

Origin of language and origin of languages

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The question of monogenesis vs. polygenesis of human languages was essentially neglected by contemporary linguistics until the appearance of the research on the genetics of human populations by L. L. Cavalli-Sforza and his collaborators, which brought to light very exciting parallels between the distribution of human populations and that of language families. The present paper highlights some aspects of the history of the problem and some points of the contemporary discussion. We first outline the “Biblical paradigm”, which persisted until the 18th century even in scientific milieus. Then, we outline some aspects of the 19th century debate about monogenesis vs. polygenesis of languages and about the relationships between languages and human populations: in particular, we will discuss the views of Darwin on the one hand and of some linguists on the other (Schleicher, M. Müller, Whitney and Trombetti). It will be seen that their positions only partly coincide; at any rate, it will be shown that Darwin was partly inspired by the problems of the genealogy of languages and that the linguists, for their part, took account of Darwin’s views. Turning to today’s debate, we first present the positions of the linguists arguing for monogenesis, namely J. Greenberg and M. Ruhlen, as well as the criticisms raised against their methods by the majority of linguists. Other scholars, such as D. Bickerton or N. Chomsky, essentially argue, from different points of view, that the problem of monogenesis vs. polygenesis of languages is a “pseudo-problem”. We however think that, although the question cannot be reasonably solved by linguistic means, it cannot be discarded as meaningless: it is an anthropological rather than a linguistic problem. We present some reflections and suggestions, in the light of which the monogenetic hypothesis appears as more tenable than the polygenetic one.

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1. Preliminary remarks

“Philosophical tradition included under the label ‘origin of language’ two distinct topics: (1) the origin of language faculty and (2) the origin of languages” (Formigari 2013:19).¹ Today, the two problems are generally kept separate from each other: the former concerns the emergence of a biological capacity, the latter a historical phenomenon.² Given these two different issues, the term ‘protolanguage’ as used in linguistic literature has two meanings (cf. Mufwene 2013:17): it can refer to the early stage of human language (call it protolanguage₁) or to the common ancestor of all languages belonging to the same family (or, possibly, of all world languages); let us call this meaning protolanguage₂. The issue concerning the second meaning of ‘origin of language’ and of ‘protolanguage’ can be formulated as follows: do all world languages derive from one single protolanguage₂ (*monogenesis*) or do the several language families (e.g., Indo-European, Afro-Asiatic, Altaic, etc.) each derive from a different protolanguage₂ (*polygenesis*)? While the problem of the origin of language as a human capacity is currently a topic of much discussion, the problem of monogenesis vs. polygenesis of languages might appear to be somewhat marginal, but this is not completely true. Indeed, the research into the genetics of human populations by L.L. Cavalli-Sforza and his collaborators, which brought to light very exciting parallels between the distribution of human populations and that of language families (see, e.g., Cavalli-Sforza et al. 1988; Cavalli-Sforza 2000), has sparked a renewed interest in this topic. The above-quoted works, although not explicitly, hint at the monogenesis of human languages: this is essentially because the “genealogical tree” of human populations overlaps to a large extent with that of human languages sketched by Greenberg and Ruhlen, two scholars who argue for monogenesis (see Ruhlen 1994). This conclusion, however, is far from being generally shared, as will be seen in Section 4, below.³

In the present paper, I will attempt both to give a historical sketch of the question of the monogenesis vs. the polygenesis of languages and to present some reflections on the current debate. After a section devoted to what I call the “Biblical

1. Throughout this paper, I will resort to English translations where available. If the name of the translator is not indicated, translations are mine.

2. As Berwick et al. (2013:89) state, “languages do change over time, but this describes change within a single species and is not to be conflated with the initial emergence of language itself”.

3. According to Mufwene (2013:17), “the dominant trend in genetic linguistics, which inspired Cavalli-Sforza (2000) but had been disputed by Trubetzkoy (1939), has indeed been for monogenesis, positing a protolanguage from which all the members of a language family can be derived”. Actually, Trubetzkoy (1939) does not deal at all with the problem of monogenesis vs. polygenesis of languages, but it is a proposal for defining the Indo-European linguistic family on typological, instead than genealogical, criteria.

paradigm” and to the reasons for its persistence throughout the centuries (Section 2), I will present the main threads of the discussion about monogenesis vs. polygenesis during the 19th century and the early 20th century (Section 3). Finally I will discuss some aspects of the current debate and present some proposals of my own (Section 4). The historical part could be interesting in itself, but I think that it would also be useful to better frame the current debate, by enlightening its roots.

2. The “Biblical paradigm” and the reasons for its persistence

What we call “Biblical paradigm” is an interpretation developed during the Middle Ages of the tale contained in the book of *Genesis*. In Chapter 2, God and Adam speak with each other: since the language of *Genesis* is Hebrew, it was assumed that Hebrew was the protolanguage in both senses explained above, namely the early stage of the language faculty and the single ancestor of all human languages. The diversity of languages would derive from the confusion caused by God when the human species attempted to build the tower of Babel (cf. *Genesis*, Chapter 11). One of the best formulations of such paradigm can be found in Dante’s *De vulgari eloquentia* (book I, Chapter 6): “In this form of language Adam spoke; in this form of language spoke all his descendants until the building of the Tower of Babel [...]. So the Hebrew language was that which the lips of the first speaker moulded” (transl. S. Botterill). Therefore, the origin of the language faculty is identified with the origin of languages and the monogenetic position is automatically implied.⁴

This paradigm persisted through the ages, until Renaissance times at least, but explicit alternatives to it as regards the origin of the language faculty only appeared in the 18th century. One of the most successful was proposed by the French philosopher E. B. de Condillac (1714–1780) (cf. Condillac 1746, part II, section I, Chapter 1, § 1 ff., cf. also Condillac 1775, part I, Chapters 1–8). Condillac’s account runs as follows. As an ecclesiastic, Condillac could not openly dispute the authority of the Bible: He then presented his hypothesis on the origin of language as a mere assumption, alternative to the biblical version. He did not therefore refer to the Garden of Eden where Adam and Eve would have spoken the language given to them directly by God, but assumed “that two children, one of either sex,

4. Besides this “Babelic” explanation, there is another Biblical account of the linguistic diversity, labeled “Noachic”. After the flood, Noah’s three sons (Shem, Cam and Japheth) originated the new populations of the Earth (cf. *Genesis*, Chapter 9): this splitting of peoples would have caused the differentiation of languages. Such Noachic account developed since the Renaissance times, as a more “secular” alternative to the Babelic one (see Tavoni 1998).

sometime after the deluge, had gotten lost in the desert before they would have known the use of any sign” (Condillac 1746, Engl. transl.: 113). These children in a desert have some feelings: e.g., the feeling of hunger is linked to an object which could satisfy it. When one of the children has such a feeling, s/he starts shouting and gesticulating. The other child is therefore stimulated to satisfy the need of her/his partner by providing her/him with the object s/he desires. As time elapses, the children began to link such shouts and gestures to the desired object: this is the first form of language, called *langage d'action* by Condillac. The signs of *langage d'action* became familiar: the children “little by little [...] succeeded in doing by reflection what they had formerly done only by instinct” (id.: 115). Signs belonging to *langage d'action* allow us to establish and to extend the knowledge given to us by perception (the only source of knowledge, according to Condillac). With subsequent generations, *langage d'action* was gradually replaced by a much more complex means of communication, the *langage des sons articulés* (‘language of articulate sounds’; id.: 116).

Rousseau (1755) refers to Condillac’s work as that which gave him “the first idea” of how language originated. He raises, however, what we could dub “Rousseau’s problem”, which goes as follows: “if men need speech to learn to think, they must have stood in much greater need of the art of thinking, to be able to invent that of speaking” (Rousseau 1755: 77; transl. G.D.H. Cole). Condillac more or less implicitly assumed a kind of “virtuous circle” between language and thought: the latter allows the former to pass from instinct to reflection, and the former allows the latter to develop and clarify itself. Rousseau, on the contrary, seems to feel this circle as vicious rather than virtuous.

A few years later, the grammarian N. Beauzée (1717–1789), in the item *Langue* written for Diderot’s and D’Alembert’s *Encyclopédie*, explicitly comes back to the Biblical paradigm in order to overcome “Rousseau’s problem”. He firstly states that

[if] men begin to exist without speaking, they will never speak. When one knows a few languages, one may easily invent another; but if one does not know one, one will never know one, unless one hears someone else speak. (Beauzée 1765: 252)

It was God who gave the first human couple the language faculty and the possibility to exercise it, by speaking Hebrew. Beauzée therefore concludes by asking the following rhetorical question:

Is it not clear that only one language existed until the moment when God wanted to put an end to their undertaking, *unum labium omnibus*? [...] That the means he used to accomplish this was the division of the common language [...]?. (id.)

Two problems had to be solved: the origin of the language faculty and the relationships between the assumed protolanguage and extant languages. Beauzée’s resort

to the Biblical account offered a solution to both problems: the language faculty was given by God to Adam and Eve by speaking to them in Hebrew; the Babelic confusion accounts for the diversity of languages. The two meanings of 'protolanguage' we have quoted at the beginning of the present paper still coincide.

3. Some 19th century and early 20th century discussions: The problem of the origin of language and the theory of evolution

The Biblical account, however, was abandoned at the beginning of the 19th century, especially by Fr. Schlegel (1772–1829). Schlegel (1808) advanced the hypothesis that Sanskrit was the parent language of all Indo-European languages, which, according to him, were essentially different from all other world languages, being 'organic', while the latter were 'mechanical'.⁵ This assumption necessarily led him to solve the problem of language origin in a way that was contrary to the Biblical paradigm. Schlegel admitted "the spontaneous origin of languages generally", but at the same time he rejected the theory that all languages "were originally similar, and equally rude and irregular in their first construction" (Schlegel 1808; English translation: 455). By means of his hypothesis of the polygenesis of the languages, Schlegel also accounts (implicitly) for the origin of the language faculty: humans are endowed with different language faculties because their languages derive from protolanguages which are basically different. The presence of some racist overtones in this view should be evident.

Schlegel's work gave a decisive boost to the birth of historical-comparative grammar of Indo-European languages, which developed during the 19th century through the works of scholars such as Franz Bopp (1791–1867), August Schleicher (1821–1868) and several others. Bopp (like many other linguists working in this field) did not deal explicitly either with the problem of language origin or with that of monogenesis vs. polygenesis of languages. However, scholars such as Schleicher, Max Müller (1823–1900) and William D. Whitney (1827–1894) were rather deeply involved with such issues. It is almost standard to oppose the first two linguists to the third one, since Schleicher and M. Müller held a naturalistic view of language and linguistics, while Whitney pleaded for a socio-historical conception. Actually, matters are less simple, as will be seen in a moment. Another cliché characterizing many handbooks of the history of linguistics (see e.g. Mounin 1974:199) is the assumption that Schleicher's views on language (and,

5. For more information about Schlegel's linguistic thought, see Timpanaro (1977). Cf. also Morpurgo-Davies (2014:66–82), which is the basic reference for the history of 19th century linguistics, then for many of the topics discussed in this section.

after him, M. Müller's) were influenced by Darwin's theory of natural selection. It is certain that Schleicher's theoretical work on language and languages shows amazing affinities with Darwinism, but it was not influenced by Darwin, since Schleicher had already presented his views some years before 1859 (the year of the appearance of Darwin's *The Origin of Species*). In fact, it is Darwin who gets inspired by historical-comparative linguistics, rather than the other way around, as the following passage clearly shows:

It may be worth while to illustrate this view of classification, by taking the case of languages. If we possessed a perfect pedigree of mankind, a genealogical arrangement of the races of man would afford the best classification of the various languages now spoken throughout the world [...] the proper or even the only possible arrangement would still be genealogical; and this would be strictly natural, as it would connect together all languages, extinct and modern, by the closest affinities, and would give the filiation and origin of each tongue.

(Darwin 1859:422)

Hence, according to Darwin, the genealogical tree of human languages should overlap with that of human populations ("races", in the 19th century terminology). Since genealogical classification is based on "the characters [...] which have been inherited from a common parent", as Darwin states two pages before the above (Darwin 1859:420), we can conclude that he assumed a monogenetic position concerning the origin of languages. Darwin (1859) does not deal with the evolution of the man, which is the topic of Darwin (1871), where, moreover, the works of both Schleicher and M. Müller are quoted (cf., e.g., Darwin 1871:56). In this book, while admitting that "articulate language is [...] peculiar to man" (Darwin 1871:54), Darwin concludes by stating "that language owes its origin to the imitation and modification, aided by signs and gestures, of various natural sounds, the voices of other animals, and man's own instinctive cries" (id.: 56). Darwin therefore assumes a continuity between human language and animal systems of communication.

We now turn to the linguists quoted above, namely Schleicher, M. Müller and Whitney. We can first remark that they all clearly distinguish the problem of the origin of the language faculty on the one hand from that of the monogenesis vs. the polygenesis of languages on the other. Both Schleicher (1860:37) and Whitney (1887:201) say that the first problem is not linguistic, but "anthropological". According to M. Müller (1885, vol. 1:392, original emphasis), "it is quite clear that we have no means of solving the problem of the origin of language *historically*". On the other hand, their views on both questions diverge, but while Schleicher and M. Müller agree on the first topic, holding a view opposite to Whitney, on the

second topic (namely, monogenesis vs. polygenesis of languages), M. Müller and Whitney counter Schleicher's position.

Schleicher and M. Müller maintain that language is uniquely human. Schleicher (1865:14–5) writes: “language, i.e. the expression of thoughts by words, is the only exclusive human feature [...] no animal has the ability of directly expressing thoughts by sounds”. In a similar vein, M. Müller (1873a:674) maintains: “[...] whatever animals may do or not do, *no animal has ever spoken*”. He also states:

Mr. Darwin [...] feels the difficulty of language, he fully admits it; but not seeing how much is presupposed by language – looking upon language as a means for the communication rather than for the formation of thought, he thinks it might be in man a development of germs that may discovered in animals.

(M. Müller 1873b: 23)

Whitney, on the contrary, does not exclude a kind of continuity between animal systems of communication and human language: “that the dog and many other animals make no very distant approach to a capacity for language is shown farther by their ability to understand and obey what is said to them” (Whitney 1884:5).

Let us now turn to our second issue, namely monogenesis vs. polygenesis of languages. According to Schleicher (1865:22–3), “it is positively impossible to reduce all languages to one and the same protolanguage. Rather, from the unprejudiced research as many protolanguages result as language families can be distinguished”. Both M. Müller and Whitney counter this decidedly polygenetic position, not excluding the possibility of a monogenesis of languages. The former scholar writes:

not only different dialects, and different languages, but different families of language [*sic*] with different roots for their supply, could thus have sprung from a common source; and to deny the possibility of a common origin of the Aryan and Semitic families of speech, from this point of view, would be simply absurd.

(M. Müller 1873b:20)

Whitney overtly criticizes Schleicher on this point (as on many others as well), maintaining that the latter's statement according to which “it is absolutely impossible to carry back all languages to one and the same original language” is “entirely wrong, and even a complete *non sequitur* from the premises which he himself accepts” (Whitney 1873:325). Whitney, like M. Müller, does not see any difficulty, in principle, in assuming the monogenetic hypothesis:

human languages might well have become as different as we now find them to be, even though all of them descended from the rudimentary and undeveloped dialect of some single original family or tribe.

(Whitney 1884:396)

Both Schleicher and M. Müller discuss the problem of the relationships between languages and “races” (i.e., populations). According to the former scholar, “the natural system of languages is in my opinion at the same time the natural system of mankind” (Schleicher 1865:18). Hence, given Schleicher’s polygenetic assumptions, one can conclude that he also assumes a polygenesis of human populations. M. Müller, on the contrary, states that any of the two hypotheses about the origin of languages, monogenetic or polygenetic, does not imply the same hypothesis about the origin of man, and vice versa:

If it could be proved that languages had had different beginnings, this would in nowise necessitate the admission of different beginnings of the human race. For if [...] we look to language as natural to man, it might have broken out at different times and in different countries among the scattered descendants of one original pair. Nor would it follow, if it could be proved that all dialects of mankind point to one common source, that therefore the human race must descend from one pair. For language might have been the property of one favoured race, and have been communicated to the other races in the progress of history.

(Max Müller 1885, vol. 1: 372–3)

The problem of the relationship between languages and human populations is also faced by the Italian linguist Alfredo Trombetti (1866–1929), in a book that strongly argues for the monogenetic hypothesis (Trombetti 1905), as is clear from its title (*L’unità d’origine del linguaggio*). Despite the fact that in this title “language” appears in the singular, not in the plural, Trombetti does not deal with the origin of the human language faculty, but with the monogenesis vs. the polygenesis of languages. This is clearly stated at the beginning of his book, where, however, a possible connection between the two problems is hinted at:

since I wanted to avoid in this work any kind of inquiry less than positive, I have avoided dealing with the question of the origin of language. It is certain, however, that, apart from the study of the psychophysical conditions in which and by means of which human language could form and develop, the oldest elements shared by so many linguistic groups will offer an excellent basis to whoever aims to look into those relationships that hold between the sign and the thing signified. Indeed, it is clear that such relationships can be discovered only when we are confronted with elements which, both in terms of their form as well as for their meaning, appear to be truly primitive. Any other kind of speculations which one could entertain have no value.

(Trombetti 1905: vii)

On the relationships between languages and populations, Trombetti writes:

It has been repeated ad nauseam that linguistic and anthropological divisions do not coincide. It is more exact to say that *it is possible* that they do not coincide.

Language, certainly, is not a necessarily inheritable characteristic, like physical structure; however, in practice, the coincidence between languages and races is the rule, not the exception. [...] We therefore consider the monogenesis of language at least as a very strong argument in favor of the monogenesis of man. [...] To allow the possibility (if nothing more) of independent origins in several places on the Earth, we would have to admit that the precursor must have been a cosmopolitan animal; which is something that Darwin's followers would not allow. [...] And it is strange that the differences of the human races have been so often exaggerated by the very people who willingly turned a blind eye to the much more significant differences that separate man from apes. All men belong to a single species and are truly brethren.

(Trombetti 1905: 55–58)

We can summarize the discussion so far by means of the following points. (1) The two problems of the origin of human language and of the monogenesis vs. the polygenesis of languages are clearly distinguished both by Darwin and by the linguists we have dealt with, who are not directly inspired by Darwin, but nonetheless know and discuss his views. (2) As far as the first problem is concerned, Darwin assumes a continuity between human language and animal systems of communication: this view is rejected by Schleicher and Max Müller, while it is shared by Whitney. (3) The second problem is treated in connection with that of the origin of human species and of the several human populations. Darwin argues for the monogenesis of both. Schleicher argues for polygenesis of languages and of humans; Max Müller and Whitney state that the monogenesis of both cannot be excluded. Trombetti strongly argues for the monogenesis of languages, which he produces as a strong proof for the monogenesis of humans. Trombetti's monogenetic hypothesis did not have any success among his fellow linguists, since it was essentially unprovable on linguistic grounds. For example, F. de Saussure remarked:

the universal kinship of languages is not probable, but even if it were true – as the Italian linguist Trombetti believes – it could not be proved because of the excessive number of changes that have intervened.

(Saussure 1922, English translation: 192)

We close the present section with an unavoidable reference: the so-called “ban” by the *Société Linguistique de Paris* towards any kind of research concerning the origin of language. « La Société n'admet aucune communication concernant, soit l'origine du langage soit la création d'une langue universelle » [“The Society does not admit any communication concerning either the origin of language or the creation of a universal language”] (Statut de la Société de Linguistique de Paris, art. 2, 1866). It is often argued that this “ban” caused a drastic reduction in studies on the origin of language, which lasted almost a century. Actually, it did not

have any practical effect for many decades: distinguished linguists such as Max Müller, Whitney, Schuchardt (1928:254–310) and Jespersen (1922:412–442) dealt at length with this topic. The problem of the origin of the language faculty was never completely abandoned, even in the subsequent decades (cf., among others, Hockett 1960, Hockett/Ascher 1964). A decline of interest especially concerned the problem of the monogenesis vs. the polygenesis of languages (although with some exceptions in this case too, such as Swadesh 1971). This same issue, however, has forcefully returned to prominence with the results of population genetics, which have provided a new basis for the analysis of the relationships between languages and human groups, and to which we now turn.

4. A look at the current debate

The results of the research group headed by L.L. Cavalli-Sforza can be summarized as follows. (1) The species *Homo sapiens* has a single origin, in Africa, around 200,000 years ago. Around 100,000 years ago, the species had become widespread in East Africa, in South Africa and the Middle East. (2) From 70,000 to 60,000 years ago, the species began to spread throughout the world: first in Central and South Asia, then in Europe, in Oceania, and the Americas. (3) The genealogical tree of the populations largely coincides with the genealogical tree of languages proposed by Greenberg and Ruhlen. Ruhlen is a convinced supporter of the monogenesis hypothesis, who explicitly recalls Trombetti's suggestions:

A [...] consequence of monogenesis is that it becomes possible, at least theoretically, to compare a phylogenetic tree of the human family based on linguistic traits with one based on biological traits. [...] in several works published during the first quarter of the twentieth century, the Italian linguist Alfredo Trombetti sought to establish the monogenesis of human language [*sic*] by comparing lexical and grammatical roots from languages and language families around the world. (Ruhlen 1994:263)

No wonder, therefore, that Ruhlen especially welcomes the results by Cavalli-Sforza and his collaborators: "recent work by L.L. Cavalli-Sforza et al. (1988) shows that the correlations between biological and linguistic classifications are of a most intimate nature" (Ruhlen 1994:273).

Ruhlen and Greenberg's methods for demonstrating language relationships, however, do not find the agreement of the community of linguists. As can be seen from the reference to Trombetti in the quotation above, Ruhlen insists on the fact that such relationships are to be based on the comparison of "lexical and grammatical roots". On the contrary, the standard method of historical-comparative

linguistics, since its beginnings in the early 19th century, is based on the systematic sound correspondences between languages (the so called ‘sound laws’, in German *Lautgesetze*). Trombetti (1905:24) does not “deny the importance of sound laws”, but he suggests that in some cases it is advisable to derogate from them. Possibly this was the reason why Trombetti’s essay was not taken into serious consideration by his contemporaries; and this same criticism applies to Greenberg and Ruhlen’s methods and alleged results.

The issue of monogenesis vs. polygenesis of human languages therefore seems to show no significant progress with respect to the situation of one century ago: as Saussure suggested in his assessment of Trombetti’s essay, it would appear be an essentially unsolvable, and hence an unscientific, problem. Such a conclusion, however, sounds too drastic to me: the status of our knowledge is not the same as it was between the end of the 19th and the beginning of the 20th century. At that time, M. Müller could treat the hypotheses of polygenesis of languages and monogenesis of humans on the one hand and of monogenesis of languages and polygenesis of humans on the other as based on an equivalent body of evidence (see above, p.12). For his part, Trombetti derived the monogenesis of humans from his alleged demonstration of the monogenesis of languages. Today, the starting point is exactly the reverse of Trombetti’s: while we have scarce or no linguistic evidence for the monogenesis of languages, we have substantial evidence for the monogenesis of the human species, provided by research into the genetics of populations.

We have seen in the previous section that some 19th century linguists called the problem of monogenesis vs. polygenesis of languages “linguistic”, while they labeled as “anthropological” that of the origin of the language faculty. I would invert this approach: the issue of the origin of the language faculty is a typical linguistic (or, better, biolinguistic) problem, while that of the original unity or multiplicity of languages is essentially anthropological. If, as we have said above, the failure of attempts such as Trombetti’s or Ruhlen’s to prove the monogenesis of languages shows that this problem is probably unresolvable through linguistic means, we can inquire whether a hint to its solution can be provided by considerations of an anthropological kind. Not being an anthropologist, I cannot be expected to offer any adequate solution; the following remarks are intended as simple suggestions.

One would expect that the ‘culture-oriented’ linguists would be more inclined to support the polygenetic position: since (in their opinion) languages are historical products, which can differ from each other without any boundary, they could originate in different places and at different times. However, even within this group of scholars, views are not unanimous: e.g., Evans and Levinson (2009:477) hold the monogenetic position, while some others are more or less decidedly

against it (see, e.g., Nichols 2012:572; Mufwene 2013:49). Among ‘biology-oriented’ linguists (e.g., Chomsky, but also other scholars who do not wholly agree with his view of the language faculty and of its origin), the problem still seems mostly ignored, or considered as a ‘pseudo-problem’. Let us compare Derek Bickerton’s and Noam Chomsky’s positions on this subject. According to Bickerton (2010: 210)

language arose through selective pressure toward a type of communicative system capable of displacement that had already operated successfully in other species – a system designed for recruitment in order to exploit rich food sources. That pressure created an initially crude and primitive protolanguage, but in brain orders of magnitude larger than those of ants or bees such a system could not be limited to its initial function. Once established, protolanguage itself became a selective pressure for its own expansion, and for mechanisms that would then regularize, and thus automate and disambiguate, ever-lengthening propositions – mechanisms such as hierarchical structure and recursion.

Chomsky considers Bickerton’s assumption of a protolanguage (in the sense of protolanguage₁, above) as essentially useless and unmotivated. Furthermore, he does not ascribe the origin of the language faculty to any communicative need, but to some kind of “rewiring of the brain”:

we can suggest what seems to be the simplest speculation about the evolution of language. Within some small group from which we are all descended, a rewiring of the brain took place in some individual, call him *Prometheus*, yielding the operation of unbounded Merge, applying to concepts with intricate (and little understood) properties. [...] Prometheus had many advantages: capacities for complex thought, planning, interpretation, and so on. The capacity would then be transmitted to offspring, coming to predominate (no trivial matter, it appears, but let us put that aside). At that stage, there would be an advantage to externalization, so the capacity might come to be linked as a secondary process to the SM system for externalization and interaction, including communication [...].

(Chomsky 2010: 59)

“Unbounded Merge” designates a mental capacity of humans, essentially consisting in a recursive combination of elements. We have also to recall that, according to Chomsky, language, or, more exactly “I-language”, in his technical terminology, is an individual phenomenon (“I” stands for “internal”, “individual” and “intentional”; cf., eg., Chomsky 2000:118–119). This “internal” (i.e., mental) capacity is “externalized” when it becomes expressed by some sensory-motor (SM) systems: that of sounds, in the first place, but also that of manual signs, in the case of deaf mute languages. Communication is not the source of language, but rather one of its effects.

Despite such important differences, both Bickerton and Chomsky assume that the language faculty is biologically constrained. They also show an analogous attitude towards the question of the monogenesis vs. the polygenesis of world languages. According to Bickerton, the issue “did language begin in one place or several?” is a “non-issue”. The diversification of languages is constrained by a “biological envelope”, which “would ensure that all languages would conform to a similar pattern, even if the ancestors of those languages developed in different places and at different times” (Bickerton 2007: 13).

Chomsky’s views on the matter can be summarized by the following quotation:

Why are there so many languages? The reason might be that the problem of externalization can be solved in many different and independent ways, either before or after the dispersal of the original population. Solving the externalization problem may not have involved an evolutionary change – that is, genomic change. It might simply be a problem addressed by existing cognitive processes, in different ways, and at different times. There is sometimes a misleading tendency to confuse literal evolutionary change with historical change, two entirely distinct phenomena.

(Chomsky 2010: 61)

Both Bickerton and Chomsky therefore consider the origin of the human language faculty as the only really interesting issue, since it raises an evolutionary problem: how did this faculty develop within a single species, namely humans? Language diversification is only an accidental fact, since it is always constrained by the boundaries of the innate biological endowment forming our innate language capacity.

However, as was stated above, I do not think that this problem can be dismissed so simply. I will try to frame it in a perspective consistent with the Chomskian view of language and of its nature. Since, within this perspective, language is an individual phenomenon, we can rephrase the problem of monogenesis or polygenesis of languages as follows: did the language faculty originally appear in one individual or in several individuals? And did this individual (or these individuals) belong to one or more groups? Before attempting to answer these questions, we have to recall that the possession of the human language faculty and the possibility of communicating is an extraordinary advantage from the point of view of natural selection. This is the only point on which we depart from Chomsky, not in principle but in the stress given to the different factors: the fact that language did not develop for communication needs (as Chomsky correctly assumes, in my view) cannot make us overlook its importance as a tool of communication (as Chomsky does, or seems to do). Cavalli-Sforza et al. (1988: 6006) write:

Which stimuli determined, and which technologies helped, expansions of modern humans to the whole Earth? It seems very likely that an important role was

played by a biological advantage that may have developed slowly over millions of years and undergone a final step only with the appearance of modern humans: a fully developed language. [...] From a speculative point of view, it seems reasonable that more efficient communication can improve foraging and hunting techniques, favor stronger social ties, and facilitate the spread of information useful for migratory movements. It also makes it easier to understand the rapid disappearance of Neanderthals, if they were biologically provided with speech of more modest quality than modern humans.

Given this huge selective advantage of language as a means of communication and the fact that monogenesis of *Homo sapiens* seems to have been established, statements such as that the parent languages could appear “in different places and at different times” (Bickerton) or that language could have been externalized “before or after the dispersal of the original population” (Chomsky) need at least some qualifications. If language appeared (or “externalized”) in a single group but not in the others before the dispersal of populations, the “language endowed group” would have had an enormous selective advantage with respect to the others, which were thereby doomed to extinction. In this scenario, the hypothesis of the monogenesis of languages appears more reasonable than that of polygenesis. Of course, the polygenetic hypothesis could be perfectly reasonable if we assume that the externalization of language occurred only after the first migrations of the human populations from their original African settlement. This possibility cannot certainly be excluded: but we might note that migration would require a rather sophisticated technology and the possibility of detailed communication, both of which are surely supported by the possession of a complex and articulated tool such as human language.

At this point, however, we have to explain how and why languages became different from each other. In the generative framework, an interesting proposal in this sense has been advanced by M. Baker (2003). According to Baker (2003: 351), “our language faculty could have the purpose of communicating complex propositional information to members of our group while concealing it from members of other groups”. Hence, different human groups would have developed different languages in order to protect them from rival groups, by concealing group-internal communication. One could dub Baker’s account “the Babel hypothesis with an inverted sign”: contrary to the Biblical paradigm, the diversification of languages would not be harmful, but rather beneficial to humans. Such an account is undoubtedly ingenious and stimulating: however, also more simple and traditional explanations are also available. Saussure (1922, English translation: 198) says that “time is actually the cause of linguistic differentiation” (a similar intuition can already be found in Dante’s treatise *De vulgari eloquentia*, book I, Chapter 9). It is not even necessary that populations separate from each other for dialectal differences to arise:

speaking of the diversification of Indo-European languages, Saussure (1922, English translation: 209–210) remarks that “dialectal differentiations could and must have arisen before these nations spread out in various directions”. These facts are not mysterious at all, but they derive from the individual nature of language: if we assume that languages are individual phenomena, change and differentiation (of course, in the historical, not evolutionary sense; see Chomsky’s quotation above, p. 18) are intrinsic to them.

Chomsky was not the first scholar to state that language is an individual phenomenon: an analogous position was held several decades before him by the Neogrammarian linguist Hermann Paul (1846–1921). Paul states that “there are as many languages as there are individuals” (Paul 1910: 368; see also Paul 1920: Chapter 1; for a comparison of Paul’s and Chomsky’s views see Graffi 1995). From this perspective, the problem is no longer to account for language diversity, but rather for the possibility of communication between different individuals. This happens because of interrelation (*Verkehr*, in Paul’s own words) between individuals, which engenders a kind of “average” of their different languages. Of course, Paul remarks, the smaller or larger intensity of the interrelation is the crucial factor in the production of such an average. Moreover, languages change because each individual “is bound by the tradition in her/his linguistic activity, but a certain degree of freedom is always at her/his disposal” (Paul 1910: 369). So, any new generation, or better, any new offspring would automatically change the language of her/his parents.

Let us now come back to the picture we sketched above and summarize our points. (1) We assume, on the basis of the results of population genetics, that a small group of individuals in East Africa was the ancestor of the human species. (2) We conjecture that language faculty appeared (at least) in one individual (Chomsky’s “Prometheus”; see above) and was genetically transmitted to some or all of her/his offspring. (3) At a given time, this faculty externalized in one or more such individuals, whose interrelation brought about a first instance of protolanguage₂. The evolutionary advantages of the externalization of language and of the origin of a communication means are obvious. (4) Languages unavoidably change, because they are primarily individual phenomena: their differentiation could be due to the increasing geographical distancing of the population groups after their migration from their original settlement, but also to the simple elapsing of time. (5) So all world languages could have originated from the same protolanguage₂; its reconstruction is however impossible to achieve using reliable linguistic methods.

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