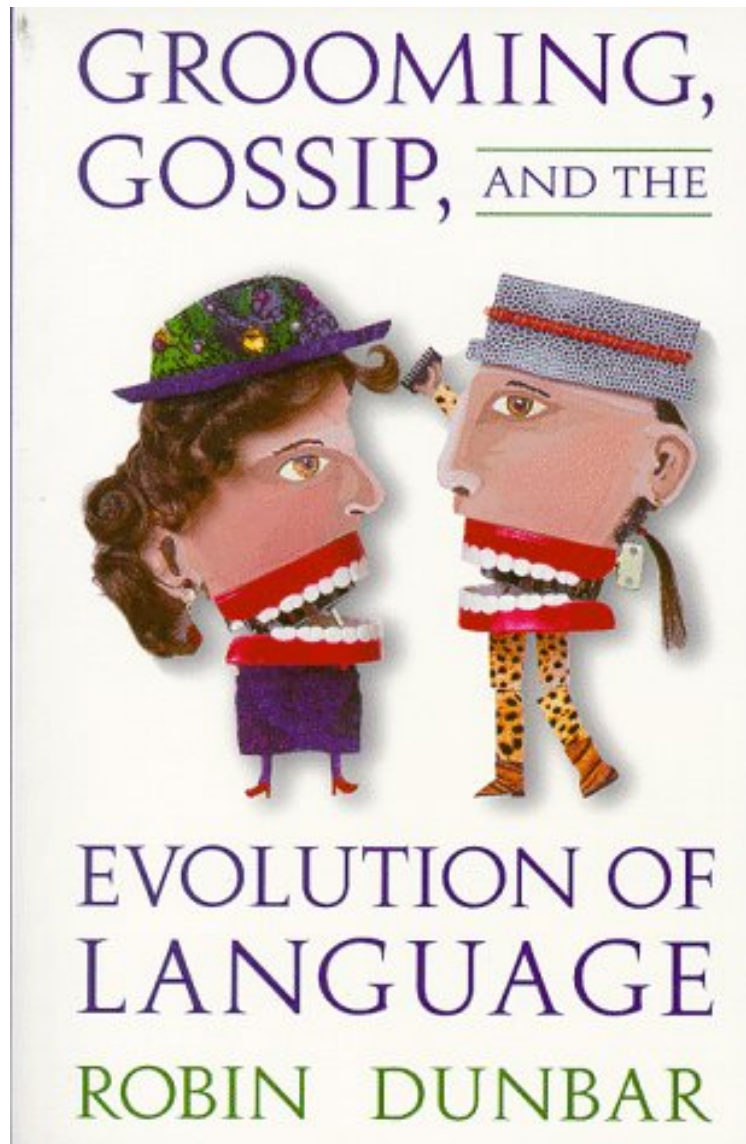


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## Grooming, Gossip, and the Evolution of Language

Robin Dunbar

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**Robin Dunbar : Grooming, Gossip, and the Evolution of Language** before purchasing it in order to gage whether or not it would be worth my time, and all praised Grooming, Gossip, and the Evolution of Language:

3 of 3 people found the following review helpful. An Intriguing Explanation for Human Language...And a Lot MoreBy Virginia CalhounAre humans the only species with language, as Chomsky and Pinker contend? And if that is true, how, when and why did we develop this unique ability? Robin Dunbar's book "Grooming, Gossip and the

Evolution of Language" answers these questions about the origin and purpose of human language in an ingenious, convincing and thoroughly readable way. Comparing us with other primate species, the author shows how pressure from predators caused the early ancestors of chimpanzees and of humans to band together for protection. However, in these large groups social stress and bullying became almost as much of a threat as predators had been. How chimpanzees solved this dilemma with grooming, and how later hominids did so with language, makes for fascinating reading. As an extra, Dunbar weaves together ideas about how we developed poetry, adultery, the company lunch room, regional accents, and a host of other seemingly disparate themes into his extensive net. "Grooming, Gossip and the Evolution of Language" answers questions you never knew you had, in a style which keeps you up far past your bedtime. Highly recommended!

15 of 5 people found the following review helpful. A Classic, Still Exciting and Highly Informative

By Herbert Gintis

The field of sociobiology leaped into our consciousness with the seminal volume by that name, written by the famous naturalist and expert on ant societies, Edward O. Wilson. Wilson was pilloried by social scientists and political activists, who considered any biological perspective on human society to be a sacrilege (see the beautiful and stirring account of Wilson's travails in Ullica Segerstrle, *Defenders of the Truth: The Battle for Science in the Sociobiology Debate and Beyond*. Oxford University Press, 2000). Sociobiology is founded on the insight that there are many social species, not just humans, and that the structure of social life is a major force in the tempo and pace of genetic change in social species. In humans, social life is embodied in cultural forms that can be elaborated upon and passed from generation to generation. Thus sociobiology applied to humans leads to gene-culture coevolutionary theory, which studies the dialectical interaction between hominid genetic structure, the cultural evolution based on this genetic structure, and the effect of new levels of cultural sophistication on continued genetic evolution ---see Luigi Luca Cavalli-Sforza and Marcus W. Feldman, *Cultural Transmission and Evolution* (Princeton University Press, 1981) and Robert Boyd and Peter J. Richerson, *Culture and the Evolutionary Process* (University of Chicago Press, 1985). One aspect of gene-culture evolution in hominids is the continual increase in brain size and complexity from hominid origins to the present. Large brains are extremely costly to evolve and maintain. Large brain size required costly restructuring of the human birth canal and led to neoteny---birth before fetal maturation---which entails extended child-rearing and protection. Moreover, the brain requires ten times the energy of the average bodily organ, and uses about 20% of total calories consumed. What could counterbalancing advantages of large brains be? The conventional answer to the riddle of the large brain was the capacity to use tools skillfully, and the value of communication in facilitating mutualistic cooperation. Richard Byrne and Andrew Whiten ---Machiavellian Intelligence: Social Expertise and the Evolution of Intellect in Monkeys, Apes, and Humans (Clarendon Press, 1988)--- deepened the explanation by adding that there are severe conflicts of interest among members of a social group, and a large brain will help a group member to form alliances and understand complex social forces that might well increase his biological fitness. This insight is both correct and quite valuable, but it seems to imply that large brains confer no group-level fitness benefits, but merely consist of an expensive "arms race" that hurts the species as a whole. Robin Dunbar's contribution in this book is flows from a statistical relationship described graphically on page 63: There is a very strong correlation between neocortex ratio and mean group size in different genera of anthropoid primates (monkeys, apes and humans). Dunbar argues that there is survival value in larger groups, probably because larger groups can better defend territories and survive cataclysmic events, such as contagious disease and war. However, the complexity of group interactions increases with group size, and a large brain provides individuals with the raw materials for forging strong social ties that permit the group to overcome the purely Machiavellian tendencies described by Witten and Byrne. Language, for Dunbar, is not hypertrophied through the need to deceive, but is appropriate to the task of allowing groups of individuals to make clear subtle and conditional promises, threats, and social descriptions. What about grooming and gossip? There is strong evidence from observation of monkey and ape behavior that grooming is a major source of group cohesion. It is carried out for many hours a day, the animals love to be groomed, and grooming solidifies cooperative alliances with great regularity. Now humans have no fur, so they cannot groom. Dunbar suggests that gossip performs the same role in humans as grooming in monkeys and apes: both are functional mechanisms for social bonding. I find it hard to take this explanation seriously---it is the sort of just-so story for which evolutionary psychology is routinely criticized (e.g., Stephen Jay Gould and Richard C. Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme", *Proceedings of the Royal Society of London B* 205 (1979):581-598.) The costs of a large brain are extreme, and the complex adaptations required to facilitate human communication through language and gesture are intricate and costly. It is implausible that an amorphous group-level function such as "group cohesion" could not have been ensured in a far more direct manner. However, Dunbar suggests a second mechanism, far more concrete, that was offered for the function of gossip by Magnus Enquist and Olle Leimar, "The evolution of cooperation in mobile organisms," *Animal Behaviour* 45:747-757, 1993. Enquist and Leimar suggest that gossip may serve to maintain social cooperation by allowing individuals to develop good reputations for their altruistic contributions to the group and bad reputations for selfish and free-riding behavior. A good reputation is personally valuable and even fitness enhancing because others will want to form alliances (including marriage) with those who consistently behave altruistically and will shun and isolate those who are selfish and opportunistic. Of course, if the behavior of each individual were observed by all

others, gossip would be unnecessary---each group member could judge for himself. But such is rarely the case. More generally, one or a few individuals will observe the behavior of a group member, and the member's reputation can be formed accurately only if his behavior is transmitted truthfully to the group. This is what truthful gossip does. If the Enquist-Leimar-Dunbar theory of gossip is correct, and I will argue below that it is, we have a very strong function for gossip, perhaps even strong enough to justify the immense costs of language acquisition. The key point in the reputational theory of gossip is that unless gossip is almost always truthful, it will not be believed, and hence it will not be performed. But why should individuals gossip truthfully, as opposed to simply saying whatever suits the personal needs at the time (as assuredly some people do---witness the Shakespearean tragedies *King Lear* and *Othello*)? This is an important and deep question that is not yet fully answered. I believe there is a two-part answer. First, there is an evolved human predisposition to tell the truth; people will of course lie, but most will lie only when the costs of truth-telling are fairly high. Indeed, were this not the case, human language and gestural communication could not have developed: why bother communicating if people simply tell you what is in their best interest to have you believe. Truth-telling is thus a precondition of the physiology and psychology of human linguistic and gestural communication. Second, humans are very good at detecting lies, so it is difficult for a habitual prevaricator to maintain his credibility---see Leda Cosmides, "The Logic of Social Exchange: Has Natural Selection Shaped how Humans Reason? Studies with the Wason Selection Task", *Cognition* 31 (1989):187-276. We thus have a tight causal loop involved with human gene-culture coevolution: hominids developed the ability to detect cheaters and the altruistic predisposition to punish anti-social behavior. This led to a vast increase in the value of linguistic and gestural communication, whence the evolution of an elaborate human communicative physiology (see my treatment in "Gene-Culture Coevolution and the Nature of Human Sociality, special issue on Human Niche Construction, *Proceedings of the Royal Society B*, forthcoming, available on my web site). This capacity for sophisticated and accurate information transmission led to an increased value of gossip as a mechanism of social control, and thence to a further articulation of human cooperative institutions. The experimental evidence in favor of this view has mushroomed in recent years. First, several studies showed that humans are consummate "indirect reciprocators," willing to cooperate with others who have the reputation for honesty and altruism in collaborative affairs. For a recent overview of the evidence, see M. Milinski, D. Semmann and H.-J. Krambek, "Reputation Helps Solve the 'Tragedy of the Commons'", *Nature* 415 (2002):224-226 and Karthik Panchanathan and Robert Boyd, "A Tale of Two Defectors: The Importance of Standing for Evolution of Indirect Reciprocity", *Journal of Theoretical Biology* 224 (2003):115-126. The role of gossip in promoting reputation-building and indirect reciprocity is demonstrated in a recent article by Ralf D. Sommerfeld, Hans-Jürgen Krambeck, Dirk Semmann and Manfred Milinski, "Gossip as an Alternative for Direct Observation in Games of Indirect Reciprocity," *Proceedings of the National Academy of Sciences* 104,44 (2007):17435-17440. So, all in all, Dunbar's book is highly innovative and basically correct, well worth reading even if the reader is up to date on gene-culture coevolution and indirect reciprocity. I of 2 people found the following review helpful. There is much to learn from this book. By Ursiform I read this book when it first came out, and very much enjoyed it. Oddly enough, I was even able to make use of what I learned from it in my job. There are three main points to the book: 1. There is an observed correlation between neocortex ratio (the ratio of the volume of the neocortex to the volume of the more primitive parts of the brain) and group size among social primates. Note that primate groups achieve cohesion partly through mutual grooming. 2. Dunbar extrapolates this correlation to the human neocortex ratio, with a resulting group size of about 150. While such extrapolation potentially yields nonsense, in this case there is significant evidence that human group size does have a breakpoint at about this number. Hunter-gatherer village sizes, the organization of armies, parish sizes, and many more examples show a natural limit of between 100 and 200 people. 3. Dunbar theorizes that the development of language was encouraged by the need for interaction among groups that were too large for mutual grooming. (Humans are not observed to groom each other the way other primates do, and a group of 150 is too large for this behavior because of the time that would be required.) In his theory verbal interaction--or, colloquially, gossiping--replaced grooming in humans. While Dunbar's theory is interesting, and may be right, even if it is wrong the book is worth reading for the first two points. It is very instructive regarding why groups work the way they do, and why large societies inevitably have bureaucracies. I read this book back in the days when Dan Golden was NASA Administrator, and pushing his "Faster, Better, Cheaper" approach to space exploration. (Which had both successes and failures.) I later had a government employee, who was planning a multi-billion dollar space program, ask me if I thought it could be managed with a "Faster, Better, Cheaper" approach, and I said no, it was too large. Although this seemed obvious, I then asked myself why that would be the case. I eventually put instinct together with Dunbar, and realized that you couldn't run a streamlined program if you couldn't keep the size of your core group to about 150 people who interacted with each other. Later reading of accounts of "Faster, Better, Cheaper" programs that succeeded, and reports from panels set up to examine failures, confirmed this conclusion. So I believe there is a message here for both small businesses and also for larger enterprises trying to decide how to structure programs. This book is thought-provoking and well worth reading.

What a big brain we have for all the small talk we make. It's an evolutionary riddle that at long last makes sense in this

intriguing book about what gossip has done for our talkative species. Psychologist Robin Dunbar looks at gossip as an instrument of social order and cohesion--much like the endless grooming with which our primate cousins tend to their social relationships. Apes and monkeys, humanity's closest kin, differ from other animals in the intensity of these relationships. All their grooming is not so much about hygiene as it is about cementing bonds, making friends, and influencing fellow primates. But for early humans, grooming as a way to social success posed a problem: given their large social groups of 150 or so, our earliest ancestors would have had to spend almost half their time grooming one another--an impossible burden. What Dunbar suggests--and his research, whether in the realm of primatology or in that of gossip, confirms--is that humans developed language to serve the same purpose, but far more efficiently. It seems there is nothing idle about chatter, which holds together a diverse, dynamic group--whether of hunter-gatherers, soldiers, or workmates. Anthropologists have long assumed that language developed in relationships among males during activities such as hunting. Dunbar's original and extremely interesting studies suggest otherwise: that language in fact evolved in response to our need to keep up to date with friends and family. We needed conversation to stay in touch, and we still need it in ways that will not be satisfied by teleconferencing, email, or any other communication technology. As Dunbar shows, the impersonal world of cyberspace will not fulfill our primordial need for face-to-face contact. From the nit-picking of chimpanzees to our chats at coffee break, from neuroscience to paleoanthropology, *Grooming, Gossip, and the Evolution of Language* offers a provocative view of what makes us human, what holds us together, and what sets us apart.

.com Why is it that among all the primates, only humans have language? According to Professor Robin Dunbar's new book, *Grooming, Gossip, and the Evolution of Language*, humans gossip because we don't groom each other. Dunbar builds his argument in a lively discussion that touches on such varied topics as the behavior of gelada baboons, Darwin's theory of evolution, computer-generated poetry, and the significance of brain size. He begins with the social organization of the great apes. These animals live in small groups and maintain social cohesion through almost constant grooming activities. Grooming is a way to forge alliances, establish hierarchy, offer comfort, or make apology. Once a population expands beyond a certain number, however, it becomes impossible for each member to maintain constant physical contact with every other member of the group. Considering the large groups in which human beings have found it necessary to live, Dunbar posits that we developed language as a substitute for physical intimacy. Whether or not you accept Dunbar's premise, his book is worth reading, if only for its animated prose and wealth of scientific information. An obvious choice for science buffs, *Grooming, Gossip, and the Evolution of Language* is a wonderful book for anyone with an inquiring mind and an interest in what makes the world go round. From Library Journal Dunbar (psychology, Univ. of Liverpool) has written a provocative book about the sociology of language use. He begins with a discussion of primate behavior, physiology, and Darwinian evolution. Then he shows the importance of the theory of mind and intentionality in discussing the difference between other species of primates and *Homo sapiens*. He disagrees with Piaget's ideas on human development and develops a different interpretation. He explains the beginning and uses of language as grooming and gossip, highlighted by the abilities and limits of language as part of human life. In the last chapter he gives some implications of his ideas for changing and understanding social dynamics. This fascinating study is recommended for language and psychology collections. ?Gene Shaw, NYPL Copyright 1997 Reed Business Information, Inc. From Booklist It may seem a stretch to connect the origin of speech with the grooming behavior of baboons, but Dunbar's research has persuaded him of such a link. This intriguing book presents his thesis, which he formulated after noting a relationship between maximum group size and the ratio of neocortical tissue to total brain volume. Dunbar then extrapolates to humans, proposing 150 as the upper range of people any one person can personally maintain relationships with via our equivalent of grooming: gossipy chitchat. He admits this will strike most readers as an absurdly low figure, but he argues the case, in evolutionary biological terms, in an elucidating and entertaining manner. How language began fascinates most of us, and consistently delightful are Dunbar's excursions into paleoanthropological anatomy, exigencies of nomadic living, philology of root languages, and the conversational styles at cocktail parties. A relaxed, concise presentation of an evolving theory of linguistic evolution. Gilbert Taylor