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## <REVIEW>

### Field Research at Ngogo, Kibale National Park, Uganda

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David Watts initiated fieldwork on the community of chimpanzees at Ngogo, Kibale National Park, Uganda, during two months in the summer of 1993. This followed pioneering observations carried out by Michael Ghiglieri (1) in 1976 – 1977 and subsequent study by Bettina Grieser-Johns (2) in 1992 – 1993. John Mitani returned with Watts to Ngogo in June 1995. Since that time we have been assisted by our students and Jeremiah Lwanga, Martin Muller, and a team of 4 – 5 Ugandan research assistants in our effort to maintain continuous observations of the Ngogo chimpanzees.

The unusual demographic size and structure of the Ngogo chimpanzee community furnish part of the impetus for our studies. With over 70 adult males and females and approximately 150 individuals, this community is the largest that has been reported thus far in the wild. As the result of the extremely large number of males, the Ngogo chimpanzees hunt often and with an unusual degree of success (3). Male chimpanzees at Ngogo also frequently patrol the boundary of their territory (4). This behavior has led to several documented cases of lethal intergroup aggression (5-6 and Watts & Mbabazi unpublished data). Our observations have also revealed that male chimpanzees at Ngogo sometimes adopt novel coalitionary mating tactics (7) and have shown that males who belong to the same age cohort and who are close in dominance rank affiliate and cooperate

non-randomly (8). Other work has contributed to our understanding of why chimpanzees hunt and share meat (9) and has furnished insights into the intriguing evolutionary processes of reciprocity and interchange (10).

Along with our students, we continue to build on our prior work at Ngogo by conducting investigations on several topics. In previous research, we have shown that kinship may not play an important role in structuring aspects of male social relationships (8, 11). These studies have thus far been limited to information on mitochondrial DNA. In work conducted in collaboration with Linda Vigilant and University of Michigan graduate student Kevin Langergraber, we are using samples collected non-invasively in the field to obtain better estimates of genetic relatedness between males. Data derived from nuclear genetic markers will permit us to examine in greater detail the effect of kinship on various aspects of male chimpanzee social behavior. After a brief hiatus in research (12), we are returning to the study of chimpanzee vocal behavior with an investigation focused on uncovering the factors that affect acoustic variation between and within individuals. This research will be conducted by Michigan graduate student, Anne Fowler. In a study completed with Michigan graduate student, Sylvia Amsler, we have demonstrated that male chimpanzees at Ngogo form social bonds above the level of dyadic pairs (13). Two subgroups of males can be defined at Ngogo based on their tendency to associate in temporary parties. Members of both subgroups, however, range together over the entire territory, and nothing suggests that the community will fission. Amsler will carry out additional research on how the Ngogo chimpanzees use their territory.

To date, most of our research has focused on adult male chimpanzee behavior. Yale University graduate students, Hogan Sherrow and Monica Wakefield, are currently in the field conducting observations of adolescent male and adult female chimpanzees, respectively. Their work promises to fill several gaps in knowledge and enrich our understanding of the Ngogo community of chimpanzees. The Ngogo chimpanzees are very well-known for their hunting behavior (14).

Long-term data suggest that the red colobus population at Ngogo has suffered a decline in numbers since 1976 (15). Whether this decline can be attributed to chimpanzee predation is unknown. Yale University graduate student Simone Teelen has completed fieldwork to address this and related questions by studying the effects of chimpanzee predation on the behavior of red colobus monkeys at Ngogo.

As we enter our ninth continuous year of field research, much remains to be done. In future work, we plan to address some open questions regarding meat sharing and male mating behavior and social strategies. Along with our Ugandan postdoctoral associate Jeremiah Lwanga and Yale graduate student Kevin Potts, we will continue work on feeding ecology and behavior. Potts plans to examine the foraging strategies employed by the Ngogo chimpanzees. Lwanga's ongoing studies of forest ecology will be combined with data on chimpanzee feeding behavior and habitat use to address why the Ngogo community is so large. During the past year, we have witnessed four more cases of lethal aggression at Ngogo. In contrast to prior observations, one of these took place within the Ngogo community. We will describe details of these attacks in future reports.

## References

- (1) Ghiglieri M 1984. *The chimpanzees of the Kibale forest*. Columbia University Press, New York.
- (2) Grieser-John B 1996. Responses of chimpanzees to habituation and tourism in the Kibale Forest, Uganda. *Biol Conserv* 78: 257-262.
- (3) Mitani J, Watts D 1999. Demographic influences on the hunting behavior of chimpanzees. *Am J Phys Anthropol* 109: 439-454.
- (4) Watts D, Mitani J 2001. Boundary patrols and intergroup encounters in wild chimpanzees. *Behaviour* 138: 299-327.
- (5) Watts D, Mitani J 2000. Infanticide and cannibalism by male chimpanzees at Ngogo, Kibale National Park, Uganda. *Primates* 41: 357-365.
- (6) Watts D, Mitani J, Sherrow H 2002. New cases of inter-community infanticide by male chimpanzees at Ngogo, Kibale National Park, Uganda. *Primates* 43: 263-270.
- (7) Watts D 1998. Coalitionary mate-guarding by male chimpanzees at Ngogo, Kibale National Park, Uganda. *Behav Ecol Sociobiol* 44: 43-55.
- (8) Mitani J, Watts D, Pepper J, Merriwether DA 2002. Demographic and social constraints on male chimpanzee behaviour. *Anim Behav* 63: 727-737.
- (9) Mitani J, Watts D 2001. Why do chimpanzees hunt and share meat? *Anim Behav* 61: 915-924.
- (10) Watts D 2002. Reciprocity and interchange in the social relationships of wild male chimpanzees. *Behaviour* 139: 343-370.
- (11) Mitani J, Merriwether DA, Zhang C 2000a. Male affiliation, cooperation, and kinship in wild chimpanzees. *Anim Behav* 59:885-893.
- (12) Mitani J, Hunley KL, Murdoch ME 1999. Geographic variation in the calls of wild chimpanzees: A re-assessment. *Am J Primatol* 47: 133-152.
- (13) Mitani J, Amsler S (in press). Social and spatial aspects of male subgrouping in a community of wild chimpanzees. *Behaviour*
- (14) Watts D, Mitani J 2002. Hunting behavior of chimpanzees at Ngogo, Kibale National Park, Uganda. *Int J Primatol* 23: 1-28.
- (15) Mitani J, Struhsaker T, Lwanga J 2000b. Primate community dynamics in old growth forest over 23.5 years at Ngogo, Kibale National Park, Uganda: implications for conservation and census methods. *Int J Primatol* 21:269-286.