Language origins and sexual selection

Ad Foolen

"Do you love me? Don't worry about my feelings. Do you love me?"
"In a way."
"Yes?"
"Yes."
"Old and loathsome as I am?"
"I love ... I love your mind. I love how you expose your mind when you talk."
(Philip Roth, Sabbath’s Theater, p. 244)

1. Banning the ban

During the 16th International Congress of Linguists in Paris, July 20-25 1997, one of the round table sessions was devoted to the topic of ‘Language Origins Research, State of the Art as of 1997’. Being in Paris, it was of course only natural to look back at the formulation of the original statutes of the Société de Linguistique de Paris (SLP), which banned papers on language origins. Bichakjian (1997: 1), in his contribution to the round table, reviewed what had happened when those statutes were first adopted: “It will be recalled that in its original statutes (drafted in 1865 and given ministerial approval in 1866), the SLP had included an article (art. 2) which unequivocally stipulated that ‘[l]a Société n’admet aucune communication concernant ... l’origine du langage’”. According to Bichakjian, “this controversial article was severely criticized from early on, and the society had dropped it from the 1878 version of its statutes”. Despite this revision of the statutes, language origins continued to be thought of as a non-scientific topic, and remained very much in the background of 20th century linguistic research.

The participants of the Paris round table were called to vote on a motion concerning the SLP article. I can’t remember the exact wording of the motion, but the tenor was that the
original ban of the SLP was condemned and that the topic of language origins was considered to be once again ‘salonfähig’. A large majority voted in favor of the motion, but the acceptance of the motion was in fact no more than an acknowledgement of the reality that the topic of language origins research had already begun to reclaim its place in modern science. When exactly this ‘revival’ had started is not easy to pin down in terms of a precise year, but my sense is that the topic made its come back in the 80s, gathered steam in the 90s, and has by now gained the status of a serious scientific enterprise. In the rest of this section, I give some information to support this very global sketch of this piece of recent linguistic history.

In their interview with Chomsky (see Chomsky 1982: 18-25), Riny Huybregts and Henk van Riemsdijk raised the topic of the evolution of language. Chomsky commented that, in his view, language occurred as a result of the ‘coming together’ of a computational capacity and a conceptual capacity. While we share a conceptual capacity with other primates, it is our computational capacity that distinguishes us. Regarding the evolutionary mechanism by which the distinguishing computational capacity came into existence, Chomsky remains agnostic, but his suggestions in this respect go in the direction of viewing language as a ‘by-product’ or a ‘spandrel’, to use Stephen J. Gould’s metaphor, cf. Chomsky (1982: 20): “Imagine that for some unexplained reason a computational capacity developed, maybe as a consequence of some change in brain size or whatever”. Although Chomsky’s views on language origins have been the target of much discussion and critique in the last 20 years (cf. Botha 2001), the fact that Chomsky had in fact expressed an opinion on the topic certainly contributed to it becoming fashionable again (A similar resurgence happened with regard to the field of historiography of linguistics when Chomsky made an excursion into that field with his 1966 Cartesian Linguistics). As a further sign of the times, in 1983, the Language Origins Society (LOS) was founded, and has held annual meetings since 1985.

The 90s started with Pinker & Bloom’s well known target article in Brain and Behavior Sciences. They argued that it was perfectly possible to preserve Chomsky’s generative model of language, with a central place for syntax and a rather rich innate Universal Grammar, and at the same time replace Chomsky’s non-adaptationist stance with a Darwinian view on language evolution, in which gradual development and selection are understood as very influential for the evolution of language. The difference between the two approaches is that, in the adaptationist view, the evolutionary mechanism is guided by natural selection. In contrast, in the non-adaptationist view, the evolutionary mechanism is guided by the processes of cultural transmission, such as imitation and instruction. This model of language evolution has been widely accepted by linguists, and has become the cornerstone of modern language acquisition theory.

After a few decades of debate about the nature of language evolution, it is now widely accepted that language is a cultural rather than a biological trait. This has led to a renewed interest in the study of the evolution of language, both from a biological and a cultural perspective. One of the most promising approaches to studying the evolution of language is the use of computational models. These models allow researchers to simulate the evolution of language in a controlled environment, and to test hypotheses about the relationships between language and biology.

The quest for understanding the evolution of language is a complex and multifaceted one, and there is still much to be learned about the processes that govern the development of language. However, the recent resurgence of interest in the topic has led to a wealth of new insights and discoveries, and has opened up new avenues for research in this fascinating field.
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This article was very influential, in that it stimulated linguists to take the application of Darwinian views to the evolution of language seriously and to come up with theories of language origins that differ from those of Chomsky. And, as in the 80s, there were other signs of the growing interest in the topic of language evolution: in 1996, the first *Evolution of Language Conference* took place in Edinburgh, and it has met biannually since then (in 2002 it takes place at Harvard); and in 1997, the same year the round table in Paris took place, the journal *Evolution of Communication* (published by John Benjamins) was founded.

After the turn of the Millennium, the European Science Foundation launched a call for proposals devoted to 'The origin of man, language and languages' (see the website of the ESF, http://www.esf.org/human). This program is supported by the science foundations of different European countries, a fact that can be interpreted as a sign that the evolution of language is now considered to be a serious enterprise by a broad scientific community, cf. the following quote from the ESF 'Call for proposals':

> This multi-disciplinary programme will focus on the question of the co-evolution of modern humans and language through research at the European level. Until recently, the study of the origin of language was considered too speculative and insufficiently anchored in empirically based studies to merit serious scientific attention. However, in recent years new data have been collected in several disciplines, which have led to interpretations yielding new insight into the emergence of anatomically modern humans and the related issue of language origin.

The question of language origins has been central to Bernard Bichakjian’s thinking and research of at least the last 5 years. His interest in the biological evolution of language flowed naturally from his work on the historical evolution of language; see Bichakjian (1988). As I share his interest, I decided to devote this paper to some of the recent discussions in this multidisciplinary field. In section 2, I deal with some current controversies that linguistics can contribute to. In section 3, I will concentrate on a topic that
I have hardly seen being discussed up till now, namely the possible role of sexual selection in language evolution.

2. Main-stream and minority views on the evolution of language

As is to be expected in a field that is rather new, or at least recently renewed, there is ample space for all kinds of ideas, heading in all kinds of (speculative) directions. It is not easy to determine which of the current ideas and proposals are mainstream and which are less so. In what follows, I will point out some of the ideas that appear to be rather widely accepted, but which I believe, can be relativized or even replaced by ideas that (still) belong to minority views.

2.1. Exaptation, creation, or adaptation?

I have the impression that Chomsky’s idea that the evolution of language should be interpreted in terms of exaptation (in the sense of Stephen J. Gould) has lost mainstream status, at least since Pinker & Bloom (1990). They argued that language is indeed, as Chomsky claims, a unique phenomenon, but that this does not mean that one has to appeal to spandrels, cooptation, or any other view that sees language evolution as a by-product of some other process. However, Pinker & Bloom, and others after them, did not, and could not, prove that Chomsky was wrong (see Botha 2001). They simply argued that it was possible in principle to embed hypotheses about language evolution in a traditional Darwinian adaptationist framework; this move was apparently found attractive enough by most researchers for it to gain mainstream status.

In searching through the literature, I came upon a rather disturbing paper, one likely founded on creationist ideas. In that text, Chomsky’s stance against a Darwinian approach to the evolution of language is presented in the context of a refutation of a scientific approach to human origins in general, cf. the following quote, written by Christensen (2001: 24), a Director of the English Language Study Center at Southern Utah University:
At least one Darwinian premise has lost some credibility at the hands of linguist Noam Chomsky, who has insisted on the utter uniqueness of human language. With great intellectual force, Chomsky has argued that grammatical use of language, even in children, reflects innate ‘deep structures’ peculiar to humans and radically unlike anything observed in animal behavior. Contra Darwin, Chomsky declares there is ‘no substance to the view that human language is simply a more complex instance of something found elsewhere in the animal world. Neither physics nor biology nor psychology gives us any clue as to how to deal with these matters’, he declares. Chomsky has won a wide hearing for his views; indeed, it is by invoking the authority of Chomsky that psychiatrist Willard Gayllin rejects claims ...

Of course, Chomsky would never endorse the twist that his ideas are given here, but it is clear that his opposition against a Darwinian approach to the study of the evolution of language allows his views to be eagerly adopted in anti-evolutionary circles. In the following, I will go with the now main-stream view that language crucially evolved through a Darwinian process, but the question which Darwinian process it was, will be discussed in section 2.4.

2.2. Syntax or semantics?

In investigating the evolution of a biological characteristic, it is of course important to first have an adequate description of that property. For most human characteristics, such as vision, bipedalism, duration of pregnancy, etc., we can assume that their present form is more or less the same as when they first evolved in the early times of our species. But language is of course not a constant phenomenon; it has continued changing throughout human history. However, there is still a tendency among linguists to uniformitarianism (cf. Bichakjian 1997, section 3), i.e. to assume that language or languages as we know them in our time do not differ in any essential way from language as it was in prehistoric times. To test this view, one would want to look back in time as far as possible, but unfortunately, the comparative-historical method does not allow us to go back much further than 12,000-
14,000 years BP, and in addition, this time depth is only available for the Afro-Asiatic language family, based on inscriptions going back to before 2000 BC (cf. Renfrew 2000). If we assume language monogenesis and if it is true that our species started to migrate out of Africa about 150,000 years ago, then it is clear that the comparative method does not reach back far enough. But already the insights reached by application of the comparative method make us cautious in ascribing present day properties of languages to the earlier forms of human language. I would like to illustrate this by looking at syntax and its place in the organization of language. In present-day Indo-European languages, conventionalized, non-transparent syntax plays a rather central role in the system. But this has not necessarily been always the case, cf. Bichakjian (1988: 156):

The original organization of the simplex sentence cannot be known with certainty, but there seem to be reasons for believing that, in its earlier phases, the syntax of the protolanguage was organized along cognitive lines. Through a process that is still going on (...) the original distinctions have become supplanted by grammatical ones. The cognitive agent/patient distinction, still present in part in ergative languages plays a much smaller part in the nominative languages, where the grammatical distinction between subject and object prevails.

Part of the success of Pinker & Bloom’s paper was that Chomsky’s view of the universal centrality of syntax in language was preserved. If Bichakjian is right, and if we free ourselves from uniformitarianist thinking (Bichakjian 1997 encourages us to do so, see in particular section 3 of that paper), we might accord cognition and semantics a much more central place, and consider syntax (in its present day form) to be the result of historical processes, for example processes of routinization and automatization as they take place in and through language use, cf. Haiman (1998). Following this line of thinking, much of syntax must be accorded the status of an epiphenomenon. And this has of course consequences for our view of what exactly evolved in the process of the evolution of language. What has to be explained then in terms of biological evolution is primarily semantic complexity (cf. Schoenemann 1999), instead of a Chomskyan computational capacity.
Bichakjian has for a long time been very critical of the generative tendency to assume a rich Universal Grammar, full of syntactic principles, as the innate linguistic property of our species, cf. Bichakjian (1988: 38): “I believe no particular rule of grammar is innate, and that only the ability to use and process grammatical rules, along with the ability to perceive and produce patterns of discrete speech sounds, is inborn”.

I will not pursue the evolution of our phonetic-phonological abilities here. Let me only say that the competition between ease of production and perception on the one hand, and the need for sufficient richness in informative distinctions on the other, seems to be central in the evolutionary and historical shaping of phonological systems, cf. Haspelmath (1999). In such a view, considering ‘processing ease’ and ‘expressive richness’ as competing and shaping motivations, we do not have to assume an elaborate system of innate phonological rules any more than an innate system of syntactic rules.

With regard to syntax and semantics, I will follow the line of thinking in which syntax is not accorded the central place that it is given by Chomsky, and by Pinker & Bloom. In my view, then, there is a strong link between the evolution of human cognition (perception, conceptualisation) and human language. Under this view, an evolutionary theory of language that accounts for this ‘co-evolution’ is favoured over one that postulates a separate computational competence as the essential prerequisite of language evolution.

2.3. Information or relation?

In linguistics in general the informative function, ‘Darstellung’ in Bühler’s terms, is considered to be the central function of language. This is also the prevailing view in present-day main-stream thinking about language evolution. The possibility of sharing useful information with survival value is considered as the central function and driving force behind the evolution of language, cf. Cox (2000: 23): “As a social species, it would have been highly advantageous for members of our communally living ancestors to have a system for sharing information so that together they could better exploit their environment”. This view has been often used as an argument in favor of the (evolutionary) development of complex syntax, cf. again Cox (2000: 26):
In their environment, it would have been imperative for our ancestors to have been precise in what they were saying. It would have been essential for a syntactic system to have properties that allowed for niceties in expression that come from embedding and relative clause formation. It would have been crucial for the survival of early man to be able to distinguish between ‘that region has animals that you can eat’ and ‘that region has animals that can eat you’; to be able to refer to different time periods and to be able to understand references of position and space.

Robin Dunbar (1996) was one of the first thinkers on language evolution who relativized this purely informative view by proposing that language use might instead be seen as a substitute for grooming, which plays an important role in establishing social cohesion in groups of other primates. In particular, gossiping would function as a form of human ‘grooming’, and Dunbar found that indeed a high proportion of everyday language use is devoted to talking about other people (cf. Dunbar et al. 1997). If Dunbar is right, then we should at least accord the social function of language a certain role in the process of language evolution. The reception of Dunbar’s ideas in linguistic circles has been hesitant, however, partly because his writing shows lack of familiarity with the history of linguistics. For example, any reference to Malinowski, who stressed the social, bonding function of language as early as 1923, is missing. Today, Malinowski’s ‘phatic communion’ is considered to form at least part of the picture of language functions, cf. Haiman (1998: 99): “What the individual spends most of his spoken moments doing is providing evidence for the fairness or unfairness of his current situation and other grounds for sympathy, approval, exoneration, understanding, amusement. And what his listeners are primarily obliged to do is to show some kind of audience appreciation. (...) For Goffman (who follows Malinowski’s famous 1923 account of phatic communion), the central goals of conversation are not to give information at all but to get strokes and save face”.

In section 3, I will pursue a view of the evolution of language that, like Dunbar’s, does not follow mainstream linguistic and evolutionary thinking, according to which information sharing with survival value is still considered as the main, or even the sole function of language.
Adaptationist thinking typically considers natural selection to be the mechanism that makes evolution possible. The natural environment is the hand that favors certain variants and disfavors others. This selection by nature’s hand skews evolutionary development, driving it in a particular direction.

It is often forgotten that for Darwin, one of the biological sexes, in particular the female sex, can itself play a strong selective role. If females develop a preference for certain properties in the other sex, than those properties can easily propagate in the species. Whereas Darwin discussed the role of natural selection in his most well known book of 1859 (On the origin of species by means of natural selection), 12 years later he wrote The descent of man, and selection in relation to sex (1871), in which the role of sexual selection was accorded a central place.

That the role of sexual selection comes less easily to mind when we think of Darwin’s work, might be a reflection of the fact that, in comparison to natural selection, the idea of the significance of sexual selection has had a much less favorable reception in the history of science. In a time when women were not even allowed to participate in the selection of representatives in politics, it was inconceivable that women could have played a major role, by their selective intervention, in the process that led to ‘us’. As Russet (1989: 89) found, in her research on the way 19th century science looked at women, “sexual selection, despite its impeccable credentials, does not appear to have won the minds of the majority of biologists by the turn of the century” [1900 is meant here, of course, AF]. During the 20th century, things did not change all that much. A new century had to arrive before sexual selection received the renewed attention that may have enough momentum to keep it on the scientific agenda. In 2000, Gangestad & Simpson published a target article in Behavioral and Brain Sciences, in which they paid due attention to the role of sexual selection. According to Gangestad & Simpson (2000: 574),

[sexual selection] refers to discrepancies in reproduction rates among individuals resulting from the various ‘advantages’ in mating, independent of advantages resulting from differential survival. Evolutionary biologists have traditionally studied
the effects of sexual selection on two kinds of adaptations: (a) intrasexual competitive abilities, and (b) specialized signals that appeal to members of the opposite sex.

A proverbial example of the development of type (a) 'intrasexual competitive abilities' is the antlers of deer, and an example of the (b) type of adaptation is the peacock's tail.

Now that sexual selection is on the evolutionist agenda again, it is tempting to ask whether this selectional mechanism could have played a role in language origins. Dunbar's idea that the role of social factors should be considered more closely in the field of language origins research encourages us to consider other functional pressures not directly linked to the view of communication as information sharing for direct survival needs.

In my search for relevant literature on this point, Dalenoort (1999: 62) was the first author that I found who put forward the idea that sexual selection might indeed have played a role in the development of higher communicative abilities: "There may have been one selective force that could have been dominant for symbolic communication: sexual selection. In competition between males, language could have prevented a fight that one is likely to lose, or the opposite". Note however, that in this evolutionary scenario, selection is still the domain of the male. If the males are able to communicate with each other instead of fighting and thereby loosing much energy or worse, then they both enhance their possibilities to reproduce. What we have here is in fact an example of Gangestad & Simpson's type (a) sexual selection: 'intrasexual competitive abilities'. The question remains, however, whether language could (also) be seen as an example of their type (b) selection: 'specialized signals that appeal to members of the opposite sex'.

In summary, section 2 has led us to consider a view of the state of language as it originally evolved in which syntax did not play a primary structural role, and in which the primary function was not information sharing for practical ends. And the evolutionary mechanism that led to that original language was sexual selection of the type in which the opposite sex had the role of the selector.

I am aware that with this view, we have left the territory of mainstream ideas. I did however find some support for this minority view. In particular I found the book The
Mating Mind, by Geoffrey Miller (2000) an interesting attempt to analyse different properties of the human mind, including language, as the result of the type (b) form of sexual selection. The next section will be devoted to a summary of the way Miller considers the process of sexual selection in relation to the evolution of language.

3. Fun and fitness

Geoffrey Miller is a young scientist (born in 1965), who works in the exciting new discipline of evolutionary psychology. The goal of the research in this field is to explain properties of the mind, and of behavior that is based on those properties, from an evolutionary point of view. Particularly challenging are those properties the survival value of which is not clear at first sight, such as play, humor, or homoerotic behavior (for an evolutionary psychological explanation of the latter, see Muscarella 2000). Human language could be classified among those challenging properties. For us, living in an information society in which communication of a huge amount of detailed information is a matter of daily survival, it is difficult to imagine a society which might have gotten along perfectly well without a sophisticated communication system. In the small simple societies of early humans, it might, however, have been sufficient to have understood the intentions of other humans. And those intentions could have been communicated by simple signs. If that was the case, why did a more complex system of signs like ‘language’ develop?

In trying to answer this question, Miller (2000: 230), makes a, at first sight, surprising analogy with the human penis: “Adult male humans have the longest, thickest, and most flexible penises of any living primate”. A purely physical functional view of evolutionary development cannot explain this property. According to Miller (2000: 236), an explanation is possible if we take the ‘psychological value’ of such a property into consideration, in particular the value it has for the female who makes the sexual selection:

Female hominids may not have preferred thicker, longer, more flexible penises per se. They may simply have liked orgasms, and larger penises led to better orgasms by
permitting more varied, exciting, and intimate copulatory positions. This rather contradicts the view of the penis as a symbol of male domination. If we were a species in which males dominated the sexual system, we would have one-inch penises like dominant gorillas. The large male penis is a product of female choice in evolution. If it were not, males would never have bothered to evolve such a large, floppy, blood-hungry organ. Ancestral females made males evolve such penises because they liked them.

Miller uses the evolution of the male sexual organ as a model for the evolution of mental organs (2000: 237):

Physical organs shaped by sexual choice can (...) be seen as metaphors for mental organs shaped by sexual choice. (...) In both cases, I argue that the organ evolved for the stimulation it can deliver, not to solve some straightforward physical problem of insemination or toolmaking. (...) Perhaps our ancestors did not favor intelligence and creativity directly, but indirectly: for how they contributed to having a great time with someone.

In this view, language, intertwined with intelligence and creativity, evolved through the mechanism of sexual selection whereby the organ’s potential to entertain was the functional pressure. In chapter 10 of his book ('Cyrano and Scheherazade’, p. 341-391), Miller presents a series of observations in support of such a view of language. I will present his ideas by way of a ‘textual selection’ from that chapter.

Miller starts out with the observation that publications about the evolution of language often fail when subjected to real adaptationist reasoning, even if a Darwinian perspective is endorsed (p. 345):

More has been written about language evolution than about the evolution of any other specific human mental ability. However, very little of this writing has been genuinely adaptationist in the sense of assessing particular fitness benefits that could
have driven the evolution of language. Very few ‘theories of language evolution’ identify particular selection pressures that could favor the gradual accumulation of genetic mutations necessary to evolve a complex new mental capacity that has costs as well as benefits.

One reason for this unsatisfying state of the art has to do with a property of language itself (p. 346):

The trouble with language is its apparent altruism. Most speech, except for commands and questions, appears to transfer potentially useful information from speaker to listener. Speaking costs speaker time and energy, and brings information benefits to the listener, so it looks altruistic. But, as we saw in the last chapter (on the evolution of such properties as kindness, generosity, morality, AF), evolution tends to avoid altruistic behavior.

A similar critical point had been made earlier by Dawkins and Krebs with regard to the received view on animal signaling (p. 346):

In their seminal 1978 paper, Richard Dawkins and John Krebs argued that animals should evolve to produce signals only when signaling gives them a net fitness benefit that helps their own genes replicate at the expense of other genes. Evolution cannot favor altruistic information-sharing any more than it can favor altruistic food-sharing. Therefore, most animal’s signals must have evolved to manipulate the behavior of another animal for the signaler’s own benefit.

Miller sees three possible selfish uses of language (p. 349):

To explain language evolution, then, we need to do the same things we did for morality: find a hidden survival or reproductive benefit in the apparently altruistic act of speaking. As with morality, there are three basic options for the hidden benefit: kinship, reciprocity, or sexual selection. The fitness benefits of speaking must have
come from giving useful information to a relative, sustaining a mutually beneficial information-trading relationship, or attracting a mate. I am sure all three were important, and I am not going to claim that sexual choice was the only selection pressure that shaped human language. However, I do want to highlight some features of how people talk that are not very consistent with the kinship and reciprocity theories.

If information transferred by language is primarily valuable for the hearer (for kinship or for a partner in the business of information exchange, and thus only indirectly for the speaker and his genes), one would expect that listening is what people prefer to do. But, as Miller observes (p. 350):

This does not describe the human species as I know it. Watch any group of people conversing, and you will see the exact opposite of the behavior predicted by the kinship and reciprocity theories of language. People compete to say things. They strive to be heard. When they appear to be listening, they are often mentally rehearsing their next contribution to the discourse rather than absorbing what was just said by others. Those who fail to yield the floor to their colleagues are considered selfish, not altruistic. Turn-taking rules have emerged to regulate not who gets to listen, but who gets to talk.

Against this background, Miller constructs his argument that language evolved for verbal courtship. “The idea that language evolved for verbal courtship solves the altruism problem by identifying a sexual payoff for speaking well” (p. 353). He supports his argument by observing that language is central in human courtship, both quantitatively and qualitatively. In the first months of romantic contact, people talk a great deal; they choose carefully what to say and how to say it; if there is no common language, courtship usually breaks down; and so on. Among his many observations is the following (p. 382):

Women commonly complain that their sexual partners do not talk enough to them. If language evolved through sexual selection, and if sexual selection operates more
powerfully on males than on females, you may legitimately wonder why your boyfriend or husband cannot share his feelings with you. Is it possible that, his early courtship efforts having brought success, he no longer feels driven to be as verbally energetic, interesting, self-disclosing as he was before? The man who used to talk like Cyrano now talks like a cave-man. Once he was a poet, now he is prosaic. His verbal courtship effort has decreased.

In contrast to the peacock’s tail, language evolved, of course, in both males and females. It does not make much sense for a male to develop language if a female is not able to understand what he is saying. This understanding requires linguistic abilities, and if the female wants to evaluate the communicative performance of the male, her abilities might even have to be better than his. Moreover, as Miller argues, verbal courtship is not unidirectional, it is also practiced actively by women, although the time span of it seems different from that of men’s verbal courtship (p. 383):

Because verbal courtship is mutual, we might expect men to feel equally frustrated by women lapsing into habitual silence as a relationship ages. This seems less often lamented, either because men develop less hunger for conversation, or because women maintain their verbal courtship effort at a higher pitch for longer.

Earlier we saw that male mate choice [i.e., a woman’s choice of the (same) male partner, A.F.] grows stronger later in courtship, as men may be tempted to abandon a woman after she has become pregnant, and search for a new woman. In the Pleistocene age, females who could keep a useful male around for longer would have enjoyed more comfortable lives, and their children would have prospered. Through their courtship efforts, ancestral females could maintain male sexual commitment and paternal investment in their offspring. Sexual selection through male mate choice created modern women’s drive to keep men sexually attracted to them over a long term. They do this, in part, by continuing to use verbal courtship long after men might prefer to read the newspaper.
Up till now, we have only seen that conversational behavior is an important part of human courtship behavior. But is it possible to point out specific properties of language or language use that might support the sexual selection view? Miller does not go into great linguistic detail, but he makes a start by mentioning some striking facts.

Regarding conversational content, he reflects on Dunbar's observation (Dunbar et al. 1997) that much of human conversation consists of gossip. In Dunbar's interpretation, gossiping is part of social networking. Miller does not reject that view, but he shows that gossiping fits a sexual selection perspective as well (p. 367):

The social content of human speech may have no direct social function: it may simply reflect the optimal way to excite a mind already geared to social information, as a form of socially and sexually attractive entertainment. The better entertainers benefit by attracting better friends and mates. Gossip may exploit the social obsessions of the human mind as much as soap operas and romantic films do.

Moreover (p. 367):

If the gossiper usually knows some news that the listener does not know, the gossiper may have privileged access to secrets, or a wider social network, or a better social memory, or friends who themselves have privileged access to social information. That is, the gossiper must have high social status, and high social intelligence. This is how gossip can function as a reliable indicator of social status and social skills. Gossip may have evolved as a status display, favored by sexual selection and other forms of social selection.

As to linguistic form, Miller discusses two properties of human language that cannot be explained from a purely informational point of view. A first property is the relatively large vocabulary. The average adult English-speaker knows about 60,000 words. For practical purposes, such a huge vocabulary is unnecessary. Why do we bother to learn so many rare words that have practically the same meanings as common words, if language evolved to be
practical?" (p. 370). I quote Miller's analogy with bird song as his answer to the question (p. 372):

Most bird song evolves under sexual selection through mate choice. Most birds produce a fairly small repertoire of courtship songs, but in a few bird species, such as marsh warblers and nightingales, the number of distinct songs seems to have undergone some sort of explosive evolution, resulting in repertoires of over a thousand distinct songs. In these species repertoire size itself became a criterion for mate choice, with males who sing more songs being perceived as more attractive. Above-average repertoires may work as reliable indicators of a bird’s age, learning ability, intelligence, brain size, brain efficiency, or general fitness. Males with larger repertoires appear to sire healthier offspring, suggesting that repertoire size may be an indicator of heritable fitness.

The other formal aspect of language behavior that Miller points to is poetry, in particular the formal constraints that are typically part of poetic language use (p. 379-80):

Poetry, in my view, is a system of handicaps. Meter, rhythm, and rhyme make communication harder, not easier. They impose additional constraints on speakers. One must not only find the right words to express meaning, but (...) the right words with the right sounds in the right order and the right rhythm. These constraints make poetry more impressive than prose as a display of verbal intelligence and creativity. (...) In most cultures a substantial proportion of poetry is love poetry, associated with courtship effort. Poetry often overlaps with musical display, as in folk music with rhyming lyrics. Sung poetry demands the additional skill of holding a melody while maintaining meter, rhythm, rhyme, and line-number norms.

Reading the above series of quotes, you may have noticed that the evolutionary function that Miller ascribes to the original language shifts gradually from an entertainment role to a fitness indicator. So are there two different functions involved here? What is the relation between perceiving a fitness indicator and experiencing pleasure from that indicator? In the case of the peacock's tail, these two functions seem to be present at the same time: the hen
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likes to look at the tail, which is primarily a fitness indicator. But in the case of the human penis, the enlargement of the organ seems not to have been triggered by fitness indicating pressure; in Miller's view, it had to do purely with selecting for a property that provided pleasure. Miller does not tell us how, in the case of language, the entertaining and the fitness indicating function should be seen in relation to each other. A possible scenario might be that language started out as a fitness indicator, which then turned out to be a very entertaining ability, which in its turn led to acceleration in the selection for a more sophisticated version of the same ability. Perhaps we first have to better understand the role of pleasure in evolution, before we can make any significant progress with regard to this potential weak point in Miller's analysis.

4. Farewell

In the preceding sections, I have often used the phrase 'language origins', in the plural. I thus followed the practice of LOS, the Language Origins Society, and also that of Magritte, who gave his painting of 1955 the title 'Les origins du langage'. What we call 'language' is a conglomerate of different abilities (an entertaining poet does not necessarily have a clear pronunciation) and its origin was probably the result of multiple functional pressures. But I hope to have shown that one of these pressures might very well have resided in sexual selection for communicative abilities, be they fitness indicators and/or providers of entertainment. In this approach, aspects of language (vocabulary size, poetics) come to the foreground that in an approach in which the informative function is considered to be evolutionary primary seem to be less relevant.

The reader of this paper may have wondered what the quoted dialogue at the beginning of the text had to do with the topic of language origins. The preceding section will, I hope, have made clear the point of that opening quote. In Philip Roth's novel, the older professor Mickey Sabbath wonders whether and why his student Kathy Goolsbee loves him. Her answer to his question illustrates nicely the type of feeling that we must assume as a driving force in...
force in the sexual selection process that led to the sophisticated communication system we call language: “I love your mind. I love how you expose your mind when you talk”.

One would expect that Mr. Sabbath would feel flattered by Kathy’s admiration for his higher order qualities. But he (re)acts as if he is not:

My mind? Well, that is quite a revelation. I thought you loved my ancient penis. My mind? This is quite a shock for a man of my years. Were you really only in it for my mind? Oh, no. All the time I was talking about fucking, you were watching me expose my mind! Paying unwanted attention to my mind! You dared to introduce a mental element into a setting where it had no place. Help! I’ve been mentally harassed! Help! I am a victim of mental harassment! God, I am getting a gastrointestinal disorder! You have extracted mental favors from me without my even knowing and against my will! I have been belittled by you! My dick has been belittled by you! Call the dean! My dick has been disempowered!

In Geoffrey Miller’s view, the penis would never have evolved to what it is now if it had only been in the interests of men. The same might very well apply to language and mind if the reaction of Mickey Sabbath to Kathy’s revelation reflects something of the feeling of primitive man. In hindsight, we can conclude that the selective forces of evolution must have been stronger than all the resistance that primitive males might have felt against female preferences.

Later in his novel (p. 331), Philip Roth has Michelle, the wife of Mickey’s old friend Norman, make a similar admiring remark regarding Mickey’s verbal gifts: “You have a great eloquence at your command”. This time Mickey reacts: “I learned early on that people seem more easily to pass over how short I am when I am linguistically large”.

A linguistically large colleague, linguistically large in the sense of Mickey Sabbath and linguistically large in the sense of linguistics, is leaving the ranks of the Nijmegen Faculty. I trust, that this will give him more time to continue his interesting inquiries into the origins of language. If that is the case, his leaving us is easier to accept.
References

Bichakjian, Bernard H.
1997 “Language origins and language evolution research: From prohibition to possible contribution.” In: *Proceedings of the 16th International Congress of Linguists*. Oxford: Pergamon. (CD-rom, paper nr. 0475)

Botha, Rudolf P.

Chomsky, Noam

Cox, Melissa

Christensen, Bryce J.

Dalenoort, G.J.

Darwin, Charles

Dawkins, R. & J.R. Krebs

Dunbar, Robin
Dunbar, R., A. Marriot & N. Dunand

Gangestad, Steven W. & Jeffry A. Simpson

Haiman, John

Hasepmath, Martin

Malinowski, Bronislaw

Miller, Geoffrey

Muscarella, Frank

Pinker, Steven & Paul Bloom

Renfrew, Colin

Roth, Philip
Russet, Cynthia Eagle

Schoenemann, P. Thomas