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The Emergence of Denomination. Darwinism and Philology in George John Romanes' Enquiry on the Human Mind.

Abstract. The paper considers some extracts from George John Romanes' *Mental Evolution in Man* (1888) in order to analyse the author's contribution to the debate on the mental faculties of human beings and the origin of language. By adopting the Darwinian view of a continuity between species – where all differences are in kind and not in degree – Romanes identifies in receptual ideation and denotative sign-making a common psychological and semiotic ground shared by humans and other animals, starting from which human beings gradually attained conceptual ideation and denominative sign-making. By applying this scheme to the findings of contemporary philologists, Romanes achieves his main goal of providing philological proof for his hypotheses, thus defending the Darwinian theory on the origin of language against past and present attacks at the hands of German philologist Max Müller.

Keywords: Romanes; Darwin; Evolution; Comparative psychology; non-human animals; Language; Denomination; Philology.

1. A treatise on language in the late 1880s

The problem of the origin of language was one of the issues most explored by English scholars in the Nineteenth century, particularly in the years

immediately following the publication of Charles Darwin's *On the Origin of Species* (1859)[1]. Twelve years were to elapse before the great naturalist pronounced himself on the topic in *The Descent of Man* (1871), and other seventeen years before his young disciple and friend John George Romanes (1848–1894) resumed Darwin's arguments and developed them into a brand new essay entitled *Mental Evolution in Man* (1888).

While presenting a long and detailed treatment of the origin and development of conceptual thought, Romanes devoted a considerable share of the volume to the investigation of linguistic issues, and in particular to the phylogenetic origin of the faculty of language.

While deferring a complete analysis of Romanes' account on language – which covers philological issues as well as psychological, anthropological, and even grammatical ones – in the present essay I will focus on the particular brand of continuism displayed by the author. Indeed, while starting from the Darwinian assumption of a continuity between the mental faculties of human and non-human animals, Romanes finds his own way of extending the work of the great naturalist and addressing the same kind of objections as those raised against the application of Darwinian evolutionism to the genesis of human thought and language.

In order to understand why he appealed to language, and why such an old argument as the origin of language was still frequented in the late Eighties, it is necessary to recall the scientific education of Romanes, his friendship with Charles Darwin, and the terms of the linguistic and philosophical debate that took place in the mid-Nineteenth century.

2. "How glad I am that you are so young!"

George John Romanes was born in Kingston, Ontario, but his family came back to England shortly after his birth. He entered the University of Cambridge in 1867, with the idea of joining the Anglican Church, and became interested in natural science at least as early as 1870, when he took his Tripos. He later became acquainted with Darwinism thanks to the mentoring of Professor Michael Foster (1836–1907), founder of the Cambridge School

[1] The situation was different on the Continent, where the Societé Linguistique de Paris had banned all debate on the origin of language since 1866. The reasons for this prosecution of the enquiries in the United Kingdom are largely due to the delay in the reception of German comparative linguistics (see Aarsleff 1967), which allowed the study of language to remain more philosophical than philological, in the fashion of the previous century.

of Physiology. After giving up on the prospect of a clerical career and the study of Medicine, he started working on physiology at University College under the direction of William Sharpey (1802–1880) and John Burdon Sanderson (1828–1905).[2]

His first contact with Charles Darwin dates back to 1873, when the naturalist read a letter that Romanes had published in an issue of *Nature*, explaining the sandy colouring of plaices in terms of their behavioural patterns, against the reversion theory (see Romanes 1873, Schwartz 1995: 281). Darwin welcomed the young biologist's letter and sent him a note of encouragement. The two scholars then met in London on 10th December 1874 and Darwin, who was 39 years older than Romanes, welcomed his disciple with the famous words "How glad I am that you are so young!" (Romanes 1896: 14). It was the beginning of a very close friendship that lasted until the final years of Darwin's life, when Romanes became Darwin's personal assistant.

Romanes was a highly prolific author and a coherent scholar: though his publications were heterogeneous, including as they did evolutionary remarks, papers on psychology, and religious observations,[3] he nevertheless followed Darwin's principle of developing "one long argument from the beginning to the end" (Barlow 1958: 140, cf. Zeller 2003: 10–11). This argument may be identified with the principle of continuity between the mental faculties of human and non-human animals or, in other words, with the foundation and definition of comparative psychology. Indeed, Romanes' aim was to align the realm of psychology to the scientific results already reached by comparative anatomy. This intent he explicitly declared in the Preface of his *Animal Intelligence* (1882); after lamenting the lack of scientific trustworthiness of existing works on the intelligence of animals, Romanes claimed that it was time for comparative psychology to be included in the hierarchy of the sciences (Romanes 1882: vi).

He restated the concept in the Introduction to his subsequent book, *Mental Evolution in Animals* (1883):

> In the family of the sciences Comparative Psychology may claim nearest kinship with Comparative Anatomy; for just as the latter aims at a scientific comparison of the bodily structures

[2] The biographical information about Romanes is taken from Zeller (2003, 2007) and the *Oxford Dictionary of National Biography* (Smith 2004).

[3] For a complete account of Romanes' writings see Schwartz (2010) and Pleins (2014).

> of organisms, so the former aims at a similar comparison of their mental structures. (Romanes 1883: 5)

The two books were meant to be part of the same project, and it was only because of the length of the material that he published them as two separate volumes: while *Animal Intelligence* is mostly "a compendium of facts relating to Animal Intelligence", the object of *Mental Evolution in Animals* is "that of tracing, in as scientific a manner as possible, the probable history of Mental Evolution, and therefore [...] of inquiring into the causes which have determined it" (Romanes 1883: 5–13). The topic is justly considered a brand new field of study. Apart from Darwin and Spencer, Romanes notes, no one had hitherto ventured to reconstruct the genesis of the mind on an evolutionary basis: "[y]et there is not a doubt that, for the present generation at all events, no subject of scientific inquiry can present a higher degree of interest" (Romanes 1882: vi–vii).

When turning to consider the issue of the mental faculties of humans, Romanes realized that it was so wide a topic as to require a separate book, which he published in 1888. The book was meant to be the first volume of a greater work devoted to the mental faculties of human beings, which was to include an analysis of other human mental faculties such as morals and religion. The subject of the first volume, whose subtitle is *Origin of Human Faculty*, is the genesis of conceptual thought, which Romanes considered as the starting ground for any subsequent enquiry:

> If once the genesis of conceptual thought from non-conceptual antecedents be rendered apparent, the great majority of competent readers at the present time would be prepared to allow that the psychological barrier between the brute and the man is shown to have been overcome. (Romanes 1888: vi)

In order to overcome the barrier between humans and other animals, Romanes had to show that the difference in their respective mental faculties was one of degree and not of kind. He was aware of the great amount of difficulties involved in this task, as well as of the criticism already voiced by scholars the likes of Alfred Russel Wallace (1823–1913), George Jackson Mivart (1827–1900), and Jean Louis Armand de Quatrefages (1810–1892) (see Romanes 1888: 1–19). More than anything, he was conscious of the huge importance that language acquired for any research on human psychogenesis. On this ground, his main opponent was German philologist Friedrich Max Müller (1823–1900), who also happened to be Charles Darwin's main

opponent on the issue of language origin since the early Sixties. Before analysing Romanes' contribution to the subject, it is necessary to take a step back and make at least some remarks on the quarrel that had been raging in the previous decades.

3. Darwinian evolution and the origin of language: a convoluted debate

In the second chapter of *The Descent of Man*, Charles Darwin expounded his theory on the first origin of human language in what was to become a famous paragraph:

> With respect to the origin of articulate language, after having read on the one side the highly interesting works of Mr. Hensleigh Wedgwood, the Rev. F. Farrar, and Prof. Schleicher, and the celebrated lectures of Prof. Max Müller on the other side, I cannot doubt 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. (Darwin 1871: I, 56)

The scholars quoted by Darwin were the leading protagonists of a quarrel which took place in the years before *The Descent of Man*. Indeed, the discussion on the origin of language in relation to non-human animals started long before Charles Darwin ever pronounced himself on the topic, since it was triggered by the publication of *On the Origin of Species* (1859) (see Gensini 2001, 2014). As is well known, Darwin did not deal with the evolution of humans in the *Origin*, but he hinted at the important repercussions that the theory of evolution by means of natural selection would have in the study of humanness: "In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation. Light will be thrown on the origin of man and his history" (Darwin 1859: 488).

As was easy to predict, the emergence of Darwinian evolutionism posed a tough philosophical challenge to the alleged uniqueness of human beings, which also reverberated in the philosophy of language. Since language was considered the human faculty *par excellence*, the problem of its origin became of crucial importance for both the supporters and the opponents

of Darwin's doctrine: on the one side, the defenders of human uniqueness put in their efforts to show how language could not possibly be the product of evolution, and that therefore the entire doctrine was to be rejected or at least not extended to humans; on the other side, Darwin and his followers had to demonstrate how the highest mental faculty of human beings could be explained in terms of a gradual evolution from a common ground shared with other animals.

Under this regard, the main opponent of Darwinism was German philologist Max Müller, who came to England in 1846 and soon became a leading expert in comparative linguistics and one of the most popular scholars of his time. Müller's attitude towards Darwinism was twofold: while he essentially acknowledged natural selection with regard to the development of tongues, he dismissed it with regard to the origin of language[4]. The reasons for this denial lie in Müller's theoretical background, which included Kantian metaphysics and German Idealism (see Nicholls 2014): by recalling Herder and Humboldt's views on the subject, Müller considered language as an indissoluble unity of words and thoughts. In his opinion, the first names had to be the linguistic counterparts of general ideas, which were rendered possible by the possession of reason. Reason and general ideas, therefore, identify the specifically human trait that no animal could ever aspire to possess: "Other animals [...] are conversant with single objects only. Man has sensation, perception, memory, intellect, and reason, and his reason is conversant with general ideas only" (Müller 1861: 364).

In an attempt to counter the consequences that Darwin's *Origin of Species* entailed for the uniqueness of human language, Müller defined language as the "Rubicon" of humanness:

> The one great barrier between brute and man is *Language*. Man speaks, and no brute has ever uttered a word. Language is our Rubicon, and no brute will dare to cross it. [...] Language [...] admits of no cavilling, and no process of natural selection will ever distil significant words out of the notes of birds or the cries of beasts. (Müller 1861: 340)

While Müller's philosophical aim was clearly to dismiss Darwinian continuism (see Knoll 1986), on a purely linguistic ground his polemical targets were the imitative theories of language proposed in those same years

[4] On the problem of Darwinian selection applied to the origin of language as well as to languages, see Radick (2002).

by English philologist Hensleigh Wedgwood (1803–1891) and Reverend Frederic William Farrar (1831–1903). According to those theories, language was born by means of onomatopoeic and interjectional sounds – which derived from the imitation of the growls of beasts and from man's own instinctive cries – and was subsequently refined thanks to phonetic and semantic improvements guided by analogical devices (see Piattelli 2014). Though neither Wedgwood nor Farrar ever really validated Darwinian evolution with regard to the emergence of human language, Müller saw that the principle of imitation conveyed by their linguistic theories could be easily used to demonstrate a continuity between the mental faculties of human beings and non-human animals (see Piattelli 2016a, 2016b).

Darwin was very well acquainted especially with Wedgwood's work, since the two happened to be cousins, brothers-in-law, and very close friends. When reading Wedgwood's work, he saw how the principle of imitation could be an appropriate response to the major problem of accounting for the emergence of human language without dismissing continuity between species. Indeed, in Darwin's view the process of imitating the growls of beasts did not start from human beings, but must be traced back to some ancestor of ours who were not yet fully human:

> As monkeys certainly understand much that is said to them by man, and as in a state of nature they utter signal-cries of danger to their fellows, it does not appear altogether incredible that some unusually wise ape-like animal should have thought of imitating the growl of a beast of prey [...]. And this would have been a first step in the formation of a language. (Darwin 1871: I, 57).

Darwin's pronouncement on the origin of language did not exhaust the debate, nor did it end the polemic with Müller. Indeed, in 1887 Müller published *The Science of Thought*, a ponderous new essay on the development of thought. Though he was aware that the subject of his book was "out of fashion" and that his view "ran counter to the trade-wind of public opinion" (Müller 1887: viii), he nevertheless felt the urge to resume and deepen many of his arguments against the Darwinian theory on the origin of language, by restating the uniqueness of that human faculty: "By no effort of the understanding, by no stretch of imagination, can I explain to myself how language could have grown out of anything which animals possess, even if we granted them millions of years for that purpose" (Müller 1887: 163).

When Romanes read Müller's book, he had already published *Animal Intelligence* and *Mental Evolution in Animals*, and he was collecting

the material for *Mental Evolution in Man*. In the same years in which he was applying the study of comparative psychology to the mind of humans, Müller's essay offered the 39-years-old biologist a significant chance to test his own theory and to defend the authority of his mentor Darwin, who had passed away in 1882. At the same time, Romanes was aware that Darwin's contribution to the topic was far from complete, since "the light which has been shed by the doctrine of evolution is of a magnitude which we are now only beginning to appreciate" (Romanes 1888: 1).

4. Crossing the Rubicon: from indication to denomination

When starting to deal with the huge question of the psychogenesis of human thought, Romanes had to face two preliminary problems: first, he was aware of the great confusion which arose from a misunderstanding within the terms used by metaphysicians when dealing with the classification of ideas (Romanes 1888: 33–36); second, he knew that he had to build a new kind of relationship between language and thought, which had to be aligned with Darwinian reciprocity rather than with Idealistic identity[5].

He began his inquiry with the first problem. By recalling the work of John Locke, he redefined the realm of ideas by dividing them into three different classes:

1. Simple ideas, or *percepts*, which identify "the mere memory of a particular sensuous perception" (Romanes 1888: 34);
2. Compound or generic ideas, or *recepts*, which identify "the combination of simple, particular, or concrete ideas into that kind of composite idea which is possible without the aid of language" (*ibid.*);
3. General ideas, or *concepts*, which identify "that kind of composite idea which is rendered possible only by the aid of language, or by the process of naming abstractions as abstractions" (*ibid.*).

The main difference with respect to previous classifications lies in the great importance bestowed to compound ideas or recepts, as differentiated from general ideas or concepts. In Romanes' view, recepts belong to a lower degree of ideation, where the mind is capable to recognize the unity of an item (i.e. a human face) by recollecting the similarities perceived in different objects of perception (i.e. the specific traits of many human faces previously perceived), but is not aware of its own recognition. On the contrary, concepts

[5] On the specific differences between Darwin's way of envisaging the language-thought relationship and that of Müller, see Alter (2008).

are characterized by a full awareness of mental operations, where the mind not only is capable of recognizing unity in diversity, but is also capable of stepping out of itself and dealing with its own ideas by means of symbols. In a sense, while recepts are "received" passively by the mind from exterior events, without any intentionality, concepts are actively "conceived" by it, with a full amount of intentionality (Romanes 1888: 40–41).

In Romanes' classificatory system, percepts and recepts belong indifferently to humans and other animals, while concepts are specifically human. A dog may easily form a recept of man as distinguished from the percept of its master, but it cannot name this recept with the word *man*, and this is what prevents it from reaching the truly conceptual stage.

The key-role played by language in the ascending scale of ideas is evident: in a concept "a symbol is substituted for the mental image, so that the symbol may be used instead of the image, whether or not the image is present to the mind" (Romanes 1889: 291). The "wings of language" thus enable the mind to reach the lands of abstraction and "soar beyond the possibilities of any idea which could be suggested by merely sensuous experience" (*ibid.*).

Even though concepts are exclusively human, the key to understanding the passage from the first stage of ideation to the highest one is that "great border-land, or *terra media*, lying between particular ideas and general ideas [which] has been strangely neglected by psychologists" (Romanes 1888: 40). The same remark applies to language: just as recepts are preparatory to concepts, so a series of intermediate semiotic stages, which are common to humans and other animals, grant access to human language. Each semiotic stage corresponds to a lower level of ideation and helps the mind rise higher in the development of thought: the result of this mechanism is a virtuous circle where proto-language and proto-thought work together to construct the immense building of the human mind.

The history of the development of conceptual thought, therefore, is inseparable from the history of the development of the so-called "sign-making faculty". Romanes identifies four grades of this faculty, each one belonging to a different phase of human ontogenesis:

1. The *indicative stage*, where the infant expresses its desires "by means of intentionally significant tones and gesture-signs, such as pointing to objects in connection with which it desires something to be done" (Romanes 1889: 294);
2. The *denotative stage*, where the infant is able to name "receptually, or by special association, upon particular objects, qualities, actions, and states of feeling" (*ibid.*), but is lacking any self-consciousness yet.

3. The *connotative stage*, which consists in "a receptual extension of the meaning of a name from the thing which was at first denoted by that name, to other things which are seen to resemble it" (Romanes 1889: 295).
4. The *denominative stage*, which consists in "the bestowal of a name consciously known as such" (*ibid.*) and requires the presence of self-consciousness.

These stages of the sign-making faculty are clearly traceable in other species as well as in the human child. As for the indicative stage, it is evident in the moves of the cat who pulls someone's dress to seek attention, in the barking of the dog who wants a door to be opened, or in the head movements of the parrot who is eager to have its head scratched. The denotative stage requires simple association and is easily reached by the talking birds which are able to correctly name their masters. Even the connotative stage, which requires the capacity of grasping resemblances in the objects of perceptions, is attained by some animals: just as a child is able to extend the bestowal of a name from an object to another one which resembles it, so a parrot who is used to barking when it sees a terrier would soon bark when seeing any other dog. The difference here lies in the much more advanced ability of the child in grasping resemblances: differently from the child, an animal would not be able to recognize the picture of a dog or of any other object.

The denominative stage of sign-making, or conceptual naming, is that which is unattainable by animals other than humans, since it requires the faculty of self-consciousness. The problem thus becomes the emergence of such faculty from a common ground of shared semiotic and mental abilities.

Romanes starts his explanation by noting that even in the first three stages of the sign-making faculty the child under three years old distances any other animal in his ability to make signs, even though it does not display any self-consciousness yet. Indeed, Romanes specifies, "thus far no difference of kind can be alleged by our opponents" (1889: 296). In order to distinguish this higher degree of intelligence displayed by the child in the interval between receptual and conceptual ideation, Romanes calls this stage "pre-conceptual ideation" (1889: 299).

During the stage of pre-conceptual ideation, the growing child has a large number of denotative words at its disposal, which it is able to bring into apposition to construct simple sentences. This does not mean that the child has obtained a full command of language: the sentences it forms during this phase are not true conceptual propositions, since they lack the faculty of introspection, but are rather presented to the mind by the "logic of events"

(1889: 299–300). At the same time, even lower animals present certain psychological conditions preparatory to self-consciousness. Their minds enclose a certain number of recepts which manifest an internal activity not wholly dependent from exterior events:

> The phenomena of dreaming, hallucination, home-sickness, pining for absent friends, and so forth, amply demonstrate that in our more intelligent domesticated animals there may be an internal (though unintentional) play of ideation, wherein one image suggests another, this another, and so on, without the need of any immediate associations supplied from present objects of sense. (Romanes 1889: 301)

This kind of receptual ideation in the mind of non-human animals enables them to establish analogies between their own mental states and the mental states of other animals, thus forming a rudimentary form of self-consciousness that Romanes calls "receptual self-consciousness". The corresponding stage in the mind of the child is called "pre-conceptual self-consciousness", and is defined as "a practical recognition of self as an active and feeling agent, without as yet any introspective recognition of that self as an object of knowledge" (*ibid.*).

The passage between this stage and true self-consciousness is conveyed by the growing linguistic abilities of the human infant. The pre-conceptual child has reached a very high level of receptual ideation and is able to deal with a large number of denotative names: this combination enables it to better apprehend the mental states of other human beings and to give them appropriate denotative names, which in turn help it to clear and define them. Thanks to this process, the child becomes capable of comparing past and present mental states as well as of distinguishing its own states from those of other persons, thus starting to speak of itself in the first rather than third person (1889: 302–304).

Only at this point does the child reach the true stage of self-conscious intelligence and denominative sign-making: for a self-conscious agent not only is capable of bestowing names, but is also aware of its own bestowal and of the symbolic nature of those names. Though self-consciousness and denomination first arise in the growing child, most of their development occurs at a later stage, as it takes some more years for it to attain completion.

In the light of the recapitulation theories[6], this same slow and complex process of mutual improvement of language and thought, which we may

[6] For a critical recognition of recapitulation theories see Richards (1992: 17–61).

observe at an ontogenetic level, must have occurred at a phylogenetic level as well. The main problem for psychological phylogenesis, though, seems to be the impossibility for us to have any record of what happened in prehistoric times. It is precisely at this point that Romanes turns to philology in order to account for mental evolution in the human race.

5. The witness of philology: a phylogenetical reply to Max Müller

In chapter 14 of *Mental Evolution in Man*, which is entitled "The witness of philology", Romanes introduces the importance of philological studies for the reconstruction of the history and the development of the human mind. Even though he admits that "the science of historical psychology is destitute of fossils" (Romanes 1888: 238), he believes that a partial exception to this statement must be made thanks to the science of comparative linguistics, which is compared to the science of palaeontology:

> [I]f on the one hand speech gives *ex*pression *to* ideas, on the other hand it receives *im*pressions *from* them [...]. The consequence is that in philology we possess the same kind of unconscious record of the growth and decay of ideas, as is furnished by palaeontology of the growth and decay of species. (*ibid.*)

This assumption was not new in the Victorian era, when the science of language was trying to gain official scientific acknowledgement by analogy with other sciences, chiefly comparative anatomy and geology (see Alter 1999). In this case, the aim was indirect: instead of comparing philology to other sciences in order to increase its prestige, Romanes takes its scientific trustworthiness for granted and uses it in support of comparative psychology.

When dealing with philological facts, Romanes shows the same degree of prudence as Darwin: in a rather similar manner to the great naturalist, Romanes recognizes that he is not in a position to take a strong stand on purely philological questions and that, therefore, he will just put together the results already reached by well-known philologists. Nevertheless, he shows a wide knowledge of the field, which even surpasses the acquaintance displayed by Darwin: in the pages of his book he draws from philologists such as August Pott (1802–1887), Hensleigh Wedgwood, Robert Gordon Latham (1812–1888), Horatio Hale (1817–1896), William Dwight Whitney (1827–1894), Lazarus Geiger (1829–1870), Frederic Farrar, Archibald Henry Sayce (1845–1933), and obviously Max Müller.

Max Müller, in particular, commands our attention because of the reply which Romanes gave him with regard to the origin of roots, and in the light of the already sketched scheme on the emergence of denomination. As already noted, the German philologist claimed language to have begun by primeval roots indicative of innate, general ideas, which were the exclusive endowment of humans. In his recent *Science of Thought* (1887) he had isolated 121 primitive concepts corresponding to as many Sanskrit roots.

Before dealing with the problem of linguistic roots, Romanes makes a general statement on the theory of evolution applied to language. He clearly sees that the problem could be approached in two different ways, namely in relation to the development of tongues and to the faculty of language. In the first case, it would not be difficult to embrace the evolutionary perspective, like Müller and Schleicher, and conclude that all languages developed from primitive roots by way of natural growth. The problem only emerges when a philologist has to account for the origin of those roots:

> [H]e may nevertheless hesitate to conclude, with anything like equal certainty, that these simple elements were themselves developed from still lower ingredients of the sign-making faculty; and hence that not only all languages in particular, but the faculty of language in general, has been the result of natural evolution. (Romanes 1888: 141–142)

This remark well applies to Müller's attitude towards Darwinism, and the problem Romanes has to face is precisely the demonstration of the evolutionary origin of philological roots. He deals with the question at the beginning of chapter 13, entitled "Roots of language" (Romanes 1888: 264–293).

After reporting Müller's list of 121 alleged original concepts, he notes how those concepts bear no witness to the true denominative stage of the sign-making faculty. Though Müller considers them "general ideas", they must be reconnected not to true general (i.e. conceptual) ideation, but rather to the level of receptual and pre-conceptual intelligence: "Scarcely any of them present us with evidence of reflective thought, as distinguished from the naming of objects of sense-perception, or of the simplest forms of activity which are immediately cognizable as such" (Romanes 1888: 273). The proof lies in the fact that even an infant or an animal would present "a full receptual appreciation of the majority of actions which the catalogue includes" (*ibid.*). In Romanes' opinion, Müller's mistake lies precisely in his confusion between denotation and denomination:

> [H]e everywhere regards the bestowing of a name as in itself a sufficient proof of conceptual thought, and therefore constitutes the faculty of denotation, equally with that of denomination, the distinctive criterion of a self-conscious mind. (Romanes 1888: 279)

Moreover, the concepts there expressed in the list seem to refer to an already developed grade of civilization, as is proven by verbs such as "to cook", "to roast", "to measure", and so on. Therefore, Romanes argues that the elements on the list are not the very first germs of thought, nor the first expressions of speech, but only the ultimate results of philological analysis (Romanes 1888: 271). In the interval between the first human utterances and the emergence of Sanskrit roots there must have been a very long period of time featuring unrecorded linguistic expressions:

> The 121 concepts themselves yield overwhelming evidence of belonging to a time *immensurably remote* from that of any speechless progenitor of *Homo sapiens*; and in the enormous interval (whatever it may have been) many successive generations of words must *certainly* have flourished and died. (Romanes 1888: 277)

Of course, the process that governed the rise and fall of primitive words was guided by the principles of natural selection. While Müller only acknowledged natural selection for the linguistic development of innate general roots, Romanes places this process *before* the first emergence of roots themselves: "from the first there must have been a struggle for existence among the really primitive roots – only those surviving which were most fitted to survive as roots, *i.e.* as the parent stems of subsequent word-formations" (Romanes 1888: 275).

6. A new psychological ground for continuism

In chapter 13, Romanes also deals with the crucial problem of the imitative or arbitrary origin of language, which had inflamed the debate before and after Darwin's pronouncement in 1871.

Differently from his mentor, who "cannot doubt" the imitative origin of language, Romanes holds a moderate position on the question. Before pronouncing himself, he recalls the contempt shown towards onomatopoeic and interjectional theories, particularly in the works of Max Müller. The main

problem within imitative theories seemed to be the impossibility for them to account for the origin of language, since the existing imitative names only refer to particular objects. In Romanes' view, though, this is not sufficient proof against imitative theories: every onomatopoeic or interjectional root, which originally denoted a particular meaning, must have gone through subsequent stages of connotative extension, so as to ultimately denote a general meaning. Therefore, the more a root became general, the more it lost its original imitative value, to the point of appearing completely arbitrary (Romanes 1888: 282–285). Even the question of language differences does not pose an insurmountable obstacle to the acceptance of imitative theories. By recalling the opinions of Heymann Steinthal (1823–1899), Sayce, and Farrar on the subject, Romanes explains that it is not needful that the same imitative name be used among people speaking different languages, but that it is sufficient for its imitative character to be recognized by those addressed. Furthermore, there is vast evidence of terms clearly ascribable to an imitative source, as the works of Farrar, Wedgwood, and Charles Nodier (1780–1844) have amply proven (Romanes 1888: 287–288).

After defending the plausibility of imitation in relation to the first origin of language, Romanes joins the other side of the dispute, and denies the dogma according to which language could have sprung from imitation alone. On the contrary, he admits the possibility of arbitrary invention, by recalling the cases of civilized children who happen to invent arbitrary words, the case of the uneducated deaf-mutes who devise non-imitative articulate sounds, the clicks of Hottentots and Bushmen, and even the arbitrary sounds produced by the talking birds (Romanes 1888: 290–292).

The reason why Romanes does not take a strong stand in favour of imitation, as Darwin had done in 1871, may be attributed to his greater focus on psychological devices. In a sense, he did not need imitation in order to defend continuism: while his mentor had seen imitative devices as precious allies to account for continuism, Romanes relies on the shared ground of receptual intelligence, where the semiotic ability of naming receptual objects is not really affected by the use of imitative or arbitrary signs. As he declares at the end of his survey on onomatopoeias and interjections, "the matter is not one which seriously affects the theory of evolution" (Romanes 1888: 292).

Having reached the end of this brief enquiry, it is worth remarking how Romanes's contribution to the study of the human mind is almost a *unicum* in the Victorian philosophical scene: while some authors developed Darwinian evolutionism without giving enough importance to the linguistic issue, and others developed an evolutionary theory of language disregarding

the possibility of continuity between different species, Romanes was probably the only scholar who blended together Darwinian principles and philological findings.

Instead of being discouraged by the difficulties posed by language, he used this in order to demonstrate that the highest mental faculties in the human being do not differ in kind from the mental faculties of other animals. As he states at the end of his 1889 paper for *Brain* magazine, "It is to Language that my opponents have appealed; by Language they are hopelessly condemned" (Romanes 1888: 307).

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