

Wild Cultures: A Comparison Between Chimpanzee and Human Cultures

How do chimpanzees say, "I want to have sex with you?" By clipping a leaf or knocking on a tree trunk? How do they eat live aggressive ants? By using a short stick with one hand or a long stick with both? Ivorian and Tanzanian chimpanzees answer these questions differently, as would humans from France and China if asked how they eat rice. Christophe Boesch takes readers into the lives of chimpanzees from different African regions, highlighting the debate about culture. His ethnography reveals how simple techniques have evolved into complex ones, how teaching styles differ, how material culture widens access to new food sources, and how youngsters learn culture. This journey reveals many parallels between humans and chimpanzees and points to striking differences. Written in a vivid and accessible style, *Wild Cultures* places the reader in social and ecological contexts that shed light on our cultures, which will help us refine human nature and its multitude of facets.

Christophe Boesch is Professor and Director of the Department of Primatology at the Max-Planck Institute of Evolutionary Anthropology in Germany. He has studied the chimpanzees of Taï National Park in Côte d'Ivoire for the last 33 years and those of Loango National Park in Gabon for 6 years. The author of two published books and the founding president of the Wild Chimpanzee Foundation, he fights for a better future for the remaining wild ape populations at a grassroots level.





Wild Cultures

A Comparison Between Chimpanzee and Human Cultures

CHRISTOPHE BOESCH





> CAMBRIDGE UNIVERSITY PRESS Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi, Mexico City

Cambridge University Press 32 Avenue of the Americas, New York, NY 10013-2473, USA

www.cambridge.org
Information on this title: www.cambridge.org/9781107025370

© Christophe Boesch 2012

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2012

Printed and Bound in the United Kingdom by the MPG Books Group

A catalog record for this publication is available from the British Library.

Library of Congress Cataloging in Publication data
Boesch, Christophe.
Wild cultures: a comparison between chimpanzee and

human cultures / Christophe Boesch.
pages cm
Includes bibliographical references and index.

ISBN 978-1-107-02537-0
1. Chimpanzees–Behavior. 2. Animal behavior. I. Title. QL737.P96B5955 2012
599.885–dc23 2012018828

ISBN 978-1-107-02537-0 Hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.



To all – people and chimpanzees – whose cultures are so fascinating and make life on Earth so rich,

To Lukas and Léonore for accompanying us through this adventure,
To Brutus and Fédora for coaching us through the secrets of their Culture
To Grégoire and Moda for sharing the intimacy of their Culture





Contents

	Acknowleagments	page x
	Introduction	1
	And the culture war started	3
	Chimpanzee ethnography to uncover culture	4
	Cultural biases and scientific progress	5
1.	Studying culture in the wild	9
	To study animals, all you need is love	12
	First steps towards chimpanzee culture	14
	About animals, ignorance, and anthropocentrism	16
	Time to realize that Descartes got it wrong	19
	Synopsis	21
2.	From human culture to wild culture	22
	Culture and ecology in humans	27
	Different approaches to culture	28
	Animal ethnography to expose animal cultures	30
	Imo, the cultural innovator	32
	Social transmission of cultural traits	33
	The paradox of studying "culture outside of culture"	39
	Animal cultures to learn about human cultures	45
	Synopsis	46
3.	Shaping nature into home: about material culture	47
	Tool makers in evolution	52
	Material culture shapes one's own world	53
	Technology boosts chimpanzee cultural ethnography	56
	Cumulative cultural evolution in chimpanzees	66
	When culture and environment mix	72
	Material culture in other species	74
	History of material culture: chimpanzee Stone Age	76
	Contribution to the cultural debate	78
	Synopsis	80



viii Contents

4.	One for all and all for one: about social culture	81
	Hunting cultures in chimpanzees Cooperation: acting at the same time or acting together?	86 91
	Cooperation in high-risk situations	96
	Cultural altruism in chimpanzees	100
	Social niche construction in animals	102
	Contribution to the cultural debate	104
	Synopsis	107
5.	I want to have sex with you: about symbolic culture	108
	Arbitrary social conventions in chimpanzees	112
	Innovation and transmission of inventions	118
	Social transmission of symbolic cultural traits	122
	Symbolic culture and social conventions in other animal species	123
	Contribution to the culture debate	124
	Synopsis	127
6.	Learning culture: from pupils to teachers	128
	Cultural acquisition in the natural world	131
	Mothers as the main culture vehicle	136
	Teaching styles differ across chimpanzee and human cultures	142
	Learning one's own social culture	149
	Contribution to the culture debate	153
	Synopsis	154
7.	Dead or alive? Towards a notion of death and empathy	155
	Understanding of death in humans and other animals	160
	Mourning and compassion around death in chimpanzees	162
	About empathy and compassion	165
	The origin of a notion of death	172
	Contribution to the culture debate	174
	Synopsis	175
8.	Wild culture – wild intelligence: cognition and culture	176
	Culture-driven cognition	183
	Cognition and culture in humans	186
	Cultural cognition in the laboratory versus in the real world	192
	Cultural cognition in nature	200
	Culture and cognition in chimpanzees	202
	Contribution to the culture debate	212
	Synopsis	214



	Contents	ix
9.	Uniquely chimpanzee – uniquely human	215
	Cultural diversity in humans and chimpanzees	219
	Cultural transmission mechanisms in chimpanzees and humans	225
	Uniquely chimpanzee culture	228
	Uniquely human culture	232
	Ethnography of culture	237
	Synopsis	238
	Epilogue: Will we have the time to study chimpanzee culture?	239
	References	243
	Index	267



Acknowledgments

Wild Cultures is about differences within and between species and such comparisons were only possible thanks to the generosity, tolerance, and cooperation of many others. When Jane Goodall first invited my wife Hedwige and I to visit Gombe in 1983, we were naturally very impressed by the Gombe chimpanzees, given our still very slow progress in habituating the Taï chimpanzees at that time. But we were just as impressed by how dramatically different the Gombe habitat was compared to the Taï forest. And as we progressed in our observations of the Taï chimpanzees, we rapidly felt that they did not fit perfectly into what we had read about the chimpanzees of Gombe and Mahale. That was the beginning of this book.

It was not only a great honor then when both Jane Goodall and Toshisada Nishida invited me to their study sites for longer stays and encouraged me to make comparisons between the Taï, Gombe, and Mahale chimpanzees. This was not only a wonderful opportunity, it was also an eye-opener to what population differences in this species really mean. I am not only very grateful to these two pioneers of chimpanzee research for inviting and supporting me; I am equally grateful that they made my stays in their camps and my learning experiences there such a pleasure. I want to thank my teachers in Gombe who so patiently taught me about cultural differences there: Frodo, Evered, and Prof introduced me to their hunting behavior, Fanny and Fred showed me leaf grooming; Fifi, Fax, and Gremlin introduced me to termite fishing; and Goblin and Wilkie introduced me to their complex interactions with red colobus monkeys. I would also like to thank my teachers in Mahale: Alufo and Bonobo's refined leaf folding allowed me to understand this behavior; Masudi, Caliope, Opal, and Gwekulo introduced me to skilled ant fishing; and Darwin and Carter ably demonstrated their specific way of leaf clipping. Without these teachers, I would not have been convinced about all these differences and an important aspect of chimpanzee life would have remained obscured.

After my illuminating visits to Gombe and Mahale, I became very curious about the breadth and richness of cultural differences in chimpanzees and was lucky enough to have generous colleagues who graciously invited me to visit a variety of chimpanzee groups living in a variety of ecological conditions. I am thus very grateful to John Mitani, David Watts and the Ngogo chimpanzees, to Vernon Reynolds and the Budongo chimpanzees, and to Richard Wrangham and the Kanyawara chimpanzees for accepting me at their sites, for guiding my vision into the fascinating individuals of these study communities, and for graciously answering all



Acknowledgments xi

my questions as I wanted to know whether my impressions gained on their study groups corresponded to theirs. Here, I would also like to thank Crickette Sanz and David Morgan for introducing me to the Goulalougo chimpanzees, and David for memorably showing me how the chimpanzees use sequential tools to access underground termites.

The start of our project in Taï National Park would not have been possible without the trust Hans Kummer placed in us. Hans Kummer's intellectual mix of rigor and keen longing to understand the unknown have greatly influenced my own attitude towards science. My present involvement in primate research and conservation is part of the legacy he left me. In 1991, after visiting the Taï chimpanzee project, Professor Steven Stearns of the University of Basel offered me an academic position at his institute that would allow me to continue my fieldwork in Taï forest. After 12 years in the forest, this generous offer allowed me to touch base with scientific progress and intensify the Taï Chimpanzee Project as well as develop my scientific career. I would also like to express my deepest gratitude to Professor André Aeschlimann from the University of Neuchâtel, head of the Swiss National Foundation and President of the CSRS in Abidjan for many years, whose support of the Taï Chimpanzee Project throughout its early years contributed importantly to the long-term success of this project, now in its 33rd year.

My wife Hedwige Boesch-Achermann was enthusiastic, curious, and open to leave the so-called civilized world. She was by my side from the first day on and for more than 12 years of permanent life in the Taï forest. If the study of the Taï chimpanzees is successful, it is only because she was there with me all those years. This transformed our life into an adventure, a long inquiry into and discovery of some of the most intimate aspects of the lives of our cousins from the forest. Most of the ideas developed in this book matured over the years we spent together in the forest, but also after this time when she continued her work for the chimpanzees in Europe. Trying to understand this elusive species and discovering the many aspects of their life was and will always be a part of our life. Therefore, throughout the text, the use of "I" should often be read as "we" as the Taï experience was a joint experience that moulded so many aspects of my scientific and personal way of thinking.

As the Taï Chimpanzee Project developed, we began to include both students and local field assistants to increase the number of observations done with the chimpanzees as well as to habituate three other chimpanzee communities. Each of our many field assistants have our deepest gratitude. Not only were they willing to spend 12–14 hours per day following the chimpanzees on their often over 5 km-long forays in the forest, but they spent nights in the forest to protect seriously ill chimpanzees from possible leopard attacks. And they were willing to stay with the chimpanzees during some very unstable periods, including the civil wars from 2002 to 2004 and in 2011, thereby actively protecting the study site and the chimpanzees. They have been our ambassadors in the local populations and made the development and continuation of the project possible since it began in 1978. We would especially like to thank the senior field assistants Kpazahi Honora, Bolé



xii Acknowledgments

Camille, Oulaï Nicaise Daurid, Bally Louis Bernard, Tahou Mompeho Jonas, Gouyan Bah Nestor, Gnahe Djirian Appolinaire, Yagnon Valentin, Tah Alain Pahi, Sioblo Arsène, Guy Sylvain, Guiro Ferdinand Thia, Kevin Charles Bally, late Blaise Blé Téré, Ignace Dezaï, Camille Dji, Gabriel Gnombouhou Kouya, Gérald Gah, Benjamin Goullaon, Mathias Douosson, and Denis Lia.

At the same time, I would like to thank the many students, far too numerous to be named individually, from all over the world who helped to follow and study the chimpanzees in Taï forest for short periods. I thank all students and colleagues who were involved in the Taï project for longer periods for their dedication and passion for the chimpanzees and their forest, including Pascal Gagneux, Christian Falquet, Miriam Behrens, Gerd Radl, Diane Doran, Martina Funk, Margaret Hoitink, Andy Kurt, Penny Simpson, Brigitte Schmid, Suzanne Pieren, Ulrike Ratkjen, Annemarie Fränkl, Gregory Roduit, Paco Bertolani, Chloe Cipoletta, Dean Anderson, Nick Malone, Ilka Herbinger, Roman Wittig, Myriam Sele, Cathy Crockford, Steven Bada, Nicola Paterson, Pola Abaza Daniel Hanus, Hjalmar Kuehl, Julia Riedel, Janna Rist, Melissa Tauber, Kathleen Beese, Sabrina Locatelli, Lionel Egger, Fabian Leendertz, Sandra Junglen, Rebecca Stumpf, Antoine N'Guessan, Zoro Goné Bi, Anja Blankenburg, Svenja Schenk, Siva Aina Jensen, Célestin Kouakou, Simone Ban Dagui, Nadine Eckhardt, Lydia Luncz, Livia Wittiger, Sonja Metzger, Ammie Kalan, Karline Jaanmart, Serge Soiret, and Danielle Spitzer.

In any long-term project, some difficult periods may occur that might have dramatic consequences for the chimpanzees we have habituated to human presence. Thanks to the courage and altruism of some individuals, in most cases we were able to prevent the worst – the disappearance for unknown reason and/or the killing of the chimpanzees. My warmest thanks therefore go to Claudia Steiner and Franca Donati, who were present during the emotionally wrenching Ebola outbreaks in the Taï chimpanzees in 1992 and 1994, to Thomas Pfluger who stayed near the camp when, in 1991, unrest from Liberia spilled over into the Taï region and also to Emmanuelle Normand, Yasmin Moebius, Tobias Deschner, and Cristina Gomes for having decisively contributed to keeping the project going during some of the most difficult times of civil unrest in Côte d'Ivoire during 2002–2004. Finally, my warmest thanks go to Livia Wittiger, Lydia Luncz, Nadine Eckhardt, Sonja Metzger, and Danielle Pfitzer for keeping the project alive during the terrible disease outbreak of Christmas 2009 and the following periods of unrest, as well as to Serge Keagnon Soiret and Simone Ban Dagui during the war of early 2011. These individuals' contributions made it possible for the Taï Chimpanzee Project to remain active, which will undoubtedly contribute to our understanding of chimpanzees in the years to come.

I am most grateful to Carolyn Rowney for enthusiastically and efficiently correcting the writing in this book. A special thank you to my office assistant Claudia Nebel, our IT expert Andreas Walther, and our multimedia expert Silvio Tüpke for their great continuous support, which makes it possible for me to spend time writing books! And I thank Hedwige Boesch, Cleve Hicks, Claudia Borchers, Tobias Deschner, Linda Vigilant, Geraldine Fahy, Livia Wittiger, Josephine Head, Erin



Acknowledgments xiii

Wessling, Claudio Tennie, Richard Moore, and the other members of my department who enthusiastically read and discussed all draft chapters of this book.

Our long-term study of the chimpanzees in Taï National Park was only possible because of the constant and amicable support of the Ivorian Authorities. Thirty-three years is a long time and by far surpasses the normal life of any government, but nevertheless, the support from the Ivorian government remained inflexible. We wholeheartedly admire the constancy of the support we received from all the different people working in and heading the "Ministère des Eaux et Forêts," as well as within the "Ministère de la Recherche Scientifique," and in particular those working and heading the "Direction de la Protection de la Faune" of the "Office Ivoirien des Parcs et Réserves" and of the "Direction du Parc national de Taï," as well as the numerous park agents, especially those of the Taï Sous-Préfecture. Throughout the years, Taï National Park has been subject to attacks from various directions, mainly in the shape of logging, poaching, civil unrest, and farming, and this has threatened the survival of the forest and its fauna, including the chimpanzees. The Ivorian authorities have always undertaken the steps necessary to guarantee the survival of this precious park and unfailingly supported the continuity of the project. The Centre Suisse de Recherches Scientifiques en Côte d'Ivoire (CSRS) has been our base in Abidjan since our very first visit to the country in 1976, and they have remained a key partner in the project ever since. We thank all the successive directors, Jean-Francois Graf, Marianne Knecht, Felix Naef, Michel Gremaut, Peter Lehman, Guéladio Cissé, and Bassirou Bonfou for going out of their way to support us. In Taï, we profited a great deal from the support of the directors of the Station d'Ecologie Tropicale and their staff, Denis Vivet, the late Théo Tiépkan Zoroa, and Paul Zouhou, respectively. A special thanks also to my colleagues at the University of Cocody and Abobo in Abidjan for supporting the collaboration between our institutions.

Our new project in Loango National Park in Gabon has profited from the unfailing support of the Gabonese authorities, l'Agence Nationale des Parcs Nationaux (ANPN), and of the Centre National de Recherches Scientifique et Techniques (CENAREST). This project is a collaboration among and financially supported by Société pour la Conservation et le Développement (SCD), Wildlife Conservation Society (WCS), and the Max Planck Society. We are very grateful to Rombout Swanborn for his financial and logistical support of the Loango project, and Tomo Nishihara, Lee White, and Edward Truter for their constant logistical support. I am especially grateful to the students who helped right from the start and contributed to the development of the project under sometimes quite strenuous conditions: Josephine Head was with us from the very first day and she was later joined by Luisa Rabanal, Nikki Tagg, Beke Graw, Emilie Fairet, Edward Wright, Lyndsay Rankin, Melanie Gregoire, Christopher Orbell, and Carolyn Sanguinetti. We are indebted to Loïc Mackaga, Erick Reteno Guizard, Kharl Remanda, Aimé Relonga, Herve Ngoundou, Ulrich Moussouami, Yannick Nkoma, Jhon Essongue, Martial Pambo, and Pierre Boukoussou for their invaluable tracking assistance in the forest and contributing to the long-term data collection.



xiv Acknowledgments

No scientific project can survive without financial support and here I wish to stress the continuous, generous, and unwavering support we have received from the Swiss National Science Foundation for the first 19 years and from the Max Planck Society for the past 13 years. Very few public funding organizations dare to support a long-term field project for such a length of time and we are immensely grateful to them for seeing the value in such a study. We would also like to thank additional funding sources, including the Messerli Foundation, the Leakey Foundation, the Schultz Stiftung, the Jane Goodall Institute, the Wenner Gren Foundation, the Roche Foundation, and the Freie Akademische Gesellschaft.

How dull would our life have been in the forest without our encounters with the wonderful, friendly, helpful, curious, and tolerant African people near and in our forest camp, who joyfully shared their knowledge with us? What would our life have been like over the years without our friends and family from abroad who visited, sent presents, letters, food, and books, and stayed in contact while we were in Africa and back in Europe? Thank you to all of you.

Last but not least, we would like to thank all the chimpanzees who have tolerated our presence for so many years, allowed us to share so much of their lives with us, and made us wonder on a daily basis about our own species. During the process of habituating and following them, we also inadvertently contributed to their confrontation with threats such as diseases and made them more vulnerable to poaching. This has been a constant worry for us from the beginning and I hope that by increasing the status of chimpanzees in the scientific community and the public at large, this book will allow us to pay back some of our debts to them.

It is also in the spirit of "paying back" a debt to the chimpanzees that my wife and I have created the "Wild Chimpanzee Foundation" (www.wildchimps.org). We are most grateful for the wonderful support, motivation, and involvement, be it financial or technical, we have experienced in this undertaking from so many of the team at the Max Planck Institute. We could not do it without them.