monos, Apdo 5
Bagaces, Guanacaste (Costa Rica)
Tel./Fax +506 671 2250
E-Mail perry@eva.mpg.de

her from the coils less than 1 min after she was first observed to have been captured. MH clasped the juvenile as she was being pulled free. Other group members began to arrive and to exhibit the alarm calling and mobbing behaviour that is typical when a boa is spotted, though no other monkeys made physical contact with the snake. As soon as MH was freed from the snake's coils, the monkeys at the scene (MH, MA, PP and those that were alarm calling and shaking branches above the snake) leapt clear of the snake and scattered. The snake thrashed about and attempted to strike at the monkeys, particularly at MA. The snake remained poised facing the monkeys for several minutes before attempting to leave the area. Observers noticed several bite wounds on its back, presumably inflicted by MA, though PP may have inflicted some wounds as well. It was impossible to identify every participant in the mobbing, but it seemed that almost all the 38 group members participated in alarm calling and branch shaking at the snake. MH appeared uninjured; she ran to the top of a tree immediately after escaping the coils, but soon approached to within a few metres of the snake to join in the mobbing and alarm calling. After the snake stopped thrashing, several group members closed in on the snake again to mob it at close range. The monkeys gradually left the area but some continued to mob the snake for 22 min after the attack. MA and several others resumed foraging, but made periodic trips back to the general area to relocate the snake and alarm call as it moved away from the site of the attack.

There are striking parallels between this incident and the observation of a successful rescue of a subadult male moustached tamarin *Saguinus mystax* from a *Boa constrictor* [Tello et al., 2002]. In both cases, several group members physically attacked a boa that had captured a group member and were successful in saving the victim. It is worth noting that both callitrichids and capuchins have well-developed cooperative relationships. The need to care cooperatively for large-bodied twin infants [Goldizen, 1990] and to defend against predation [Caine, 1993] are thought to have selected for extensive cooperation in callitrichids. Capuchins frequently cooperate in the context of intraspecific coalitionary aggression [Perry, 2003]. In contrast, in two recently reported cases of predation by constricting snakes on prosimians, the victims' conspecifics witnessing the attacks did not launch cooperative physical attacks to rescue them. Only one individual made physical contact with a python that had captured a spectral tarsier *Tarsius spectrum* [Gursky, 2002], though several other tarsiers mobbed it from a safe distance. Similarly, a boa that had captured a sifaka *Propithecus verreauxi* was mobbed but not physically attacked by the victim's groupmates [Burney, 2002]. Tarsiers and sifakas, unlike capuchins and callitrichids, are not known to exhibit extensive cooperation in other contexts, and perhaps this lack of practice at coordinated action hampers their ability to launch coordinated attacks against predators.

References

Boinski S (1988). Use of a club by a wild white-faced capuchin *(Cebus capucinus)* to attack a venomous snake *(Bothrops asper)*. *American Journal of Primatology* 14:177–179.

Burney DA (2002). Sifaka predation by a large boa. *Folia Primatologica* 73:144–145.

Caine NG (1993). Flexibility and co-operation as unifying themes in *Saguinus* social organization and behviour: The role of predation pressures. In *Marmosets and Tamarins: Systematics, Behaviour, and Ecology* (Rylands AB, ed), pp 200–219. Oxford, Oxford University Press.

Chapman CA (1986). *Boa constrictor* predation and group response in white-faced *Cebus* monkeys. *Biotropica* 18: 171–172.
Goldizen A (1990). A comparative perspective on the evolution of tamarin and marmoset social systems. *International Journal of Primatology* 11: 63–83.
Gursky S (2002). Predation on a wild spectral tarsier *(Tarsius spectrum)* by a snake. *Folia Primatologica* 73: 60–62.
Perry S (2003). Coalitionary aggression in white-faced capuchins, *Cebus capucinus.* In *Animal Social Complexity: Intelligence, Culture and Individualized Societies* (de Waal FBM, Tyack P, eds.), Cambridge, Harvard University Press.
Stanford CB (2002). Avoiding predators: Expectations and evidence in primate antipredator behaviour. *International Journal of Primatology* 23:741–757.
Tello NS, Huck M, Heymann EW (2002). *Boa constrictor* attack and successful group defence in moustached tamarins, *Saguinus mystax. Folia Primatologica* 73: 146–148.
van Schaik CP (1983). Why are diurnal primates living in groups? *Behaviour* 87:120–144.