The Evolution of Thought
Evolutionary Origins of Great Ape Intelligence

Research on the evolution of higher intelligence rarely combines data from fields as diverse as paleontology and psychology. In this volume we seek to do just that, synthesizing the approaches of hominoid cognition, psychology, language studies, ecology, evolution, paleoecology, and systematics towards an understanding of great ape intelligence. Leading scholars from all these fields have been asked to evaluate the manner in which each of their topics of research informs our understanding of the evolution of intelligence in great apes and humans. The ideas thus assembled represent the most comprehensive survey to date of the various causes and consequences of cognitive evolution in great apes. *The Evolution of Thought* will therefore be an essential reference for graduate students and researchers in evolutionary psychology, paleoanthropology, and primatology.

Anne E. Russon is a professor of psychology at Glendon College of York University in Toronto. Since 1989 she has been studying intelligence and learning in ex-captive orangutans released to free forest life in central and eastern Indonesian Borneo.

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Preface

This book arose from three realizations. First, there is an important need for good models of great ape cognitive evolution. Studies of comparative primate cognition over the last two decades increasingly show that all great apes share a grade of cognition distinct from that of other nonhuman primates. Their cognition appears to be intermediate in complexity between that of other nonhuman primates and humans, so it offers the best available model of the cognitive platform from which human cognition evolved. Understanding the position of the great apes is then essential to understanding cognitive evolution within the primate order and ultimately, in humans. Second, existing reconstructions of the evolutionary origins of great ape cognition are all in need of revision because of advances in research on great ape cognition itself, on modern great ape adaptation, and on fossil hominoids. Third, developing an accurate picture of the evolutionary origins of great ape intelligence requires bringing together expertise from a highly diverse range of fields beyond modern great ape cognition. Essential are current understandings of the brain, life histories, social and ecological challenges, and the interactions among them in both living and ancestral hominids.

We therefore assembled a team of contributors with expertise spanning the topics currently recognized as relevant to cognitive evolution in the great ape lineage, with the aim of piecing together the most comprehensive picture possible today. We asked all our contributors to explore the implications of their realm of expertise for cognition and cognitive evolution. We are grateful to all of them for their willingness to embark on this enterprise and for sticking with the sometimes trying process of fitting this broad range of material together. The product is a compilation of our contributors' views on adaptations relevant to cognition in the great ape lineage and our attempt to integrate their material into a coherent picture. Our sense is that a coherent picture does emerge. That contributors working from very different perspectives often voiced similar conclusions adds to our sense that this picture has considerable substance.

We do not presume that our reconstruction will close the book on the evolutionary origins of great ape cognition. Although we covered most if not all of the major issues currently recognized as important in the evolution of great ape mentality, the breadth of the material involved means that our coverage is inevitably brief. Further, our contributors pointed to additional factors in need of consideration and there remain vast areas of importance that have been little researched or that are still crying for evidence. This picture will undoubtedly change as understanding improves. Our hope is that this collective work will contribute to filling the need for good models of the evolutionary origins of great ape intelligence and at the same time spur efforts to improve our picture where it proves lacking.