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Chimpanzees of the Lakeshore

Chimpanzees are humanity's closest living relations, and are of enduring interest to a range of sciences, from anthropology to zoology. In the West, many know of the pioneering work of Jane Goodall, whose studies of these apes at Gombe in Tanzania are justly famous. Less well-known, but equally important, are the studies carried out by Toshisada Nishida on the eastern shore of Lake Tanganyika. Comparison between the two sites yields both notable similarities and startling contrasts. Nishida has written a comprehensive synthesis of his work on the behaviour and ecology of the chimpanzees of the Mahale Mountains. With topics ranging from individual development to population-specific behavioural patterns, it reveals the complexity of social life, from male struggles for dominant status to female travails in raising offspring. Richly illustrated, the author blends anecdotes with powerful data to explore the fascinating world of the chimpanzees of the lakeshore.

TOSHISADA NISHIDA (1941–2011) was Executive Director of the Japan Monkey Centre and Editor-in-Chief of the journal *Primates*. He conducted pioneering field studies into the behaviour and ecology of wild chimpanzees for more than 45 years.

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Natural History and Culture at Mahale

TOSHISADA NISHIDA
Japan Monkey Centre

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Foreword

The book you hold in your hands, with its fine photographs and exquisite descriptions of chimpanzee behaviour by one of the world's greatest experts, would have been unthinkable half a century ago. We have come such a long way in our knowledge of chimpanzees, and the discoveries have reached us in such a gradual and cumulative fashion, that we hardly realise how little we used to know about our nearest relatives.

At the time, chimpanzees did not yet occupy the special place in our thinking about human evolution that they do today. Strangely enough, science looked at baboons as the best model of our ancestors, as baboons, too, had descended from the trees to become savanna-dwellers. These rambunctious monkeys, however, are quite far removed from us. For one thing, they have tails. Apes and humans belong to a small superfamily within the primate order, known as the hominoids, which are marked by flat chests, relatively long arms, large body size, superior intelligence, and the absence of a tail. Apart from humans and chimpanzees, living members of the superfamily include only gorillas, bonobos, orangutans, and gibbons.

Interest in apes started relatively late. Early primatologists had seen them travel through the trees, eating fruits at their leisure, but rarely did they notice anything of interest in their behaviour. This was partly due to low visibility in the forest and the apes' wariness of people. They disappeared as soon as they heard or saw observers approach.

The study of chimpanzee behaviour began in earnest only in the early 1960s, near the shore of Lake Tanganyika, in Tanzania. Two camps were set up, one by Western scientists at Gombe Stream and one 170 km to the south, at the foot of the Mahale Mountains, by Japanese scientists. The author of this book, Professor Toshisada Nishida of Kyoto University,

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started the latter camp in 1965. He was still a graduate student at the time but has worked in Mahale ever since, up to and including his retirement.

One of Dr Nishida's very first discoveries was truly groundbreaking. While science still described chimpanzees as sort of peaceful vegetarians that roamed the forest without any need for social bonds – not unlike Rousseau's noble savages, who did not need each other to survive – Dr Nishida noticed that chimpanzees live a communal life with clear territorial boundaries and perhaps even hostility between neighbouring unit-groups. This was not an easy discovery, because chimpanzees are often encountered alone or in small groups in the forest, so one can determine community relations only if one knows all individuals and keeps careful track of their travels. Dr Nishida's discovery not only upset Western notions of chimpanzees as individualists, but also the ideas of Dr Nishida's own teachers, who expected chimpanzees to live, like humans, in nuclear family-like arrangements. Debate about what to expect must have been rather heated, because when Dr Nishida's teacher, Professor Junichiro Itani, arrived in Kigoma, the student couldn't wait for their actual reunion, and shouted from aboard the steamship *Liemba*: 'There is no familoid in the chimpanzee society.' Professor Itani shouted back: 'That can't be true!'

We have learned much about chimpanzees since then, such as that they hunt and eat meat; that they raid their neighbour's territory and occasionally kill each other; that they use a complex set of tools, which differs from group to group; that they medicate themselves with plants; that males engage in power politics while competing over status and females; and so on. The list of discoveries is impressive, and the Mahale field site has been absolutely central in furnishing the evidence. From the start, the approach followed at Mahale has been that of the grand teacher of both Dr Nishida and Professor Itani, Professor Kinji Imanishi, who urged his students to identify individuals and to follow them over time. Not just for weeks or months, as previous studies had done, but for years and years, so that one began to understand the kinship relations within the group.

With a species that breeds as slowly and is as long-lived as the chimpanzee, one needs to follow individuals for a long time to know whether or not two adult males are brothers, or how many offspring a female raises during her lifetime. Before scientists learned to analyse DNA evidence, the only way to know much about genetic relatedness was a long-term project like the one Dr Nishida set up.

The first challenge was obviously to get to see the chimpanzees on a regular basis, identify them by their facial and bodily characteristics

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and get them so used to human presence that they would display their natural behaviour. At the time, habituation was typically done by means of food provisioning. Dr Nishida first tried it with sugarcane, until he found out that bananas worked better. He developed a 'mobile provisioning' technique in which scientists would announce their presence to distant chimpanzees by imitating the species-typical hooting calls, after which the chimps would approach and obtain some food. This way, their normal roaming patterns remained intact, as they never attached themselves to a fixed feeding site. After the chimps had fed, the investigators would simply follow them for the rest of the day.

Some scientists have criticised food provisioning as a technique that may make chimpanzees more aggressive. This assumption was used as an argument against reports of lethal intergroup warfare in the chimpanzees of Gombe and Mahale, reports which stimulated much debate about the aggressive nature of our own species. If chimpanzees kill each other the way we do, so the argument went, we probably inherited our territorial tendencies from the ancestor we share with chimpanzees. There are many opponents of this view, who prefer to blame the violence among wild chimpanzees on food provisioning. However, while provisioning in Mahale ended in 1987, the aggressive behaviour of the chimpanzees hardly changed. Moreover, there are now reports of the same violent behaviour from field sites where researchers *never* provisioned any chimpanzees with food. For this reason, there is little doubt among experts that chimpanzees are just naturally violent.

Dr Nishida was a most dedicated scientist who, in his early career, spent years, and later many months per year, under relatively primitive circumstances, without running water or electricity, at Kasoje at the northern foot of the Mahale Mountains. As a result, he knew all chimpanzees in several groups. By 'knowing' I mean that he observed them as infants, saw them grow up as juveniles, followed them through their prime and into old age.

In one of the first studies of a power take over in wild chimpanzees, Dr Nishida observed 'allegiance-fickleness' in an old male, who was past the age of becoming alpha but who carved out a key position by regularly switching sides in alliances with two adult males competing for dominance, so that he achieved maximum social influence. Many other observations of power politics have followed, including an alpha male who used meat to 'bribe' others to support him. The overall conclusion has been that chimpanzees apply great strategic intelligence to their social relations.

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The ecology of the species holds special fascination. Over the years, Dr Nishida tasted about 100 species of plants or fruits that chimpanzees eat at Mahale in order to get an idea of how the apes perceived these foods. A major advance in the study of cultural habits came when Dr Nishida discovered that chimpanzees consume *Aspilia* leaves, which they do very slowly, mostly in the morning, swallowing the leaves without chewing them. This aberrant ingestion seemed unlikely to be done for nutritional reasons. Together with Professor Richard Wrangham, the first Western primatologist to set foot in Mahale, Dr Nishida published his observations of potentially medicinal use of plants by wild chimpanzees, thus founding the new field of zoopharmacognosy.

Over the years the Mahale team has welcomed many other collaborators, and as a result has an extremely rich and diverse publication record. Dr Nishida was one of the most respected scientists our field has ever produced, and in 2008 was rightly presented, along with Dr Jane Goodall, with the prestigious Leakey Prize, which recognises accomplishments in human evolutionary science.

In March 2004 I attended Dr Nishida's retirement lecture at Kyoto University. The lecture was riveting, especially given all the historical details of how our knowledge has grown over the years and the role of Japanese scientists. For me, extra pleasure came from having visited Mahale just the year before. I had found it an enchanting place where the chimpanzees are so well-habituated that it is not hard to see how it could have produced so many historic discoveries. *Chimpanzees of the Lakeshore* reviews all of these discoveries, offering myriad behavioural details, which readers can be sure the author saw himself, with his own eyes, describing them for the first time for a large public, in his own words.

Frans de Waal

Dr Frans B. M. de Waal is C. H. Candler Professor at the Psychology Department and Director of the Living Links Center, both at Emory University in Atlanta, USA. He is internationally known for numerous popular books on primate (and human) behaviour, including *Chimpanzee Politics* (1982) and *Our Inner Ape* (2005).

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Preface

Forty-five years ago I first set foot in Kasoje, a treasure trove for chimpanzee research set in the Mahale Mountains and bordered by Lake Tanganyika. I started out as a graduate student at the age of 24. Time has passed since then, and it still passes; most of today's active researchers were born after my research began. When I was an undergraduate student, I was interested in the exploration of *terra incognita* such as the Amazon, Borneo, Sumatra, or Africa. It was the early 1960s, only 15 years after the end of the Second World War, and Japan had not yet achieved a level of foreign exchange that allowed ordinary people to travel abroad. At that time, three books appeared on gorilla expeditions, written by Kinji Imanishi, Junichiro Itani, and Masao Kawai. These books not only filled me with interest in the great apes but also made me realise that if I studied chimpanzees, I could go to Africa! Although I was a zoology student, I only vaguely imagined before reading these books that I might study the ecology of animals. Fortunately, the graduate course of Physical Anthropology in the Zoology department, with Imanishi as the first professor, was established in 1962, as if it were prepared just for me. Therefore, I was happy to enter the course with my colleagues, Takayoshi Kano and Kohsei Izawa. I thought I would study chimpanzees for three years or so and then change my research target to human beings and their traditional lives as hunter-gatherers.

Once I began to study chimpanzees, I soon realised they were not creatures that could be understood in a few years of study. We encountered new discoveries in behaviour just as surely as a new year arrives and the old year departs. Every year I found new dietary items, new behavioural patterns, new personalities, and new relationships. Individuals who appeared by birth or immigration have fascinated me by their doing something new. My first observations of chimpanzees

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encountering an unexpected animal were recorded for a crocodile in 1983, a lion in 1989, and a freshly dead leopard carcass in 1999. Similarly, cannibalism and ostracism were first observed more than two decades after the start of my research. The apes' behaviour is so rich in variety that, no matter how many years I observe them, I will never grow bored. Every year a new student comes to Mahale and surprises me by reporting a behavioural pattern that I have never seen before. Such discoveries happen because of the flexible behaviour of chimpanzees and the wonderfully diverse environment of Mahale, which is rich in biodiversity and landscape variation. This is why I have continued to conduct research for so long.

Chimpanzees have a diverse behavioural repertoire, rich in versatility, which allows them to adapt to complex natural, social, and demographic conditions. People have been searching for a 'missing link' in remote places in the Himalayas, China, and even North America. They have searched far and wide, but the answer was right before their eyes: chimpanzees are the missing link!

I wrote this book to introduce laypersons and students to the wondrous behaviour of the chimpanzee. I want to present the reader with a myriad of marvellous examples illustrating how a chimpanzee's behaviour will adapt itself to meet any circumstance. The basis of the book comes from my previous books that were written in Japanese (Nishida 1973a, 1981, 1994, 1999, 2008b) but a great deal of new data are added. My greatest wish is, through the rich use of photos and illustrations, to bring the reader closer to the actual world of the chimpanzee. I would be thrilled to learn that this book has helped readers to share my feelings about how closely humans and chimpanzees are actually linked.

This is my personal record of the chimpanzees of Mahale. As many of my colleagues have pointed out, chimpanzees of different study sites show different behavioural patterns, although, of course, they also have many in common. Just as a cultural anthropologist writes on the ethnography of a tribal society under study, I have written on the ethnography of the Mahale chimpanzees. Therefore, no one should assume that anything I have written about Mahale is applicable to the chimpanzees of other study sites.

Of course, humans and chimpanzees have many differences, and this is what makes it all so interesting – this is what breeds insight. Humankind's coexistence with different species brings to our lives great benefits and delight.

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Moreover, I want my feelings on the plight of the chimpanzee to hit home, increasing the awareness that humankind has no right to monopolise the Earth, to waste its resources, to endanger masses of its living creatures. I hate to imagine living in a world where there is no dragonfly or no butterfly.

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This book is based on my long-term research of Mahale chimpanzees, for which I owe thanks to many people and institutions. First, I must thank the late Kinji Imanishi and the late Junichiro Itani, my two great mentors, for their pioneering theoretical and field study, which enabled us to initiate the Mahale Mountains Chimpanzee Research Project. I also thank Takayoshi Kano and Kohsei Izawa, who assisted in the initial study period, for their continuous support. Kano and I cooperated to promote a joint project on chimpanzees and bonobos throughout the 1980s. My colleagues for the longest time, the late Kenji Kawanaka and the late Shigeo Uehara, contributed greatly to the establishment and continuation of the long-term research. Without their support, this project would have withered on the vine. More recently, Kazuhiko Hosaka and Michio Nakamura also have made every effort to help continue this project.

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I also express special thanks to Jane Goodall and Geza Teleki for alerting me to the dire situation of chimpanzee conservation in the 1980s. One of the results of this discussion is the continuous publication of *Pan Africa News* for research and conservation (http://mahale.web.infoseek.co.jp).

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