

THE ORIGIN OF SPEECH.¹

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ALTHOUGH many linguists resolutely abstain from considering the origin of speech (which is certainly, like all other genetic problems, beyond the grasp of psychology), the question is so intimately allied with that of the evolution of articulate language, allied again in itself with the progressive development of abstraction and of generalisation, that we shall give a brief summary of the principal hypotheses relating to this subject, while limiting ourselves to the most recent.

I.

Launching forth then into this region of conjecture—do we, in the first place, find among some animals signs and means of communication which for them are the equivalents of language? In considering this point it matters little whether or no we accept the evolutionary thesis. It must not be forgotten, in fact, that the problem of the origin of speech is only a particular case of the origin of language in general: speech being but one species among several others of the *facultas signatrix*, which can only be manifested in the lower animals in its humblest form.

There can be no doubt that pain, joy, love, impatience, and other emotional states, are translated by proper signs, easy to determine. Our problem, however, is different; we are concerned with signs of the *intellectual*, not of the affective, life. In other words, can certain animals transmit a warning, or an order, to their fellows? Can they muster them for a co-operative act, and make themselves intelligible? Although the interpretation is necessarily open to the suspicion of anthropomorphism, it is difficult not to recognise a sort of language in certain acts of animal life. Is it, *a priori*, probable that animals, which form stable and well-organised

¹ Translated by Frances A. Welby.

societies, should be bereft of all means of intercommunication and comprehension?

With regard to ants, we learn from such observers as Kirby and Spence, Huber, Franklin, that they employ a system of signs. To elucidate this point, Lubbock undertook a series of patient experiments, certain of which may be quoted.¹ He pinned down a dead fly so that no ant could carry it off. The first that came made vain attempts to remove it. It then went to an ant-hill and brought seven others to the rescue, but hurried imprudently in front of them. "Seemingly only half awake," they lost the track and wandered alone for twenty minutes. The first returned to the nest and brought back eight, who, so soon as they were left behind by the guide, turned back again. During this time the band of seven (or at least some of them) had discovered the fly, which they tore in pieces and carried off to the nest. The experiment was several times repeated, with different species, and always with the same result. Lubbock concluded that ants were able to communicate their discoveries, but without indicating locality. In another experiment he placed three glasses at a distance of thirty inches from a nest of ants. One of the glasses contained two or three larvæ, the second three hundred to six hundred, the third none at all. He connected the nest with the glasses by means of three parallel tapes, and placed one ant in the glass with many larvæ and another ant in that with two or three. Each of them took a larva and carried it to the nest, returning for another, and so on. After each journey he put another larva into the glass with only two or three larvæ, to replace that which had been removed, and every stranger brought was imprisoned until the end of the experiment. Were the number of visits to all three glasses the same? And if not, which of the two glasses containing larvæ received the greater number of visitors? A difference in number would seem to be conclusive as proving a power of communication. The result was that during forty-seven and a half hours two hundred and fifty-seven friends were brought by the ants having access to the glass containing numerous larvæ, while during an interval of fifty-three hours there were only eighty strange visitors to the glass containing two or three larvæ; there were no visits to the glass containing none. Communication for bees as for ants, appears to be made by rubbing the antennæ. If the queen is carried off in a hive, some of the bees are sure to discover it before long. They become greatly agitated, and run about the hive frantically, touch-

¹ *Ants, Bees, and Wasps*, VII.—Romanes, *Animal Intelligence*, IV.

ing any companions they meet with their crossed antennæ, and thus spreading the news through the whole community. The bee-hunters in America discover them by choosing a clearing where they catch a few wandering bees, which are then gorged with honey and suffered to fly when replete. These bees return with a numerous escort. The same process is repeated with the new comers, and by observing the direction which they follow at their departure, the nest is discovered.

As regards the higher animals (notwithstanding the exaggerations of G. Leroy—who asserts that when they hunt together, wait for one another, find each other again, and give mutual aid, “these operations would be impossible without conventions that could only be communicated in detail by means of an articulate language [sic]”) the truth is that we know singularly little about them. It is certain that, in addition to sounds that translate their emotions, many species have other means of communication. According to Romanes¹ the most intelligent dogs have the faculty of communicating with one another by tones of barking, or by a gesture, such simple ideas as “follow me.” This gesture is invariably the same; being a contact of heads with a motion between a rub and a butt, and always resulting in a definite but never complex course of action. In a troop of reindeer the leader makes one sign for the halt, another for the march forward, hitting the laggards one after another with his horns. Monkeys are known to produce various sounds (the gibbon compasses a complete octave), and several species will meet and hold a kind of conversation. Unfortunately, notwithstanding recent researches, we have only vague and doubtful data in regard to monkey language.

We know finally, that certain birds are able to articulate, and possess all the material conditions of speech, the faculty being indeed by no means uncommon. Parrots do even more; there is no doubt that they can apply words, parts of sentences, and airs, to persons, things, or definite events, without varying the application, which is always the same.² Association by contiguity sufficiently explains this fact; but, granting that they do not as a rule make a right intellectual use of articulate sounds, they seem in certain instances to attach to them the value of a *sign*. Romanes actually observed a more extraordinary case, implying generalisation, with apposition of a sound. In the first instance, one of his par-

¹ *Animal Intelligence*, XVI., p. 445.

² The most interesting of the many observations on this subject are those of Dr. Wilkes, F. R. S., published in the *Journal of Mental Science*, July, 1879.

rots imitated the barking of a terrier which lived in the house. Later on, this barking became a denotative sound, the proper name of the dog; for the bird barked as soon as it saw the terrier. Finally, at a still later stage, it got into the habit of barking when any dog, known or unknown, came into the house; but ceased to bark at the terrier. While distinguishing individuals it therefore perceived their resemblance. "The parrot's name for an individual dog became extended into a generic name for all dogs."¹

In short, the language of animals—so far as we know it—exhibits a very rudimentary development, by no means proportionate to that of the logic of images, and highly inferior to that of analytical gesture. It throws no light, notwithstanding all that has been said, upon the problem of the origin of speech.

In respect to this subject, which has excited human curiosity for centuries without satiation, there appear to me (when we have eliminated old or abandoned hypotheses) to be only two theories which have any solidity: the one presupposes instinct; the other a slow evolution.

I. It must be remarked that if the partisans of the first theory seem at the outset to have frankly admitted innate disposition (the fundamental characteristic of instinct), it is more difficult to distinguish between some of the later writers and the evolutionists.

Thus it has been said: speech is a necessary product in which neither reflexion nor will participate, and which is derived from a secret instinct in man (Heyse). Renan sustained a similar thesis. For Max Müller, "man is born speaking, as he is born thinking"; speech marks the transition from (concrete) intuitions to ideas; it is a fact in the development of the mind; it is created with no distinct consciousness of means and end. For Steinthal, on the contrary, "language is neither an invention nor an innate product; man creates it himself, but it is not begotten of the reflecting mind." Through all these formulæ, and others somewhat tinged with mysticism, we can discover but one point of fact, analogous to that which states that it is in the nature of the bee to form its comb, of the spider to weave its web. The last word of the enigma is unconscious activity, and whether directly, or by evasions, this school must return to innate faculties.

A somewhat recent theory—that of L. Noiré,²—is distinct from the foregoing. In these, speech is the direct (although, it is true, unconscious) expression of intelligence; for Noiré, on the other

¹ *Mental Evolution in Man*, p. 173.

² *Der Ursprung der Sprache* (1877). Fr. Müller maintained a similar view.

hand, it is the outcome of will. "Language is the result of *association*, of community of feeling, of a sympathetic activity which, at the outset, was accompanied by sounds . . . ; it is the child of *will* and not of sensation." Speech is derived from community of action, from the collaboration of primitive men, from the common use of their activities. When our muscles are in action, we feel it a relief to utter sounds. The men who work together, the peasants who dig or thresh the grain, sailors rowing, soldiers marching, emit more or less vibrant articulations, sounds, exclamations, humming, songs, etc. These sounds present the requisite characters of the constitution of articulate language; they are common to all; they are intelligible, being associated by all with the same acts. Action, according to Noiré, is the primitive element in all language. Human labor is the content of primitive roots; to cut, knock, dig, hollow, weave, row, etc. Although Max Müller adhered almost unreservedly to this hypothesis, it has, like all others, encountered much criticism which we need not dwell on. Is it probable, it has been asked, that the first names should have been for acts only, not for objects? How explain the synonyms and homonyms so frequent in primitive language? etc.

II. The hypothesis of a progressive evolution of speech, while dating from antiquity, has only taken a consistent form in our own days, under the influence of transformist doctrines. The work of anthropologists and of linguists, above all of the former, it finds support in the study of inferior idioms and of the comparative method. Its fundamental thesis is that articulate language is the result of a long elaboration, lasting for centuries, in which we may with some probability reconstitute the stages. While its authors are not in complete agreement it may be said that, generally speaking, they admit three periods: the cry, vocalisation, articulation.

The cry is the primordial fact, the pure animal language, a simple vocal aspiration, without articulation. It is either reflex, expressing needs and emotions, or, at a stage higher, intentional (to call, warn, menace, etc.). It has been said that the speechlessness of animals is due to the imperfection of their auditory (?) organs and want of organic correspondence between their acoustic images and the muscular movements that produce sound: but the cause of this aphasia must also, and above all, be referred to their weak cerebral development; this applies also to primitive man. "What function could words have fulfilled when the anthropoid of the Neanderthal or the Naulette roamed, naked and solitary,

from ditch to ditch, through the thick atmosphere, over marshy soil, stone in hand, seeking edible plants or berries, or the trail of females as savage as himself?"¹ It is intelligence that creates its instruments, as well speech as all the rest.

Vocalisation (emission of vowels only) does not in itself contain the essential elements of speech. Many animals practise it; our vowels, long or short, even our diphthongs, can readily be recognised in the voice of different species (dog, cat, horse, birds in large numbers, etc.). In the child, it succeeds the period of the simple cry; and since it is admitted that the development of the individual hints at that of the race; that, moreover, many primitive languages or rudimentary idioms (as such, near the time of their origin) are very rich in vowels,—it has been concluded that there existed a longer or shorter period intermediate between those of the cry and of articulation (this thesis has close affinities with the theory of Darwin, Spencer, etc., which has been rejected by other evolutionists); that speech is derived from song, intellectual language from emotional language; in other words, that man could sing before he could speak. Various facts are alleged in support of this theory: (1) In monosyllabic languages, which are generally held to be the most ancient, the accent plays a cardinal rôle; the same syllable, according to the tone which accompanies it, takes on the most widely different meanings. Such is the case of the Chinese. In Siamese, *hǎ* = to seek; *há* = plague; *hà* = five. (2) Other languages in which intonation is of less importance, are nevertheless in close relation with song, and by reason of their vocabulary and of the grammatical construction, modulation is necessary for giving a complete sense to the words and phrases. (3) Even in our own languages, which are completely dissociated from song, the voice is not even in tone; it can be greatly modified according to circumstances. Helmholtz showed that for such banal phrases as "I have been for a walk," "Have you been for a walk?" the voice drops a quarter-tone for the affirmation, and rises a fifth for the interrogation. H. Spencer called attention to several facts of the same order, all commonplace. (4) The impassioned language of emotion resembles song: the voice returns to its original form; "it tends," according to Darwin, "to assume a musical character, in virtue of the principle of association."

Whatever may be the force of this reasoning, conclusive for some, doubtful for others, the conditions necessary to the existence of speech arose with articulation only, consonants being its firmest

¹ A. Lefèvre, *Les races et les langues (Bibliothèque scientifique internationale)*, pp. 5-6.

element. The origin of speech has been much disputed. Romanes invokes natural selection: "The first articulation probably consisted in nothing further than a semiotic breaking of vocal tones, in a manner resembling that which still occurs in the so-called 'chattering' of monkeys,—the natural language for the expression of their mental states."¹ It should, however, be noted that the question, under this form, has merely a physiological interest. The voice is as natural to man as are the movements of his limbs; between simple voice and articulate voice there is but the same distance as between the irregular movements of the limbs of the newly born, and such well-co-ordinated movements as walking. Articulation is merely one of the forms of expression: it is so little *human* that it is met with, as we have seen, among many of the lower animals. The true *psychological* problem lies elsewhere: in the employment of articulate sounds as *objective signs*, and the attaching of these to objects with which they are related by no natural tie.

Geiger in his *Ursprung der Sprache* (1878) brought forward a hypothesis which has been sustained by other authors. It may be summed up as follows: words are an intimation of the movements of the mouth. The predominant sense in man is that of sight; man is pre-eminently visual. Prior to the acquisition of speech, he communicated with his fellows by the aid of gestures, and movements of the mouth and face; he appealed to their eyes. Their facial "grimaces," fulfilled and elucidated by gestures, became signs for others; they fixed their attention on them. When articulate sounds came into being, these lent themselves to a more or less conventional language by reason of their acquired importance. For support of this hypothesis, we are referred to the case of non-educated deaf-mutes. These invent articulate sounds (which of course they cannot hear), and use them to designate certain things. While many of these words appear to be an arbitrary creation (e. g., *ga*=one, *ricke*=I will not, etc.), others result from the imitation by their mouth of the movements perceived on the mouth of others. Such are *mumm*=to eat; *chipp*=to drink; *be-yr*=barking of a dog, etc.² Why should primitive man have done less than the deaf-mute, when he not only saw the movements but heard the sounds to boot?

To conclude with a subject in which individual hypotheses abound, and which for us is only of indirect interest, we may sum-

¹ *Loc. cit.*, 372.

² Heinicke, *Beobachtungen über Stumme*, 75, 137.

marise the sketch given recently enough (1888) by one of the principal partisans of the evolutionary theory :

“Starting from the highly intelligent and social species of anthropoid ape as pictured by Darwin, we can imagine that this animal was accustomed to use its voice freely for the expression of its emotions, uttering of danger-signals, and singing. Possibly enough also it may have been sufficiently intelligent to use a few imitative sounds; and certainly sooner or later the receptual life of this social animal must have advanced far enough to have become comparable with that of an infant at about two years of age. That is to say, this animal, although not yet having begun to use articulate signs, must have advanced far enough in the conventional use of natural signs (or signs with a natural origin in tone and gesture, whether spontaneous only or intentionally imitative) to have admitted of a tolerably free exchange of receptual ideas, such as would be concerned in animal wants, and even, perhaps, in the simplest forms of co-operative action. Next, I think it probable that the advance of receptual intelligence which would have been occasioned by this advance in sign-making, would in turn have led to a further development of the latter,—the two thus acting and reacting on each other until the language of tone and gesture became gradually raised to the level of imperfect pantomime, as in children before they begin to use words. At this stage, however, or even before it, I think very probably vowel-sounds must have been employed in tone-language, if not also a few of the consonants. Eventually the action and reaction of receptual intelligence and conventional sign-making must have ended in so far developing the former as to have admitted of the breaking up (or articulation) of vocal sounds, as the only direction in which any further improvement of vocal sign-making was possible. I think it not improbable that this important stage in the development of speech was greatly assisted by the already existing habit of articulating musical notes, supposing our progenitors to have resembled the gibbons or the chimpanzees in this respect. But long after this first rude beginning of articulate speech, the language of tone and gesture would have continued as much the most important machinery of communication. Even if we were able to strike in again upon the history thousands of years later, we should find that pantomime had been superseded by speech. I believe it was an inconceivably long time before this faculty of articulate sign-making had developed sufficiently far to begin to starve out the more primitive and natural systems; and I believe that, even after this starving-out

process did begin, another inconceivable lapse of time must have been required for such progress to have eventually transformed *Homo alalus* into *Homo sapiens*.”¹

Among all these hypotheses we may choose or not choose; and while we have dwelt briefly on this debated problem, whose literature is copious, we may yet have said too much on what is mere conjecture.

One certain fact remains, that—notwithstanding the theory by which speech is likened to an instinct breaking forth spontaneously in man—it was at its origin so weak, so inadequate and poor, that it perforce leaned upon the language of gesture to become intelligible. Specimens of this mixed language are still surviving among inferior races that have nothing in common between them, inhabiting regions of the earth with no common resemblances.

In some cases speech coexists with the language of action (Tasmanians, Greenlanders, savage tribes of Brazil, Grebos of Western Africa, etc.). Gesture is here indispensable for giving precision to the vocal sounds; it may even modify the sense. Thus, in one of these idioms, *ni ne* signifies “I do it,” or “You do it, according to the gesture of the speaker. The Bushman vocabulary is so incomplete and has to be reinforced by so many mimic signs, that it cannot be understood in the dark. In order to converse at night, the tribe is obliged to gather round the fire.

In other cases, speech coexists with inarticulate sounds (Fuegians, Hottentots, certain tribes of North America) which travellers have compared, respectively, to clinking and clapping. These sounds have been classified according to the physiological process by which they are produced, into four (or even six) species: dental, palatal, cerebral, lateral; it is impossible to translate them by an articulated equivalent. “Their clappings survive,” says Sayce, “as though to show us how man, when deprived of speech, can fix and transmit his thought by certain sounds.” Among the Gallas the orator haranguing the assembly, marks the punctuation of his discourse by cracking a leather thong. The blow, according to its force, indicates a comma, semi-colon, or stop; a violent blow makes an exclamation.²

It was advisable to recall these mixed states in which articulate language had not yet left its primitive vein. They are transitional forms between pure pantomime and the moment when speech conquered its complete independence. Having considered the origin of speech, we shall next study its development.

¹ Romanes, *Mental Evolution in Man*, pp. 377-379.

² For data, consult especially Tylor, *Primitive Culture*, V.; Sayce, *Principles of Comparative Philology*, I., § 17.