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On the biological foundations of the collective unconscious

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Abstract

Jung lived in a period of remarkable scientific advances in biology, including the theories of evolution and natural selection, the discovery of the first hominid fossils, and the rise of scientific anthropology. His research evolved in dialogue with the discoveries considered most plausible by science, leading to a constant reformulation and refinement of concepts. We argue that the mature form of his psychology can be understood as an attempt to integrate the major scientific breakthroughs of his time, while, ahead of his era, providing theoretical foundations for findings that contemporary neuroscience is only beginning to confirm. ■

Keywords: natural selection; collective unconscious; evolutionary psychology.

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Sobre as bases biológicas do inconsciente coletivo

Resumo

Jung viveu em um período de expressivos avanços científicos na Biologia, incluindo as teorias da evolução e da seleção natural, a descoberta dos primeiros fósseis de hominídeos e o surgimento da antropologia científica. Sua pesquisa evoluiu em diálogo com as descobertas consideradas mais plausíveis pela ciência, resultando em uma constante reformulação e aprimoramento conceitual. Argumentamos que a forma madura de sua psicologia pode ser interpretada como uma tentativa de integrar as grandes descobertas científicas de seu tempo, ao mesmo tempo em que, antecipando-se à sua época, forneceu bases teóricas para achados que a neurociência contemporânea começa a confirmar. ■

Palavras-chave: seleção natural; inconsciente coletivo; psicologia evolutiva.

Sobre las bases biológicas del inconsciente colectivo

Resumen

Jung vivió en una época de notables avances científicos en Biología, entre ellos las teorías de la evolución y la selección natural, el descubrimiento de los primeros fósiles de homínidos y el surgimiento de la antropología científica. Su investigación evolucionó en diálogo con los descubrimientos considerados más plausibles por la ciencia, lo que llevó a una constante reformulación y perfeccionamiento conceptual. Sostenemos que la forma madura de su psicología puede entenderse como un intento de integrar los grandes descubrimientos científicos de su tiempo y, adelantándose a su época, ofrecer bases teóricas para hallazgos que la neurociencia contemporánea apenas comienza a confirmar. ■

Palabras-clave: selección natural; inconsciente colectivo; psicología evolutiva.

Introduction[1]

This article presents a possible conceptual path for analytical psychology in the process of developing its basic concept: the collective unconscious, specifically in the possibility of its scientific-biological foundation. Based on the works of Shamdasani (2003), Clark (2025), and Alcaro *et al.* (2017), we will argue that the theory of archetypes was not constructed by Jung merely as a theoretical construct, but rather as a psychic counterpart of physiological substrates, representing the culmination of a series of evolutionary theories (more specifically German) to which he was exposed during his training, such as the comparative anatomy of the *Naturphilosophen*[2] and the embryology of Ernst Haeckel (1895/1905).

Jung lived through a period of great scientific advances in biology that ultimately influenced his work – among them the theories of evolution and natural selection, the discovery of the first hominid fossils, and the birth of scientific anthropology. Thus, his research gradually refined in line with the discoveries that science indicated as most probable, resulting

[1] All translations presented are by the authors.

[2] "However, the conception of human evolution he (Jung) was exposed to (...) was in many senses one that developed out of German, as opposed to Anglo-American traditions in biology (...), which focused on comparative anatomy and developmental embryology, can be traced back to Kant, Goethe and the *Naturphilosophen*" (Clark, 2025, p. 13).

in a dynamic in which concepts are constantly reconstructed and improved. We will present the thesis that the mature version of his psychology can be understood as an attempt to reconcile the great scientific discoveries of his time – and, as he simultaneously moved beyond them, he was also able to theoretically substantiate findings that contemporary neuroscience is only now beginning to confirm.

As Shamdasani (2003) states, at the beginning of his career, Jung presented a certain alignment with vitalism, as seen in the Zofingia lectures[3], which was gradually abandoned in favor of Jean-Baptiste de Lamarck's theory of the inheritance of acquired characteristics. However, at the end of that century, Lamarck would be considered outdated, destroying the early biological bases that Jung sought to support the conjectures arising from his clinical observations regarding a possible heredity of psychological characteristics.

His interest in Kant brought him closer to the thinking of the *Naturphilosophen*[4], a group of philosophers, physicians, biologists, and writers (among them Goethe and Schelling) from post-Enlightenment Romanticism, who undertook important research in the fields of embryology and comparative anatomy. This research influenced a generation of scientists, notably Haeckel and Darwin, who would, each in their own way, influence Jung's understanding of human biology, leading him to conceive the collective unconscious no longer as a set of materially inherited memories, but rather as a set of inherited conditions of possibility for experience and mental development.

In this context, the theory of natural selection represented a turning point, as it presented undeniable criticisms of the theories of organic memory[5], which were also the initial foundations of the theory of archetypes. From then on, Romantic influence, Darwin's work, and Haeckel's theories became the biological foundations of the Jungian model of layered psyche development[6]. After decades in which Jungian psychology confronted materialist somatic reductionism, we are now witnessing the rediscovery of the *Naturphilosophen*, which, combined with advances in neuroscience, fosters a renewed appreciation of Jung's work and invites us to advance the dynamic body of knowledge of analytical psychology.

Theories of memory inheritance

The state of the art on memory available to Jung ranged from the Platonic idea of reminiscence to the concepts of organic memory proposed by Ribot (1897) and Stanley Hall (1885), which characterized the turn of the 19th to the 20th century. The latter derived from two important theories of biology: the inheritance of acquired characteristics by Jean-Baptiste de Lamarck (1809/1984) and the biogenetic law by Ernst Haeckel (1895/1905).

As a young therapist, Jung observed common psychological traits in his patients, which he found explicable through the concept of organic memory. A famous case is found in his 1902 dissertation, where he reports the similarity of a passage from *Thus Spoke Zarathustra* with an excerpt from an early work by Justinus Kerner (Jung, 1970/1957). When approached, Nietzsche's sister confirmed that he had been exposed to this work during his adolescence. Jung understands the case as an "involuntary copy", derived from memories that cannot be accessed directly, but only through mental processes of creation.

Jung had also observed that many themes and figures from ancient mythology frequently appeared

[3] "Indication of this is given by the checking records at the University of Basel Library together with lectures that he presented before a student fraternity, called the Zofingia Society. (…) during this period, he became acquainted with neovitalistic theories" (Samdasani, 2003, p. 197).

[4] "While this tradition was neglected for most of the twentieth century, recent developments in experimental and theoretical biology have led to a reappraisal of the *Naturphilosophen* and their emphasis on development and anatomical archetypes shared by a diverse range of species" (Clark, 2025, p. 13).

[5] "(…) the concept that everything that an individual experiences is registered and capable of being revived had become widespread at the end of the nineteenth century (…) What Jung was proposing was a bold extension of this conception beyond the individual's memory to encompass the memory of mankind" (Shamdasani, 2003, p. 233).

[6] "Jung conceived of the psyche in terms of geological and archaeological strata, with the unconscious and our ancient hominid and primate ancestors representing more ancient layers of the brain than more recently evolved structures" (Clark, 2025, p. 14).

in patients' dreams and hallucinations. While other therapeutics viewed such manifestations as repressible symptoms, Jung proposed their interpretability. In a letter to Freud in 1909, he explains that his research sought a phylogenetic basis for neuroses, one that could be grounded in evolutionary terms while also being consistent with his clinical observations, which pointed to the existence of memories that could not have their origin in the individual's personal experiences, using as examples general mythological motifs that appeared in patients' dreams or that were frequently represented in literary works:

> Now I am reading the 4 volumes of old Creuzer, where there is a huge mass of material. All my delight in archaeology (buried for years) has sprung into life again. Rich lodes open up for the phylogenetic basis of the theory of neurosis (Mcguire, 1974/1909, p. 258).

This search for a phylogenetic basis was an aspiration of several researchers, a highly influential case study for Jung being that of Theodor Flournoy regarding the patient Hélène Smith (Flournoy, 1994/1900), a young woman, supposedly a medium, who recounted, in great detail, several stories of souls from Earth transmigrating to the planet Mars, souls who remained in constant contact with her. Her descriptions were so realistic that she even created the Martian language. Upon analyzing them, Flournoy noticed similarities between the "Martian" language and French, attributing these creations to a process of imagination mixed with what he called *cryptomnesia* – memories we demonstrate we possess, but without recalling how we acquired them.

> But by this name of cryptomnesia, or resurrection of latent memories, two singularly different things are understood. For me it is only a question of memories of her present life; and I see nothing of the supernormal in that (Flournoy, 1994/1900, p. 173).

In this context, the postulation of Jung's theory of the Collective Unconscious presented itself as an expansion of Flournoy's concept of cryptomnesia[7], by arguing that it wasn't "only memories of impressions gained during one's lifetime that reappeared (...), but also memories of the race" (Shamdasani, 2003, p. 218), which contained motifs originating from the accumulated and repeated development of all humanity, clearly influenced by theories of organic memory and inheritance of acquired characteristics. Thus, it substantiates based on Lamarck what Freud called "archaic residues", understanding "history as something accumulated by a race and stored within an individual" (Otis, 1994, *apud* Shamdasani, 2003, p. 184), transferred generationally.

However, the evidence presented in *On the Origin of Species* refuted the aforementioned theories of inherited memory, which had served as the foundation for this initial conception of the collective unconscious. At the same time, the discoveries of the first fossils of Homo Erectus and Neanderthals in the late 19th century (Clark, 2025) – fossils to which Jung had access during his formative years at the University of Basel[8] – further reinforced Darwin's arguments.

Natural selection theory: from enemy to ally

Jung's initial reaction to the theory of natural selection was one of rejection, due primarily to his disdain for the scientific materialism that was prevalent at the turn of the century (Jung, 1896/1983). However, this impression proved short-lived; upon encountering the theories of Haeckel and the *Naturphilosophen*, his position shifted radically. By the time he began working

[7] "In essence, what Jung was proposing was a radical extension of Flournoy's concept of cryptomnesia. He was claiming that it wasn't only memories of impressions gained during one's lifetime that reappeared in unrecognized forms, but also memories of the race" (Shamdasani, 2003, p. 218).

[8] "When Jung was a student, he worked as an assistant in the Anatomical Institute at Basel University. Significantly, it was his familiarity with the fossils of early humans at this time that seems to have formed the associations with the skulls in the dream. And it is at this time that his interest in comparative anatomy and paleoanthropology seems to have merged" (Clark, 2025, p. 39).

at the Burghölzli as Eugen Bleuler's assistant, his biological discourse had already taken a form closer to that of his mature work – seeking to ground the mind in biology without reducing it to the merely physiological. This led him to formulate a distinction between the historical layers of the individual mind: the socially acquired layer (the "collective consciousness", a term borrowed from French sociology[9]) and the impersonal layer, inherited:

> Individual consciousness resulted from the nature of organic and psychic being taken in isolation (...). Thus the collective consciousness was made up of collective representations, which expressed how the group thought of itself. These representations generally took the form of myths, legends and religious conceptions. Collective representations were not innate, but were the result of history and collective action (Shamdasani, 2003, p. 289-290).

Moving forward to *Symbols of Transformation* (2012/1952), the revised edition of the 1912 original and contemporary with his break from Freud, Jung draws parallels between the biological adaptation of the human species and mythical-symbolic thought. Haeckel's biogenetic law[10] of embryology is also adopted as valid in psychology, and the most ancient characteristics of the mind are said to be the affective basis of the spontaneous symbolic motifs Jung observed emerging in his patients: "so our minds, which have apparently outgrown those archaic impulses, still bear the marks of the evolutionary stages we have traversed, and re-echo the dim bygone in dreams and fantasies" (Jung, 1976b/1952, §36). Here we see the beginning of the break with theories of organic memory by placing the storage of impersonal memories within the scope of psychological experience, and no longer within the somatic, reinforcing his position against the reducibility of psychology to biology:

> This idea is not at all strange; we know it quite well from comparative anatomy and from evolution, which shows that the structure and function of the human body are the result of a series of embryonic mutations corresponding to similar mutations in our racial history. The supposition that there may also be in psychology a correspondence between ontogenesis and phylogenesis therefore seems justified (Jung, 1976b/1952, §26).

As early as 1916, in his lecture *The Structure of the Unconscious* (Jung, 2012/1916), published as appendix II on Vol. 7 of the Collected Works, Jung presented with greater clarity his division of the mind into two layers: the personal unconscious, which contains memories acquired over the course of an individual's life, and the impersonal unconscious, which contains the mental counterpart of the body's biological evolution. The former arises from the affective impressions of personal experience, whereas the latter is, in a certain sense, inherited, as it manifests distinctly impersonal motives. In later revisions of the lecture, seeking to distance himself from the idea of the inheritance of acquired characteristics, he added clarifications stating that such characteristics are formed "on the one hand of unconscious perceptions of external reality and, on the other, of all the residues of the phylogenetic perceptive and adaptive functions" (Jung, 1966/1916, §507), now aligning himself more closely with the theory of natural selection:

> (....) that part of the unconscious which consists on the one hand of unconscious perceptions of external reality and, on the other, of all the residues of the phylogenetic

[9] "What I hope the above discussion makes clear is that there are unexplored aspects of Jung's work that not only show deep affinities with Durkheim and the French sociological tradition, but also contemporary evolutionary theory" (Clark, 2025, p. 120).

[10] "In this sense, cognitive phylogenesis seems to have occurred through the evolution of ontogeny. Or as Brian Hall has expressed the notion: ontogeny does not recapitulate phylogeny; it creates phylogeny" (Clark, 2025, p. 127).

> perceptive and adaptive functions. A reconstruction of the unconscious view of the world would yield a picture showing how external reality has been perceived from time immemorial. The collective unconscious contains, or is, an historical mirror-image of the world. It too is a world, but a world of images (Jung, 1966/1928, §507).

At this point we reach the limit of what Jung himself developed regarding the alignment of his psychology with biology. To try to demonstrate what his mature position on the subject might have been, it is worth quoting Michael Fordham, who on May 30, 1958, wrote directly to Jung questioning the validity of the biological foundations he had discussed in his earlier lectures in light of established biological theories, since both Mendel's gene theory (1866) and Weismann's germ plasm theory (1892) ruled out the possibility of inheritance of acquired characteristics.

In response, Jung acknowledged that his theoretical foundations were more philosophical than biological, admitting that he had largely set biology aside, as the knowledge available at the time regarding the physiology of the mind was still insufficient to ground it in biological terms. For psychology, it was indifferent whether archetypes were transmitted by "tradition, migration or inheritance" (Shamdasani, 2003, p. 267), since they are an empirical concept analogous to instincts, which are indeed, demonstrably, inherited.

The consolidation of the theory of natural selection, together with the abandonment of the concept of organic memory in biology, led Jung to move away from attempts to ground archetypes in biological terms. He thus began to describe them as analogous to Kant's categories – not inherited memories, but rather innate conditions of possibility for the formation of representations:

> It should on no account be imagined that there are such things as inherited ideas. Of that there can be no question. There are, however, innate possibilities of ideas, a priori conditions for fantasy-production, which are somewhat similar to the Kantian categories (Jung, 1964/1928, §14).

This shift toward transcendental philosophy[11], as it seeks to re-found its ideas about the origin of impersonal memories, renders the term "memory" itself inconsistent, as they come to be understood as content, while the archetypes of the collective unconscious are pure form – *a priori* conditions of mental experience – corresponding to the psychic counterpart of instincts. In this sense, we can say that complex psychology presents itself as a consistent model of "transcendental evolutionary psychology", as it studies and understands the conditions of possibility of mental experience as psychic counterparts to physical experiences, which are the result of the transmission of biological characteristics selected by adaptation to the environment. The archetype, or primordial image, is a "psychic expression of an anatomically and physiologically determined disposition" (Jung, *apud* Shamdasani, 2003, p. 234).

These anatomical-physiological dispositions determine the possibilities of experience that are available, and which, from an ontological perspective, affect us based on a biological cerebral substrate and its affective structure. Thus, the collective unconscious would be composed of the *a priori* conditions of the mind itself, expanding the scope of Kantian categories, which would have reduced the broad set of conditions of possibility of mental experiences to the set of logical categories of rational thought. This equation of the ontological status of primordial images with transcendental categories served to demonstrate his understanding that mental contents

[11] Kant rigorously distinguishes the transcendental sense – linked to *a priori* the conditions of the possibility of experience – from the transcendent use, which illegitimately and dogmatically exceeds the domain of the empirical, when he states that "(...) the word transcendental (...) does not mean something that goes beyond all experience, but something which, though it precedes (a priori) all experience, is not destined for anything more than solely to make cognition by experience possible. If these concepts step beyond experience, their use is called transcendent, in distinction from the immanent use, i.e. use limited to experience" (Kant, 2004, p. 174).

cannot be inherited, but conditions of possibility of experiencing contents can:

> Naturally the concrete contents are lacking, but the potential contents are given a priori by the inherited and preformed functional disposition. This is simply the product of the brain's functioning throughout the whole ancestral line, a deposit of phylogenetic experiences and attempts at adaptation (Jung, 1971/1921, §512).

Turning to the neuroscience of recent decades, it becomes evident that some of Jung's fundamental intuitions – including the concept of the collective unconscious – may in fact be consonant with the functioning of the brain's biological processes (Alcaro *et al.*, 2017). Jung could not have foreseen that advances in genetics would show that Haeckel's embryology[12] and the comparative anatomy of the *Naturphilosophen* were much more correct than could have been imagined in their time[13], making it necessary to revisit his work, and in a way rethink the way we understand the evolutionary foundations implicit in it.

Analytical psychology and Contemporary Biology

In addition to Jung himself, those who carried on his work also neglected to give due importance to the biological-evolutionary dimension of his ideas, generally omitting it from their subsequent developments. According to Clark (2025)[14], one of the main reasons is due to the false assumption that all the biological theories Jung relied on were incorrect, such as the ideas of Haeckel and the *Naturphilosophen* (Clark, 2025). Current neuroscience has not only revalidated comparative anatomy and developmental embryology, but also many of the basic concepts of analytical psychology, such as the affective nature of the unconscious, the phylogenetic process of development of the conscious ego from a previous unconscious state (Clark, 2025), as well as heterochrony serving as the basis for such a process. Jung's effort to conceive a scientific model that overcomes the reductionism of Enlightenment science is also notable, presenting himself as a precursor of a way of doing science that can be summarized in the statement: "feelings are just as cognitive as any other perceptual image, and just as dependent on cerebral-cortex processing as any other image" (Damasio, 1994, p. 158).

This model opposes the Cartesian separation between mind and body, understanding mental life as a counterpart to perceptions originating from the biological substrate, taking into account inherited elements (archetypes and instincts) and acquired elements (collective consciousness and complexes), making each individual a unique dynamic, criticizing the supposed "third-person" scientific view, which excludes individualities in the name of generalities. Such pioneering work inevitably produced conjectures characterized by typical, balanced, and adaptable descriptions, which could be examined through a synthetic and integrative mode of thought, attentive to their dynamic action, and allowing for open possibilities of understanding psychological phenomena more comprehensively than biology alone can offer. It should be emphasized that Jung's critique of the scientific "third-person" perspective is not directed at scientific inquiry, but at the epistemological assumption that psychic phenomena can be understood through objectifying frameworks abstracted from the

[12] "These critiques are based on a number of misconceptions. Firstly, the above authors claim Haeckel's biogenetic law has been discredited by the scientific community. This is not the case - Haeckel's ideas are still considered relevant by evolutionary developmental biologists" (Clark, 2025, p. 68).

[13] "Although Goethe and the Naturphilosophen lacked an understanding of genes, their theories based on anatomical archetypes have stood the test of time and have been verified by modern evolutionary genetics" (Clark, 2025, p. 10).

[14] "One of the major arguments of this book is that the traditions that formed Jung's evolutionary thinking, in terms of both developmental biology and anthropology, were effectively rejected by major currents in twentieth-century scientific thought. Jungian scholars followed these paradigmatic trends and as a consequence they often rejected Jung's evolutionary thinking, assuming its fundamental assumptions were invalid" (Clark, 2025, p. 57).

individual. Such a perspective tends to replace the concrete singularity of psychic life with typological generalities, thereby losing sight of the primary manifestation of the psychic as a phenomenon for an experiential self (first-person perspective)[15].

According to Alcaro *et al.* (2017), we can point to at least three fundamental ideas of Jung's that are being revalidated by the discoveries of neuroscience: the functioning of complexes, the affective character of the Self, and its centralizing and organizing function for mental processes. They also highlight a quote in which Jung (1976a/1958, §582) presents his conjecture about the possible location of the biological substrate of the structure of the Self archetype, pointing to the base of the brain, a set of what we now call subcortical structures (Alcaro *et al.*, 2017). Their anatomically central location and their deeply affective character (close to the spinal cord) would place such systems anatomically close to the control mechanisms of our most basic physiological functions.

Walters (1994) points to possible correspondences between some neuroscience findings and archetype theory. Seeking a testable framework for the possible adaptive functions of the mind, he attempts to draw an analogy between the main archetypes and some well-tested neurological theories, arguing that Jung's biological ideas had a predominantly Lamarckian bias (a theory rejected by Clark and Panksepp), expressed metaphorically and incompletely, insofar as they fail to describe adaptive problems in the ancestral environment that would lead to specific adaptations. Finally, he argues that archetype theory anticipated certain evolutionary perspectives, insofar as it sought "to define universal psychological adaptations that have evolved by natural selection, and to determine how such adaptations function in the contemporary environment" (Walters, 1994, p. 288).

At present[16] we can relate the discussion to the hegemonic neuro-cognitive paradigm, which attributes the process of affective categorization of the psyche and what we would call the Self solely to higher cortical structures[17], promoting the "belief that consciousness only emerges from within the thalamocortical networks" (Alcaro *et al.*, 2017, p. 2). However, observations[18] contradict this paradigm, pointing to a structural functioning closer to what George Northoff called the "phenomenal minimal self" (Northoff *et al.*, 2006, p. 2), a kind of anoetic proto-self, of an affective nature and structuring of higher cognitive processes. Observations in decorticated animals and hydrocephalic humans suggest that the biological substrate for this most elementary level of consciousness is anatomically located precisely in the subcortical structures that Jung identified as a possible biological origin of the Self.

This set of structures physically consists of systems that connect the upper cerebral hemispheres to the spinal cord and the body, reaching functional maturity soon after birth (in contrast to the higher structures, which develop throughout the first decades of life), and serving as a kind of communicative interface for stimuli between the biological basis of the body and the areas related to higher cognitive activities of the brain. MacLean (1973) called this set the "reptilian brain", which, despite the terminological imprecision, exists in all animals that evolved from reptiles, consisting of a central hub of primary processes related to the control of organic systems.

Evidence from different species shows that such systems are biologically inherited, intrinsically linked

[15] On the pre-objective constitution of the experiential self and the primacy of the first-person perspective in the donation of sense, see *Cartesian Meditations* (Husserl, 1982, especially Meditation II) and *Analyses Concerning Passive and Active Synthesis* (Husserl, 2001).

[16] "In sum, animal and human data demonstrate that a primal form of Self emerges within SCMS and that all other sophisticated forms of mental life may depend on those brain regions, since lesions or disturbances of the SCMS cause the collapse of any conscious and/or intentional activity" (Alcaro *et al.*, 2017, p. 4).

[17] "It can be visualized as a comprehensive mantle to the cerebrum, covering all its surfaces, including those located in the depth of crevices known as fissures and sulci which give the brain its characteristic folded appearance" (Damasio, 1994, p. 45).

[18] "Concordant human evidence is available from a condition called hydranencephaly, in which cerebral cortex and higher limbic areas are totally destroyed in utero, which leaves most subcortical networks functional. Surprisingly, these hydranencephalic children express many signs of positive and negative affective states" (Alcaro *et al.*, 2017, p. 3).

to instincts and physical reflexes. Given that, in the maturity of his work, Jung understood archetypes as psychic counterparts to instincts, his position here aligns with contemporary biology and with the position of Damasio (1994), who points to the possible centrality of subcortical mechanisms in the primary processes of representation of somatic and visceral states[19] and in the formation of proto-consciousness.

Such evidence also corroborates the *Naturphilosophen's* ideas of adaptive evolution of archetypes and their conception that the conscious ego and the brain's higher hemispheres derive from a much more recent evolutionary process than the subcortical limbic network[20]. Paleoanthropology holds similar positions, as calculating the ontogenetic development of hominid fossils based on their skull size shows that the higher brain structure likely developed in recent evolutionary periods[21]. In analytical psychology, the collective unconscious (whose affective basis would emanate from the subcortical regions) is older than the conscious ego that evolved from it.

> This means that the psychic characteristic of an instinct is an emergent quality of an originally not-psychic compulsive/automatic urge/pattern (such as that of an insect) that could activate the organism (Alcaro *et al.*, 2007, note 7, p. 5).

The theory of a pre-representative proto-consciousness with affectivity as its fundamental characteristic was already known in Jung's time, with Eugen Bleuler himself being one of its main proponents. By combining Bleuler's concepts with Pierre Janet's work on autonomous fixed ideas (Janet, 1889), Jung arrived at his own conception of an affective model of the mind, which, together with Haeckel's embryology[22] and the idea of common archetypes (*Urbilde*) of the *Naturphilosophen*, formed the basis of his evolutionary model.

From this perspective, affects are understood as forms of experience that originate in a primary pre-conscious field, consisting of the connecting links between the impersonal and personal layers of our mind, modulating the relevance of the themes and images that will form the individual's mood states and behavior, controlling a series of coordinated physiological responses that constitute the characteristic repertoire of an emotion.

As Freeman (1999) points out, the modulation of affective weights occurring at the base of mental processes operates as a neurodynamic pattern emerging from subcortical structures. This pattern propagates throughout the brain and body, generating affective centers that are interconnected, on the one hand, with instincts and, on the other, with higher mental processes. As in other recent neuroscientific studies (Brown, 2015; Freeman, 1999), there are indications that affectivity is indeed the most primordial form of subjective experience and may serve as the primary process from which higher forms of subjectivity are structured.

Thus, affects, while directed to the visceral structures of the body (through the spinal cord), act as vectors of control over the intensity of physical-motor actions and reactions, in close connection with instincts and behaviors, and when directed to brain areas related to higher subjective activities, they take the form of images and mental representations,

[19] "Primary emotions (read: innate, preorganized, Jamesian) depend on limbic system circuitry, the amygdala and anterior cingulate being the prime players. Evidence that the amygdala is the key player in preorganized emotion comes from observations in both animals and humans. The amygdala has been the precise focus of various animal studies by Pribram, Weiskrantz, Aggleton and Passingham, and more recently, and perhaps most comprehensively, by Joseph LeDoux" (Damasio, 1994, p. 135).

[20] "In so far as no man is born totally new, but continually repeats the stage of development last reached by the species, he contains unconsciously, as an a priori datum, the entire psychic structure developed both upwards and downwards by his ancestors in the course of the ages" (Jung, *apud* Clark, 2025, p. 40).

[21] "The process of heterochronic alteration of ontogeny from a primate-like life history to a human one is consequently most likely no older than 2 million years - although it is possible it occurred more recently" (Clark, 2025, p. 138).

[22] "In the simplest of terms, this theory states that changing the rates of growth during ontogeny can account for the different anatomical structures in a wide range of species (…) phylogeny or speciation results from the alteration of ontogenetic growth trajectories. This variation on an underlying archetypal theme is what seems to account for species diversity" (Clark, 2025, p. 26).

which, depending on the affective charge of their theme, may or may not manifest themselves in an archetypal way, modulating psychic reality itself through this dynamic.

Conclusion

Faced with the challenge posed by the rapid evolution of biological theories at the end of the 19th century, Jung found himself faced with the need to reevaluate and reformulate the foundations of his conception of the collective unconscious, as they depended on a series of theories of psychic heredity. The shift away from the ideas of organic memory and the inheritance of acquired characteristics became inevitable given the advances in biology, and the consolidation of the theory of natural selection forced the abandonment of the old foundations, causing archetypes to cease to be understood as inherited memories and instead as inherited conditions for the possibility of idea formation.

By adopting Kantian terminology, Jung established an analogy between his conception of archetypes and categories, asserting that archetypes were not inherited ideas, but rather innate possibilities for representation. This paradigm shift was essential to dissociate archetypes from the idea of direct biological inheritance, maintaining their innate psychic foundations, but modulated by biological structure at its various levels. Thus, archetypes are updated in their understanding to psychic expressions of anatomical-physiological dispositions, shaped by physical characteristics and favored by natural selection.

This biological-transcendental approach allowed Jung to reconcile his clinical observations with advances in biology, especially the theory of natural selection. Despite his departure from biological attempts at grounding, neuroscience in recent decades has shown that many of his conjectures can be supported by biology, and that his intuitions about the affective nature of the psyche, the evolutionary origin of archetypes, and the centralizing and organizing character of the Self may indeed correspond to correct conjectures about the workings of our minds. ■

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