

DOWNLOAD PDF PRIMATE ORIGINS (DEVELOPMENTS IN PRIMATOLOGY: PROGRESS AND PROSPECTS)

Chapter 1 : Primate Origins: Adaptations and Evolution by Matthew J. Ravosa

This book series melds the facts of organic diversity with the continuity of the evolutionary process. The volumes in this series will exemplify the diversity of theoretical perspectives and methodological approaches currently employed by primatologists and physical anthropologists. Specific.

Shapiro, Jane Goodall, Lori K. Issues in Ape and Human Evolution. Introduction to Section One. African Apes as Time Machines; R. Primate Divergence Times; A. An Asset to Hominoid Cognition; C. Introduction to Section Two. Chimpanzees, the Best-Known Ape. Introduction to Section Three. Pan in Pandemonium; S. Representational Capacities in Chimpanzees: Numerical and Spatial Reasoning; S. Gorillas, the Greatest of the Apes. Introduction to Section Four. The Status of Gorillas Worldwide; F. Physiological Bases for Behavior and Aging: Great Apes and Humans. Introduction to Section Five. The Great Ape Aging Project: African Apes at Risk. Introduction to Section Six. What Happened to Gorilla *Gorilla Uellensis*? A Preliminary Investigation; K. Apes, Persons, and Bioethics; P. Reviews "The human race originated in Africa, from where it spread to all corners of the world. The remaining African primates, especially the apes, provide clues about our evolution. Just when we have the technical resources and refined methods to plumb their secrets, the apes are being extinguished in Africa and Asia. The papers in *All Apes Great and Small* not only document current knowledge about our fellow beings but also underscore how much remains to be learned about them, information that surely would enhance our understanding of the human condition and career. Tuttle, author of *Apes of the World* "There is an impending crisis that the great apes could be extinct within 25 years. Comprehensive volumes like this one can help to avert tragedy, especially with a concluding section on the bush-meat crisis. Under the pioneering and inspirational leadership of Jane Goodall and Birute Galdikas, the editorial team have welded together a wealth of research data on the African apes. This provides a firm foundation for conservation and management programmes. Such books must not be allowed to become just a legacy to these fascinating apes - our closest relatives. Each paper is not only well written but also a significant part of the book as a whole. The chapters discussing hominid divergence from their ape cousins often lead to fascinating yet controversial conclusions. This volume closes with a discussion of the moral status of apes. Cavalien and Singer elaborate on their argument that apes should be accorded rights that include liberty, life and freedom from torture. Although this idea is controversial among some primatologists, Cavalien and Singer very convincingly present their case for The Great Ape Project.

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Chapter 2 : Primatology | Revolvly

Developments in Primatology: Progress and Prospects Major events in the evolutionary history of verte- primates and other animals moving on natural substrates.

Satsue Mito Primatology in sociobiology Where sociobiology attempts to understand the actions of all animal species within the context of advantageous and disadvantageous behaviors, primatology takes an exclusive look at the order Primates, which includes *Homo sapiens*. The interface between primatology and sociobiology examines in detail the evolution of primate behavioral processes, and what studying our closest living primate relatives can tell about our own minds. The meeting point of these two disciplines has become a nexus of discussion on key issues concerning the evolution of sociality, the development and purpose of language and deceit, and the development and propagation of culture. Additionally, this interface is of particular interest to the science watchers in science and technology studies, who examine the social conditions which incite, mould, and eventually react to scientific discoveries and knowledge. The STS approach to primatology and sociobiology stretches beyond studying the apes, into the realm of observing the people studying the apes. Taxonomic basis Before Darwin , and before molecular biology , the father of modern taxonomy, Carl Linnaeus , organized natural objects into kinds, that we now know reflect their evolutionary relatedness. He sorted these kinds by morphology , the shape of the object. Animals such as monkeys, chimpanzees and orangutans resemble humans closely, so Linnaeus placed *Homo sapiens* together with other similar-looking organisms into the taxonomic order Primates. From grooming to speaking Although social grooming is observed in many animal species, the grooming activities undertaken by primates are not strictly for the elimination of parasites. In primates, grooming is a social activity that strengthens relationships. The amount of grooming taking place between members of a troop is a potent indicator of alliance formation or troop solidarity. Robin Dunbar suggests a link between primate grooming and the development of human language. This number is referred to as the monkeysphere. If a population exceeds the size outlined by its cognitive limitations, the group undergoes a schism. Set into an evolutionary context, the Dunbar number shows a drive for the development of a method of bonding that is less labor-intensive than grooming: As the monkeysphere grows, the amount of time that would need to be spent grooming troopmates soon becomes unmanageable. Furthermore, it is only possible to bond with one troopmate at a time while grooming. The evolution of vocal communication solves both the time constraint and the one-on-one problem, but at a price. Language allows for bonding with multiple people at the same time at a distance, but the bonding produced by language is less intense. This view of language evolution covers the general biological trends needed for language development, but it takes another hypothesis to uncover the evolution of the cognitive processes necessary for language. Although these modules do not need to be physically distinct, they must be functionally distinct. Orangutans are currently being taught language at the Smithsonian National Zoo using a computer system developed by primatologist Dr. Francine Neago in conjunction with IBM. The massive modularity theory thesis posits that there is a huge number of tremendously interlinked but specialized modules running programs called Darwinian algorithms , or DA. DA can be selected for just as a gene can, eventually improving cognition. The contrary theory, of generalist mind, suggests that the brain is just a big computer that runs one program, the mind. If the mind is a general computer, for instance, the ability to use reasoning should be identical regardless of the context. This is not what is observed. However, when exposed to a test with an identical rule set but socially relevant content, respondents score markedly higher. The difference is especially pronounced when the content is about reward and payment. This test strongly suggests that human logic is based on a module originally developed in a social environment to root out cheaters, and that either the module is at a huge disadvantage where abstract thinking is involved, or that other less effective modules are used when faced with abstract logic. Further evidence supporting the modular mind has steadily emerged with some startling revelations concerning primates. A very recent study indicated that human babies

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and grown monkeys approach and process numbers in a similar fashion, suggesting an evolved set of DA for mathematics Jordan. The conceptualization of both human infants and primate adults is cross-sensory, meaning that they can add 15 red dots to 20 beeps and approximate the answer to be 35 grey squares. As more evidence of basic cognitive modules are uncovered, they will undoubtedly form a more solid foundation upon which the more complex behaviors can be understood. In contradiction to this, neuroscientist Jaak Panksepp has argued that the mind is not a computer nor is it massively modular. He states that no evidence of massive modularity or the brain as a digital computer has been gained through actual neuroscience, as opposed to psychological studies. He criticises psychologists who use the massive modularity thesis for not integrating neuroscience into their understanding. In order to understand the staggeringly complex nature of primate interactions, we look to theory of mind. Theory of mind asks whether or not an individual recognizes and can keep track of information asymmetry amongst individuals in the group, and whether or not they can attribute folk psychological states to their peers. If some primates can tell what others know and want and act accordingly, they can gain advantage and status. His studies have shown that chimpanzees can recognize whether a researcher desires a dropped object, and act accordingly by picking it up. Even more compelling is the observation that chimps will only act if the object is dropped in an accidental-looking manner: In a related experiment, groups of chimps were given rope-pulling problems they could not solve individually. However primates do not always fare so well in situations requiring theory of mind. In one experiment pairs of chimpanzees who had been close grooming partners were offered two levers. Pressing one lever would bring them food and another would bring their grooming partner food. Pressing the lever to clearly give their grooming partner much-wanted food would not take away from how much food they themselves got. For some reason, the chimps were unwilling to depress the lever that would give their long-time chums food. It is plausible but unlikely that the chimps figured there was finite food and it would eventually decrease their own food reward. The experiments are open to such interpretations making it hard to establish anything for certain. One phenomenon which would indicate a possible fragility of theory of mind in primates occurs when a baboon gets lost. Under such circumstances, the lost baboon generally makes "call barks" to announce that it is lost. Previous to the s it was thought that these call barks would then be returned by the other baboons, similar to the case is in vervet monkeys. However, when researchers studied this formally in the past few years they found something surprising: Only the baboons who were lost would ever give call barks. Even if an infant was wailing in agony just a few hundred meters away, its mother who would clearly recognise its voice and would be frantic about his safety or alternatively run towards her infant depending on her own perceived safety , would often simply stare in his direction visibly agitated. If the anguishing baboon mother made any type of call at all, the infant would instantly recognise her and run to her position. This type of logic appears to be lost on the baboon, suggesting a serious gap in theory of mind of this otherwise seemingly very intelligent primate species. However, it is also possible that baboons do not return call barks for ecological reasons, for example because returning the call bark might call attention to the lost baboon, putting it at greater risk from predators.

Criticisms Scientific studies concerning primate and human behavior have been subject to the same set of political and social complications, or biases, as every other scientific discipline. The borderline and multidisciplinary nature of primatology and sociobiology make them ripe fields of study because they are amalgams of objective and subjective sciences. Current scientific practice, especially in the hard sciences, requires a total dissociation of personal experience from the finished scientific product Bauchspies 8. This is a strategy that is incompatible with observational field studies, and weakens them in the eyes of hard science. As mentioned above, the Western school of primatology tries to minimize subjectivity, while the Japanese school of primatology tends to embrace the closeness inherent in studying nature. Social critics of science, some operating from within the field, are critical of primatology and sociobiology. Claims are made that researchers bring pre-existing opinions on issues concerning human sociality to their studies, and then seek evidence that agrees with their worldview or otherwise furthers a sociopolitical agenda. In particular, the use of primatological studies to assert gender roles, and to both promote and subvert feminism has been a point of

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contention. Several research papers on primate cognition were retracted in . Their lead author, primatologist Marc Hauser, was dismissed from Harvard University after an internal investigation found evidence of scientific misconduct in his laboratory. Londa Schiebinger, writing in , estimated that women made up 80 percent of graduate students pursuing Ph. Ds in primatology, up from 50 percent in the s. Early research emphasized male-male competition for females. It is widely believed that males tend to woo females, and that females were passive. For years this was the dominant interpretation, emphasizing competition among dominant males who controlled territorial boundaries and maintained order among lesser males. Female-female competition was ignored. We now know that females are active participants, and even leaders, within their groups. For instance, Rowell found that female baboons determine the route for daily foraging. Observations have repeatedly demonstrated that female apes and monkeys also form stable dominance hierarchies and alliances with their male counterparts. Females display aggression, exercise sexual choice, and compete for resources, mates and territory, like their male counterparts. One of them is the discussion of the politics of participation and the attention placed on females as subjects of research. Sarah Hrdy, a self-identified feminist, was among the first to apply what became known as sociobiological theory to primates. In her studies, she focuses on the need for females to win from males parental care for their offspring. Linda Fedigan views herself as a reporter or translator, working at the intersection between gender studies of science and the mainstream study of primatology. While some influential women challenged fundamental paradigms, Schiebinger suggests that science is constituted by numerous factors varying from gender roles and domestic issues that surround race and class to economic relations between researchers from Developed World countries and the Developing World countries in which most nonhuman primates reside.