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A pragmatist and evolutionary perspective for a genealogy of Self. Considerations on G. H. Mead's thought on mind, language and society

The philosophical nature of the Darwinian revolution. The so-called Darwinian revolution, which began in 1859 with the publication of *The Origin of Species* (DARWIN 1859) deeply changed the concept of living being that prevailed in the West for more than two thousand years (MAYR 1982; 1991). At least since Aristotle and Plato the organisms were considered as concrete repetitions and living expressions of immutable and eternal forms, conceived as the inner and invisible "nature" of each individual. These "species", «being nothing but the Latin word for form» (MEAD 1936, p.157), were conceived as essences, metaphysical entities that pre-exist individuals and that guide them until the end of their development, namely until the realization of their own "nature".

In *Movements of Thought in the Nineteenth Century* (1936), G.H. Mead wrote that before Darwin «the biological and other sciences […] all explained certain forms which they found, in so far as they did account for them, by saying that they were there to begin with». In particular, «Biological science started with certain living forms» and «assumed the form already there; it even conceived of a complete man as given in the very cells from which the form of the embryo developed. The assumption was that the form was there as a pre-condition of what one finds. This is Aristotelian science» (MEAD 1936, pp.158-9).

The Darwinian "theory of evolution" completely overturns this way of thinking. Such a theory, in fact, is one which undertakes to explain how the forms may arise, considering them as *contingent results* of living processes and not as their absolute pre-conditions or metaphysical "beginnings" or "ends". By its mechanism centered on the concepts of blind variation, inheritance and natural selection, the so-called theory of "descent with modification" is able to explain the origin and transformations of species in a totally natural way, without involving any teleological view. Moreover, the same theory can exclude from the evolutionary process any kind of "preformationist" assumption, which imagines any living form as completely preformed and encapsulated since the days of Creation and which thinks the evolution process as a mere enlargement or unfolding of properties already implicitly contained from the beginning of the process, according to an intelligent design. We should also note that, in describing the development process of living forms, the so-called "preformationist" thinkers used to adopt just the Latin word "*evolutio*", which means, according to its literal sense, the action of unfolding or unrolling something (e.g. a roll of parchment: cf. GOULD, 1977; BARSANTI, 2005; PARRAVICINI, 2012). Conversely, as Mead wrote, «Darwinian evolution undertook to show how, by a certain process, forms themselves might come into being, might arise». In particular, «what this theory is interested in is the evolution of the nature of the object, of the form, in a metaphysical sense. It is this which distinguishes the later theory of evolution from the former, namely, that the actual character of the object, the form or the nature itself, should arise instead of being given» (MEAD, 1936, p.159, 160-1). From this point, Mead could affirm that «The heart of the problem of evolution is the recognition that the process will determine the form according to the conditions within which it goes on» (p.166).

Now, we can say that Darwin has established the project of a genealogy of life forms and human specificity as the new task of biological and anthropological thought while, at the same time, strongly influencing both many fields of scientific enterprise and, of course, philosophical thought itself.

The meanings of chance and the importance of effects. As we know, the Darwinian theory has to do, on one hand, with a normal and frequent occurrence of heritable variations possible in every direction of the morphospace, and, on the other, with the interaction of these variations within the dynamic context formed by the relationship between groups of populations and their environment. This complex interweaving causes a differential survival of some individuals than others within populations. From generation to generation, this process leads to a continuous and gradual transformation in living populations, with the appearance of new species.

Now, in reference to the variations and to the nature of this process it is incorrect to speak about "pure chance", as if the process of variation could happen without laws. Darwin, as well as contemporary biologists, talks about *accidental phenomena*, but they give an epistemological meaning to the adjective "accidental": it indicates the occurrence of complex phenomena which it is almost impossible to predict with certainty, because of human ignorance about the laws that govern them[1]. Scientists are absolutely convinced, for example, that genetic mutations are produced by specific causes (e.g. radiation, chemical mutagens, etc.). Nevertheless, they consider largely useless, as well as almost impossible, to identify the precise reasons that, from time to time, have produced a mutation in a certain portion of DNA, in an infinitesimal interval of time. In fact, from the point of view of the evolutionary theory, it is not important to know which precise causes *have given rise* to a certain variation. Conversely, it is fundamental to examine the *actual consequences* of a variation, once it has been, so to speak, "tested" on the ground of experience, or of specific environmental conditions in which the mutated organic form lives. So, the technical meaning of the terms "accidental" and "spontaneous" - adopted by Darwin to mark the phenomenon of variations - does not refer only to those phenomena of which we cannot determine the cause, but also - and herein the real novelty lies - it applies to those events whose causes, in the research field of evolutionary biology, is not at all necessary to precisely know (PIEVANI 2011, p.113).

These remarks lead us to a second, and far more important sense of the word "chance" as it is employed in the Darwinian theory. Variations are not accidental as to their origin, because, as we already said, they are always produced by some reasons or causes. As Darwin wrote, they are «accidental as far as purpose is concerned» (Darwin to F.J.Wedgwood, 11 Jul. 1861, in BURKHARDT 1985-, vol.9, p.200), that is accidental as far as to the consequences (positive, negative, irrelevant) that they produce in organic forms. In this way, we can say that the reasons for the origin of variations are totally independent from the function, or *meaning*, that the same variations may take once entered in the context of ever changing environmental relationships, in which every variation is subject to the strict sieve of natural selection (PIEVANI 2011, pp.113-4; PARRAVICINI 2009a, p.59 e 2012, §3.3.1). Therefore, the origin and the constant occurrence within populations of these variations in any direction of the morphospace, are to be considered as belonging to a complex of causes completely independent from that concerning the environmental conditions - the so-called "selective pressures" -. This contingent interlacement of different causal levels leads, often on the basis of the advantage produced by certain variations with respect to other, to a differential survival of certain organisms compared to other. So, recalling Stephen Jay Gould's admonition, we can say that the reasons for the origin of structures or behaviors should be distinguished from their utility or current meaning for life (GOULD 2002, ch.XI).

Darwinism and pragmatism. As we just saw, one of the most revolutionary characteristics of Darwin's theory lies in the fact that it explains the evolutionary process by focusing on the *effects* of occurring changes, with special care not to confuse the current utilities of these *results* with the reasons of their *historical origin.* The causes of variations in organic forms can, in practice, be found in a sphere that is totally independent from the selective environmental pressures experienced by every living being (GOULD 2002; PIEVANI 2004; 2011). This allows us to neglect the causes

[1] As Darwin wrote in his *Origin*: "I have hitherto sometimes spoken as if the variations […] had been due to chance. This, of course, is a wholly incorrect expression, but it serves to acknowledge plainly our ignorance of the cause of each particular variation" (DARWIN 1859, p.131).

of variations and to focus on their selected effects and their meaning for life (PIEVANI 2011, p.113). All these aspects were clearly understood by the so-called American Pragmatists and integrated into their philosophy, on the basis of Chauncey Wright's theoretical mediation (SINI 1972; PARRAVICINI 2012). All these philosophers, James and Peirce above all, were highly sensitive and receptive to the Darwinian revolution, since the beginnings at the Metaphysical Club (WIENER 1949; SINI 1972; MENAND 2001; PARRAVICINI 2012). These thinkers philosophically reprocessed the deep meaning of the evolutionary theory in an original and interesting manner, when compared to the contemporary philosophical and biological trends (on relations between Darwinism and Pragmatism see SINI 1972; FABBRICHESI 2009b; FRANZESE 2009; PARRAVICINI 2009a; 2009b; 2011; 2012; for an application of pragmatist thought to the problem of the evolution of mind in biology, see DEACON 1997).

The prominence given to the effects and consequences of a process with respect to the research of the reasons of its origin, so characteristic in the Darwinian epistemology, is to be considered, in general, a central element of the pragmatist approach. As William James wrote, pragmatism can be defined as «*the attitude of looking away from first things, principles, 'categories', supposed necessities; and of looking towards the last things, fruits, consequences, facts*» (JAMES, 1978, p.32, author's italics). And concerning Peirce, it is almost superfluous to recall that the role of the effects and consequences is essential to understand his pragmatic maxim and the general structure of his "pragmaticism"[2].

Now, as I have shown in a recent publication (PARRAVICINI 2012), this basic attitude may be actually connected with the general Darwinian epistemology right through the thought of C. Wright, the "coryphaeus" of the Metaphysical Club. In the 60s and 70s, while studying the theory of evolution, Wright tried to combine it with J.S.Mill's utilitarianism. From this attempt, he developed his original "forward looking" empiricism, putting it to the test by his frequent discussions especially with Peirce and James. In this way he worked out a conception very similar to the general pragmatist approach which would be born shortly thereafter from his younger friends[3]. In particular, Wright has shed light on two key points that concern both the role of hypotheses in the method of science and the analysis of the evolutionary processes of living beings, including humans: firstly, the new importance of "results" and "effects" and secondly, the irrelevance of the "origin ", so grasping very well the overturning of the "transcendental" logic operated by Darwin's theory (see WRIGHT 1877, pp. 43-96 and pp.199-266; cf. PARRAVICINI 2012, ch. 2 & 3).

Emergences, novelties, contingency: Mead's evolutionary epistemology. The pragmatist trend, influenced by Wright, launched by James and Peirce, and continued by Dewey and Mead, revealed that these thinkers had not only understood the new importance of "effects," but also the deepest core of the revolutionary "Darwinian logic" with regard to teleological and metaphysical thought: said logic establishes that every variation can cause unpredictable a priori effects which, despite being "implicit" in antecedent events, cannot be foreseen but only reconstructed *a posteriori*. This compels us to start from consequences and signs in tracing the hypothetical initial conditions, applying that which Carlo Ginzburg has called «retrospective prophecies» (GINZBURG 1983). Organic variations and pragmatically interpreted ideas rise to the role of *looking-forward experimental hypotheses,* that acquire *significance* only once they have faced the testing ground of experience or of natural economy by verifying their strength through the tangible effects they produce (FABBRICHESI 2009b; PARRAVICINI 2009b; 2012).

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[2] Peirce's "pragmatic maxim" is in CP 5.402. On this pre-eminence of effects and consequences for the pragmatist thought, cf. also FABBRICHESI 2009a; 2009b and 2010a.

[3] The term "forward-looking empiricism" in reference to Wright's general epistemology was coined by Edward Madden (see MADDEN 1964, pp.124-126). On the theoretically close relationship between Wright's empiricism, Darwinism and pragmatism, and also between Wright and the other members of the Metaphysical Club, cf. SINI 1972 and PARRAVICINI 2012.

According to Wright, the event itself of evolutionary change, unpredictable when it happens, can assume the features of an *authentic novelty* compared to the characteristics of the elements which give rise to it after having combined each other. In chemical processes, we often observe the emergence of «new properties or new powers, which, so far as the conditions of their appearance were previously known, did not follow from antecedent conditions, except in an incidental manner, - that is, in a manner *not then foreseen* to be involved in them» (WRIGHT 1877, p.201). Similarly, Wright noted that in living processes unpredictable evolutionary *novelties* can always emerge from a set of conditions which, taken individually, have characteristics *qualitatively different* from the result of their combination. On the other hand, Wright argued, we should not see any miraculous event before the «appearance of a really new power in *nature*». This event is rather to be thought as «involved potentially in previous phenomena», as in the case of the power of flight in the first birds or the self-consciousness in our apelike progenitors (WRIGHT 1877, pp.200-1). Any combination of events, we might say, is always open to *new emerging possibilities*. In a process of this kind we can only try, rationally and a-posteriori, to reconstruct the conditions which, combining together, have made possible the occurrence of the emerging novelty. In this way we can bring the discontinuity of a new event within the continuous tissue of the causal series.

This kind of *reconstruction process* of the conditions that have produced the studied event is not very different, if we think about, from that kind of inference that Peirce called "retroduction", namely the attempt to bring an unknown phenomenon to the case of a known. As Peirce wrote: «The surprising fact, C, is observed; but if A were true, C would be a matter of course. Hence, there is reason to suspect that A is true» (CP 5.189). In this sense, we could say that the logic of *retroduction*, which fully supports the pragmatist philosophy as a guiding principle, can also be seen like the principle underlying the «retrospective prophecies» of the Darwinian scientist.

On the pragmatist front, G.H. Mead expressed an "emergentist" vision very close to Wright's. In his *Philosophy of the Present* (MEAD 1932) Mead maintains that «it is the task of the philosophy of today to bring into congruence» the idea of «universality of determination which is the text of modern science, and the emergence of the novel» (MEAD 2002, pp.45-46). Once the new event has happened, Mead notes, we immediately «set about rationalizing it, that is, we undertake to show that it, or at least the conditions that determine its appearance, can be found in the past that lay behind it, [….] a more comprehensive past that does lead up to it». Now, the key feature of the emerging phenomenon, such as life or human consciousness, is that it «happens under determining conditions […], but these conditions never determine completely the "what it is"» (MEAD 2002, p.46). To illustrate his idea of "emergent event", Mead established an analogy with the chemical phenomena, just as Wright did, but, in addition, he clearly affirmed that «Even the statement of the past within which the emergent appeared is inevitably made from the standpoint of a world within which the emergent is itself a condition as well as a conditioned factor» (*ibid*). So, each new present is not only a novelty that is to be "retroductively" reconnected to a continuity of known antecedent conditions, but in addition, when a conditioning past is recognized, it appears in turn conditioned, modified, *reaffirmed* by the perspective of the present emergence. Thus, the "retroductive" movement also requires the actual *production* of a past (and of a future, we might add) each time getting a little different, because inevitably reconstructed on the basis of the changing present perspective, from which our gaze is re-direct in the direction of the antecedent conditions of the present event[4].

In this sense, we could say that if we conceive the logic of retroduction - which fully supports, as a guiding principle, the pragmatist philosophy[5] - as a scientific process of a rational reconstruction of the origin of some event – namely, a reconstruction of the conditions that produced the stu-

[4] In addition to the quoted text of 1932, on the ideas of emergence and novelty in Mead see also MEAD 1929 and MEAD 1938, pp.412-426.

[5] As Giovanni Maddalena argues ("Introduzione", in PEIRCE 2008, p.36), «[…] nella retroduzione si scopre un elemento *nuovo*. È un ragionamento che amplia la conoscenza da un punto di vista qualitativo e non quantitativo. […] Il pragmatismo è sorretto interamente dalla logica della retroduzione, perché il passaggio dal significato ai concepibili effetti e viceversa è garantito dal principio-guida retroduttivo».

died event in an effort to bring it back to the evolutionary continuity of natural phenomena – we will see that it coincides with the principle that underlies the "retrospective prophecy" of the modern Darwinian scientists and evolutionary biologists.

For them, in fact, living phenomena, to quote Simon, are something where «the whole is more than the sum of the parts […] in the important pragmatic sense that, given the properties of the parts and the laws of their interaction, it is not a trivial matter to infer the properties of the whole» (MAYR 1982, p.53). According to today's biologists, as stated by Mayr quoting Popper, «We live in a universe of emergent novelty», in which «such emergence is quite universal» (p.63).

In a similar way, as noted by John McKinney, Mead argued that «for the biologist […] to deny the reality of the emergence of the life process […], to deny reality to the continuity of the life process and the conditions under which it maintains itself is to put the biologist out of business because he has eliminated the very perspective from which biology works» (McKINNEY 1955, p.270).

In Mead (1932; 1934; 1938), this notion of "emergence" or "novelty" produces another pillar of contemporary biology (GOULD 1989; MAYR 1982, pp.57-59), namely the unpredictability and radical contingency of evolutionary events and the possibility of reconstructing the triggers of said events only *a posteriori*, consistently with the aforementioned "retroductive" model[6]. For example Mead wrote that

> organisms [...] have a content which is more than the summation of the physical particles and their motions into which a mechanical science analyzes them [...]. And the objects in the environment have contents which are more than the sum of the motions of physical particles. They are food, enemies, obstacles, protections, etc. These contents always involve the carrying-out of the life-processes of the organisms. In other words, they always involve a future, and a future involves an experience within which that which will happen [...] is uncertain. That which will happen is always different in some respect from what has happened, and this different quality is something that cannot be predicted (MEAD 1938, p.413).

Subsequently Mead added: «While this difference is unpredictable, we assume that the conditions for it can, after its appearance, be found in the analysis of the situation as it exists. The difference is never of an irrational character, but its rational character does not imply that the conditions of what is novel in it existed in the previous experience, though the structure of that experience can be now assimilated to the structure of the present experience» (MEAD 1938, p.420).

In conclusion we can say that in Mead's epistemology, «All the novelties of living experience are as novelties essential parts in the universe; the fact that when they arose they were unpredictable means that in the universe as then existing they were not determinable, nor in the universe as then existing did there exist the conditions that were the sufficient reasons for their appearing» (MEAD 1938, pp.419-420).

Mead on the emergence of mind and self. This entirely evolutionary vision, combined with a general pragmatist philosophy in which the strategic notions of "sign," "gesture" and "habit of conduct" assume capital importance, appears the heart of the Meadian approach to the basic problem of a genealogy of "mind" and "self". It must be said that, by grafting a pragmatist vision onto biological concepts taken from Darwinian tradition, Mead's genealogical approach acquires characteristics that are very different from a biologistic framework. In the wake of the new authority given to Darwinian thought by the "expressive gesture" (DARWIN 1872), and by pragmatically reprocessing said notion in a non-metaphysical direction, Mead (1934) centres his genealogy of human consciousness on a notion of "gesture" viewed as the unconscious bearer of embodied significances, and considered as part of a social act - in which living forms put into practice a sort of conversation of gestures. At the same time, Mead distanced himself from the error committed by Darwin in his

[6] On the idea of "contingency", see MEAD 1938, pp.313-320 and 412-420.

famous work on *The expression of the emotions* (1872), where the British scientist postulated the presence of a "mind" behind the gestural expressions, thus confusing the outcome of a process with its origin and assuming from the beginning what was to be explained evolutionarily.

Conversely, Mead attempts to see the *emergence* of the human "mind" as a *side-effect* of the *gestural writing* of bodies and, particularly, of a new use of the old vocal gesture (S.J.Gould would call this an *exapted spandrel*; see GOULD, 1982; 2002). Based on the special conditions offered by the features of the vocal gesture – that is an *autophonic and autographic* gesture, both social and reflective - Mead was able to propose an interesting and modern evolutionary reconstruction of the *new* and *emerging event* of "Self" (SINI, 1991; 1996; DI MARTINO, 2005). These peculiar characteristics of the voice give it the capacity to turn Self into an *object*, while concurrently and reflectively producing a *subject*, thus overcoming with a leap any ontological dualism typical of Descartes. It is the voice «which does give one this capacity for answering to one's own stimulus as another would answer» (MEAD 1934, p.66) by objectivising both "self" and the "other." Instead, gestures initially trigger in the individual who performs them and in the other who responds different and divergent attitudes (as stimulus and response), in a «conversation of gestures» in which mutual adjustments have been observed, which «in turn, stimulate other responses». (MEAD 1996, p.68; see also RIZZOLATTI- SINIGAGLIA 2006, p.148-9).

In short, Mead turns Peirce's habits of conduct into the actual *evolutionary medium* to genealogically reconstruct the *emergence* of the symbolic universal, because they are the carriers, in the animal, of a real incarnate significance that is «internalized» and expressed as "knowledge" through the voice. The mind, says Mead, is «an external, overt, physical, or physiological process going on in the actual field of social experience» (1934, p.79). To build a theory of a genealogy of the self-conscious human mind, Mead deems that the central nature given to the dimension of "habits" and, particularly, to the new symbolic use of the vocal gesture also implies the unquestionable preeminence of a social and political dimension of the community in which the subject is formed, and without which no Self can ever be produced.

The social element - which from Mead's thought refers to deeper philosophical roots in the thought of Peirce and Royce, Mead's teacher (SINI 1972; DI MARTINO 2005; FABBRICHESI 2010b) - must, therefore, be viewed as the *primum* of the formation process of the human mind, one that even precedes the linguistic and gestural component: «the social process is presupposed in order to render thought and communication possible» (MEAD 1934, p.260). Mead explains that the uniqueness of human symbolic language lies in the possibility of internalization through the *vox significativa*, of the gestures and attitudes of others, without imitating them, but by "taking the role of the others" towards one's own gestures. There can be no symbolic language and, therefore, no self-consciousness, if the subject performing the gesture does not respond to it in the same way as others do, and this implies the emitter's assumption of the other's response to his own gesture. The human mind is merely a dynamic whole of social response patterns that are internalized and available, and every subject reflects and incarnates the attitude of the entire community. «It is impossible to conceive of a self arising outside of social experience» (*ivi*, p.140); in fact, it is the «human society» that «endows the human individual with a mind» (p.300), and every individual has, therefore, «a mind whose inner structure he has taken from the community to which he belongs» (p.270).

However it must also be specified that Mead did not consider the Individual Self as something that can be traced to the Other Selves. Instead, it embodies the dynamic relations that are established between the individual "I" - mirrored in the concrete response of the body to a certain social situation - and the "Me" - which represents the same social situation just as it is internalized and interpreted by the individual on the basis of the past experiences of the community (pp.173-178). The often conflicting cohabitation of these active components within Self, namely components that are related to the more individual and egotistic-asocial dimension of every man, and those which belong to his most social and cooperative side, mirrors in the embodied mind of each one the conflicts and tensions that are experienced in the political and social framework of the community (part IV).

Recalling Nietzsche, Mead observes that said contrast is often a useful stimulus for social and individual development. (MEAD 1934, pp.303-311; see FABBRICHESI, 2009a)

Based on the above, we can conclude by underscoring the point that Mead's conception, incorporated within the evolutionary and pragmatist epistemological framework that we have analyzed, sheds light on a sort of "third path" between rationalism and empiricism that allows to entirely rethink in a non-metaphysical and non-adaptationist way the issue of an interlacing between body and mind, nature and language, individual and society, habits and emergence of the self.

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