

Jupiter missiles within a matter of months. Robert Kennedy insisted to Dobrynin that this assurance should remain secret and that, if the Soviet Union made it public, the assurance would be withdrawn. President Kennedy was thus able to earn a reputation for toughness while showing flexibility and a willingness to compromise. The agreement on the Jupiters remained secret for many years — although the missiles were removed in 1963.

President Kennedy did not believe that Khrushchev wanted war, any more than he did himself. He believed that Khrushchev wanted to redress the nuclear balance to put pressure on the Western powers in Berlin. In recent years the most common interpretation has been that Khrushchev wanted to defend Cuba against a US attack.

Aleksandr Fursenko and Timothy Naftali do not resolve this issue in their book. The way they set up their account gives pride of place to the defence of Cuba, but they also provide evidence to show Khrushchev's concern about the way in which the Soviet delay in deploying strategic missiles hampered his foreign policy.

Fursenko and Naftali bring new evidence from Russian archives to bear on the crisis. They show that relations between the Soviet Union and Castro's regime were close and complex before the crisis. They argue that Khrushchev was in charge of Soviet policy during this period, and that whatever was erratic about Soviet policy sprang not from political struggles inside the Kremlin but from Khrushchev's own personality.

They also indicate that Robert Kennedy's conversation with Dobrynin about the Jupiters was not decisive in resolving the crisis, because Khrushchev had already decided to agree to withdrawal of the Soviet missiles from Cuba before he learned of Kennedy's assurance that the Jupiters would be withdrawn from Turkey.

Although they provide a great deal of new information, Fursenko and Naftali do not say enough about the sources they have used. They have been able to consult documents in the Russian Presidential Archive, to which access is very restricted. But they do not reveal what collections they could consult. They quote few documents at length, even though they evidently used minutes of Politburo meetings. One reason why these questions matter is that if the authors had access only to collections dealing specifically with Cuba, that would lead to an emphasis on the defence of Cuba as a motive for Khrushchev's actions. Interesting though the new Soviet sources are, they do not compare in quality with the Kennedy tapes. This suggests that we still have more to learn about the Cuban missile crisis. □

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Ape people

Next of Kin: What Chimpanzees Have Taught Me About Who We Are

by Roger Fouts with Stephen Tukul Mills
Morrow: 1997. Pp. 420. \$25

Marc D. Hauser

The philosopher Ludwig Wittgenstein argued that even if lions could speak we wouldn't understand them. The psychologist David Premack mused that even if chickens had syntax, they'd have nothing interesting to say. But what if both these arguments are wrong, leaving the possibility that, like the fictitious veterinarian Dr Doolittle, we can talk to animals and learn interesting things about their lives? And if we could, whose lives would be worth learning about? If you were a psychologist interested in the human mind and its evolutionary history, you would, without doubt, be driven towards our closest living relative: the chimpanzee.

Roger Fouts is a psychologist. *Next of Kin*, written with Stephen Tukul Mills, is Fouts's personal account of what it is like to work with, talk to and defend the lives and rights of captive chimpanzees. It is an adventure story rife with sadness and horror, excitement and intrigue. It begins with his childhood experiences with animals, his dreams of becoming a child psychologist and, finally, his involvement as a graduate in experimental psychol-

ogy with the ground-breaking research of Allen and Beatrix Gardner and their newly acquired chimpanzee, Washoe.

The Gardners began a research programme designed to reveal the linguistic potential of chimpanzees, specifically the ability to learn words in American sign language (ASL) and to string them together into novel, syntactically structured sentences. Fouts's apprenticeship involved caring for Washoe, treating her like a human child — albeit a deaf child who needed to learn ASL rather than spoken language. The job turned into a life-long passion and led to a fervent interest in the care and well-being of captive animals.

In the late 1960s and early 1970s, several research programmes sparked a renewed interest in human nature and the attributes that had long been touted as uniquely human. Jane Goodall's studies of chimpanzees in the Gombe Reserve were beginning to mature, uncovering evidence of tool use, hunting, murder and social politics. Peter Marler and others working on the natural communication of animals were uncovering exciting parallels to human speech and language. And a group of psychologists, including the Gardners, were attempting to determine whether apes and dolphins could acquire human-like language and demonstrate human-like thought.

In contrast to studies in the wild, work with these animals took on a cult-like fol-

Is this the origin of art?

Is art a human invention or an instinct shared with other animals? The work of primate painters this century has been analysed, debated, shown in galleries and sold for high prices. Joni the chimpanzee, seen here with the Russian scientist Nadjeta Kohts in 1913, was the first to be seriously studied. A later chimp called Washoe (see the review above) apparently claimed in sign language that she liked red best because it was beautiful. Is this all just creative play? The ethologist Desmond Morris, who contributes a foreword to *Monkey Painting* by Thierry Lenain (Reaktion Books, £14.95/\$24.95) believes that apes are expressing a primitive aesthetic sense. Read this intriguing account, look at the pictures and decide for yourself.



lowing, with ape fan clubs, newsletters, prime-time television spots and so on. Many of the researchers invested years of time and energy — as well as emotional attachment — in their studies. Indeed, their subjects were sometimes treated not so much as targets of scientific investigation but rather as family members. It is this paradox that lies at the heart of Fouts's story.

At the start of *Next of Kin*, Fouts mentions the ethical problem of raising a human child in a chimpanzee family. But then, as if the ethical concerns evaporate, he swiftly turns to the fascination of raising a chimpanzee in a human family, and his own childhood "experiments" with cross-fostering ducklings to domestic cats. After spending years experimenting with Washoe and several other chimpanzees, though, he suddenly realizes he has done something unethical. Driven only by his intellectual curiosity, he has failed to consider what such experiences would be like for a chimpanzee held captive without maternal nurture, sex, play, social politics and so on. Fouts retreats from science and plunges into alcoholism

He eventually emerges from his depression with a renewed sense of energy, guided by a desire to uncover, and ultimately abolish, what he perceives as an international disaster: highly inappropriate housing facilities for primates. The rest of the book tells of Fouts's fight for the care and well-being of primates in captivity, of his continued struggle with research and of the findings that emerged from his studies.

Sociopolitical saga apart, there are various scientific nuggets dispersed throughout the book. The reader is treated to observations of chimpanzees teaching their young bits of ASL, deceiving Fouts for a Coke, signing about the grief of losing a baby, using mirrors to put on make-up and clothes, and signing among themselves about the day's events. One cannot help but be amazed by all of this. Yet Fouts is out of touch with several areas he discusses, and apparently forgets that his research rests on that of others. For example, we find no mention of Premack's work with chimpanzees. Uniquely for his time, Premack focused on the conceptual abilities of animals rather than their capacity to acquire the formal structure of language; it was in this guise that Premack mocked the imaginary syntax-carrying chicken.

And, as it turns out, this is precisely where work on captive apes and other animals has moved, due in part to the critical blows dealt by linguists, psycholinguists and philosophers to studies of ape semantics and syntax. Tetsuro Matsuzawa is also not mentioned and Sue Savage-Rumbaugh, one of the leaders in this field, receives a one-sentence nod. And yet, like Premack, both have generated fantastic findings about the conceptual abilities of chimpanzees and bonobos.

Next of Kin is also replete with conceptual

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and empirical inaccuracies. Fouts thinks that human language is primarily a cultural phenomenon. Given all the evidence of dedicated linguistic brain areas, universal grammar, highly constrained sequences of language development and so on, one simply cannot ignore the importance of biology. He argues in favour of human languages emerging from a gestural form, a claim soundly rejected by many authors, including Steven Pinker, Derek Bickerton and Philip Lieberman. If gestural languages were dominant, why don't we see any remnants today? Why has no culture ever taken a gestural form of language as its first and dominant form of communication? Why aren't gestural signals dominant to vocal signals in most non-human primates?

Fouts claims that the dominant form of communication for human infants is through facial expressions and hand gestures, rather than vocal signals, because human infants are born with a chimpanzee-like vocal tract that does not become fully adult-like until about two to three years of age, when words are strung together into sentences. None of this is correct. Infants cry from birth and soon after begin to make communicative gurgles, raspberries and laughing sounds. Babbling emerges at just about the age that the larynx descends into

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the throat, forming the adult-like configuration. The visual and auditory modalities are used for communication in early development. When words are strung into sentences, it is not because of a mature vocal tract, but because of a computational mechanism sufficiently developed to allow recombination.

Further, Fouts's view that all primate vocalizations (that is, those produced naturally as part of the species-typical repertoire) are processed by the emotional areas of the brain is also incorrect, as demonstrated by recent neurophysiological studies on rhesus macaques showing involvement of the auditory cortex.

The book is therefore both fascinating and infuriating. Fascinating because it tells of the trials and tribulations of trying to communicate with another species. Infuriating because the distinction between evidence and impression are blurred, and because profound philosophical and psychological problems are often dealt with superficially. In the acknowledgments, Fouts showers "thank-yous, hugs, and pant-hoots ... to the five people who inspired [the] book: Washoe, Loulis, Moja, Tatu, and Dar". People? How interesting. □

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