

Simondon, Psychology and Psychic Individuation

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The entire published oeuvre of Gilbert Simondon appears not to fully acknowledge the role that psychology plays in his thought.¹ The author himself points out that if psychology extends its dialogue with other human sciences, including anthropology, and if the gap between sciences and techniques is reduced, ‘Psychology, conceived as a pure technical model, may one day become a science model, some central knowledge’ (Simondon 2015: 249). Bernard Balan, who served as an assistant to Simondon for decades and was entrusted by him to edit *Foundations of Contemporary Psychology* in 1988, recalls that for Simondon ‘there can be no true psychology before a new theory of individuation [. . .] The study of individuation is indeed a necessary prerequisite for a suitable axiomatization of psychology, which can then truly become a human science’ (Simondon 2015: 247); in a way, the basis foundation and model for all human sciences.

It can be affirmed that psychic individuation is the expression of the becoming that permeates all the structures of the real, whether physical, biological or technical. The psychic offers the possibility of access to individuation, and knowledge itself is the individuation of relations. However, this knowledge requires a reformulation of epistemology, which Simondon finds in cybernetics and develops through his concept of allagmatics. For Simondon, cybernetics is not about robots or automata, but rather a call for universal thinking, a way of understanding systems through a reflective attitude incorporated into the sciences to capture relationships and interactions, rather than isolated causes and effects. In that way, it transcends the specialised vision of sciences, focused on each domain in an analytical way, which overlooks what may be common to all as ‘universal technology’ (Simondon 2016: 40).

This chapter revisits Simondon’s thesis of psychology as ‘central knowledge’, a concept he enunciated, but developed only sparingly and indirectly in his work. First, the stages of psychology are presented as precursors of individuation, which is understood as a new object of study for the discipline. Secondly, psychic and collective individuations are described on the basis of the main psychological processes identified in his work. Finally, it is concluded that psychology and philosophy are indissolubly linked in Simondon’s conception of technique, and their complementary study enhances our understanding of his work and the relevance of his thought.

¹ Simondon’s conception of psychology is not only developed in the book published under that title, *Sur la psychologie* (2015), and the sections devoted to psychic and collective individuation in *ILFI*, but other works such as *Cours sur la perception* (2006), *Imagination and Invention* (2010) and a large part of *Communication et information* (2010) are also an integral part of his reflections on the discipline. For a better understanding of the place of psychology in his work, we recommend a reading of these texts together. See ‘Initiation à la psychologie moderne, note éditoriale de Natalie Simondon’, in *Sur la psychologie* (Simondon 2015: 271–2).

Three Stages of Psychology: Background of Individuation as an Object

The boundaries between philosophy and psychology only began to become explicit after the advent of modernity, a period marked by the emergence of various disciplines – sociology with Auguste Comte, political economy with Marx and so on. Psychology sought to establish itself as a scientific discipline during the twilight of the nineteenth century and the dawn of the twentieth century. From its inception, psychology has been characterised by a diversity of objects – plural – and methods specific to each perspective: the mind, the brain, psychophysiological processes, the configuration of neuropsychology; behaviour; consciousness; the soul, spiritual life, soul care; personality; mental health, psychopathology and care.²

Simondon identifies three stages of psychology, each associated with a scientific factor in relation to other sciences and with social and cultural developments. These stages are *causal dualism*, *systematic monism* and *genetic pluralism*. Although the exploration in *Fundamentals of Contemporary Psychology*³ adopts a historiographical approach, and it is difficult to pinpoint the specific sources informing his proposal, it is possible to examine the epistemological stance that Simondon assumes. The general aspects of each stage will be reviewed in order to identify the necessary transformations, in terms of objects and methods, to reach the third stage – the stage during which Simondon developed his thought – which would allow a new paradigm of axiomatisation informed by cybernetics. The evolution of Gestalt theory plays a pivotal role, as it allows the integration of both philosophical and scientific perspectives, acknowledging that a single method is insufficient to study the complexity of individuation.⁴

First Phase: Causal Dualism

This phase represents the ‘birth and youth’ of psychology, spanning from 1880 to the end of the First World War in 1918 – a period that opened up various pathways in psychology, which were later subject to revision. The predominant science during this period was biology and the explanatory models and presuppositions focused on *efficient causality*. However,

² Dilthey’s (1989) classic division between sciences of nature and sciences of the spirit is reflected in the history of psychology and in the schools that have developed according to the emphasis as natural, social, health science, etc. Thus, it is difficult to affirm that there is a unity in its object and method (see Mueller 1963; Leahey 1992; Tortosa and Civera 2006). From the institutional approach to mental health in the twenty-first century, psychology has begun to be considered as a health science, to the point of having standards and manuals such as the DSM-V (APA 2013) and ICD-11 (WHO 2019).

³ The original version is from 1956, in the period of preparation of his doctoral theses, but it underwent several revisions and additions. One of its provisional titles was ‘Study of reflexive and historical epistemology of the foundations of contemporary psychology’, as Nathalie Simondon expresses it in the editorial note in *Sur la psychologie* (Simondon 2015: 5–6, our translation), in which this complete study is included.

⁴ The tendencies of psychology identified by the author are clinical, experimental and genetic, where the latter extends to the genetic-pedagogical integration of the former two (Simondon 2016: 153). In turn, Simondon states that ‘the misfortune of psychology consists in the fact that, in order to be scientific, it is obliged to dissociate its object by alienating it in experiences or measurement tests, while in order to respect its object it is obliged to abandon measurement. Measurement of the inessential or unscientific apprehension of the essential, this is the ordeal of Tantalus imposed on the psychologist. We must say that up to this point psychology has not succeeded in constituting itself as a science’ (2016: 59).

the cause was separated from the effect as something distinct from the phenomenon to be explained. For this reason, measurement often confuses ‘the state with its cause’ (Simondon 2015: 54). A wide range of positions share this emphasis on biology, from Russian reflexology and Pavlov’s conditioning studies, which would serve as a basis for American behaviourism (particularly Watson’s, which is placed in the second stage due to its definition of behaviour from an ‘epistemological monism’), to Bergson’s vitalism and the so-called ‘psychologie pathologique’ in which he places the predecessors of Freud and, more broadly, psychoanalysis (Simondon 2015: 58–82).

Wundt, functionalism and structuralism are also part of this stage. Here, the object of psychology is ‘continuous, qualitative, heterogeneous, dynamic, and non-static, with its different zones in a state of reciprocal interpenetration’ (Simondon 2015: 54). This period also saw the rise of psychology laboratories employing experimental or empirical methods, which coexisted with act psychology as proposed by Brentano and his disciple Stumpf. Brentano – in his studies on the subjective experience of sounds and music – postulates the difference between function – properly the object of psychology, which can vary – and the phenomenon, understood as sensory and imaginative givenness in the sense proposed by Husserl (Simondon 2015: 33–4). Von Ehrenfels, a pioneer of Gestalt theory, stands out for identifying in formal qualities what remains of mental activity. The central thesis of these authors, supported by experimentation, is that perception is determined by patterns and structures rather than isolated elements.

In the United States Darwin’s influence was significant, particularly through Galton’s studies, Thorndike’s differential and comparative psychology, applied psychology, and animal psychology influenced by the ‘German mechanistic’ school. Pragmatism, as proposed by James, and Dewey’s functionalism also deserve special mention. Dewey criticises structuralism and associationism, instead focusing on ‘the dynamism of consciousness’, the totality of behaviour and experience within a field. For Simondon ‘Dewey is the theorist of experimentation and experience in all its forms: psychological, pedagogical, logical, moral, metaphysical, aesthetic, political’ (2015: 43). While Simondon identifies a common epistemological principle in this stage, various approaches emerge that are not necessarily compatible.

Second Phase: Systematic Monism

The governing science during this phase was physics, which is associated with the concept of the community of action and is characterised by a rejection of causal thinking and a more holistic conception of reality. This period, spanning from the end of the First World War to the end of the Second World War, saw the emergence of ‘psychological systems’ that sought to formalise the discoveries of the first phase through an ‘exchange between psychology and the sciences at the level of axiomatics: non-causality or the community of action move from the domain of physics to that of psychology; the analogy concerns principles, not results’ (Simondon 2015: 181).

During this stage, the contributions of Gestalt continued with von Ehrenfels, Köhler, Wertheimer and, later, Metzger, Liebman and Rubin. The notion of system, present in Stoic philosophy, was reborn: ‘the phenomenon is a holistic, molar system’ (Simondon 2015: 95). There is a reciprocal action between elements organised within a structure that is neither superior to nor outside the field and tends to be, amid asymmetries and irregularities, as balanced, homogeneous, regular and symmetrical as possible (Simondon 2015: 96). However, while this is true in a physical system, in a psychological one it tends to be heterogeneous. This is the case with perception and qualitative differences, which are organised within a field (figure-background)

and are considered a ‘good form’ by significance: ‘the right form is therefore one that organises an imbalance, stabilises the difference in energy level between two regions, structures an asymmetry, instead of creating stable equilibrium according to the principle of energy degradation’ (Simondon 2015: 100). The perception of movement posed a problem for associationism, and the concept of Gestalt shifted from ‘a mechanistic type of causality [. . .] efficient and analytical (one element modifies another element)’ to ‘reciprocal action’, that is, ‘an element modifies all the elements present in the field at the same time’, similar to the fields in physics (Simondon 2015: 90).

In its earliest stage, Gestalt theory integrated isomorphism between the physical, the biological (such as physiological or neuronal processes) and the psychological – that is, contents and acts, structures and functions – aiming for axiomatisation using notions from physics such as homogeneous fields with stable equilibrium and continuous fields, associated with thermodynamics. It also incorporated quantum theory’s notion of heterogeneous fields of potentials and Heisenberg’s uncertainty principle, which challenges determinism and posits a discontinuous structure between matter and energy in the process of propagation. The concept of the community of action is no longer mechanical, and the laws governing macrophysics do not apply to microphysics (Simondon 2019: 93). The psychology of form, by integrating observation and understanding, opens the possibility of unifying philosophical psychology with objective psychology (Simondon 2019: 90, 3), especially as isomorphism is abandoned in a later stage. From a dynamic theory of form (‘isodynamism’), the physical, the biological and the psychological are not independent forms, just as Lewin’s topology reinterpreted act and content within the individual–environment system using the concept of the ‘hodological field’.⁵ Koffka, for his part, extended research beyond perception to include subjects such as memory, intelligence and learning – a ‘field of behaviour is superimposed on to the geographical field’ (Simondon 2015: 105, our translation).

For Simondon, ‘in the psychology of form, one can distinguish between theory and method; theory is inspired by past philosophy and present science; for this reason, it remains subject to modification’ (2015: 112). And although some of its doctrines have been refuted,

the method, which consists of comparing the fundamental notions of psychology with those of other sciences and forming a rigorous axiomatic, is fruitful far beyond the current state of the doctrine [. . .] [the psychology of form] has created transferable intellectual structures, fruitful in other domains, and now forms part of the dynamic whole of psychological thought. (Simondon 2015: 112)

The second stage sees an emphasis on non-causal thinking, which enables the transposition of knowledge across different domains and enriches the field of psychology: as it ‘seeks to apprehend wholes, behaviours of an organism within an environment, according to a principle of totality, [it] can much more easily discover structural analogies between different species of situations’ (Simondon 2015: 167).

⁵ Lewin developed a ‘topological or hodological geometry’ that brings together mathematical and dynamic constructs such as space, tension and force to describe the ‘structural relationships’ within individuals, in their psychological environment and in groups. His proposal combines the empirical dimension (observation, measurement and prediction) of psychological facts – everything that has ‘demonstrable effects’, whether conscious or unconscious, including, among others, economic and political aspects – and the formal expression, that is, ‘an adequate representation of the progressive character of many psychological processes’ in a *living space*, in the psychological environment as it exists for each person (cf. Lewin 1951: ch. 1, 1, 29).

Comprehensive methods have also played a significant role in history, from which viewpoint psychology is understood as a science of culture – with authors such as Dilthey, Rickert, Simmel, Weber and Jaspers contributing to this view. The contribution of phenomenology is situated within this stage as it also distanced itself from causal thinking, privileging the description of experience, rather than its explanation, the genesis of meaning and situation, without falling into psychologism, as Husserl himself avoided it. Simondon draws on successors such as Goldstein, Sartre and Merleau-Ponty. From Goldstein, he highlights a ‘biological phenomenology’ that studies the ‘organismic unity’ under a ‘principle of structural organization’ that does not require eidetic reduction (Simondon 2015: 115, 119). While Sartre offered a critique, Merleau-Ponty adopted a more integrative and ‘constructive’ vision, incorporating aspects of Goldstein, Sartre, psychoanalysis and the second stage of the psychology of form to propose a ‘true philosophical anthropology’ that gives central importance to the flesh, the body and the foundational strata of individuation:

The body is the actuality of the phenomenon of expression, establishing the pre-predicative unity of the perceived world, based on the pre-logical unity of the body schema, a system of motor powers or perceptual powers, a set of lived meanings moving towards its equilibrium. (Simondon 2015: 134)⁶

Similarly, the *genetic method* holds significant importance in the study of behaviour and development during childhood, even at prenatal stages, which are less accessible to other methods due to their limitations in relying solely on observation or introspection, or involving capacities associated with growth at later stages (Simondon 2015: 169).⁷

At each stage, clinical perspectives are also incorporated, not only as a central aspect in the history of psychology, but also as a method that contributes to the pluralism identified in Simondon:

Clinical psychology is a psychological discipline centred on individual cases, with its method inspired by the principle of the organism’s unity and oriented towards the totality of the complete human being’s reactions when confronted with a situation [. . .] This approach offers the subject a synthetic and comprehensive view; it differs from experimentation in that it does not create a situation in which it artificially controls all factors, varying only one at a time ‘all other things being equal’. Instead, the clinician reintegrates the factors of interest into the overall conditions and seeks exhaustive exploration. (Simondon 2015: 220)

⁶ ‘Phenomenological psychology complements phenomenology by addressing human existence in its facticity, which necessitates an appeal to empirical methods and prevents the convergence of psychological regression and phenomenological regression’ (Simondon 2015: 132). The gap between these two regressions is smaller in the perspective of Merleau-Ponty, whose legacy is explicit and determinant in Simondon. Cf. Carrozzini (2015), who defines Simondon’s proposal as a ‘subjective ontological naturalism’ that reconciles the philosophical and the scientific stance from the realism of the processes and relations of physics and quantum mechanics, far from any anthropomorphism or philosophical anthropology. His humanism is an extension of the study of nature in which the human being is a manifestation of greater complexity, rather than superiority.

⁷ He draws on authors such as Carmichael, Gesell, Piaget and Wallon, who broaden this perspective: while in the first phase the study of the child was a domain, a field, in the second phase it is more of a method; it is non-causal, it studies sets and behaviour in an environment as a whole, which allow one to ‘much more easily discover structural analogies between different kinds of situations’ (Simondon 2015: 167).

The necessity of experimentation to consolidate psychology as a scientific discipline is not the only feasible approach. The study of singularity, or the detailed examination of a case across various dimensions, is a significant avenue for gaining knowledge:

Clinical psychology can be ‘armed’ [*armée*] while maintaining its attitude. The direct human-to-human relationship is paramount and should take precedence over psychometrics. However, all methods, including psychotechnical, clinical, and psychoanalytic approaches, contribute to understanding the psyche, which cannot be grasped through intellectual intuition and must be ‘encircled’ through a convergent plurality of methods. (Simondon 2015: 220)⁸

Third Phase: Genetic Pluralism

For Simondon, methodological pluralism is not the only essential element, but genetic processes are also present across the different disciplines. Both psychology and sociology are ‘pure operative modes’ that must be studied in their ‘real genetic operation’ (Simondon 2016: 188, our translation). This operation is none other than individuation, and its study corresponds to the *inter-scientific technique* provided by cybernetics. This perspective emerged in the period from the end of the Second World War to the present, documented in Simondon’s work from the 1980s. The focus is on effects – in the sense of physics – not on causes or laws: ‘If, therefore, one agrees to name an effect a phenomenon that is not a pure result but has a certain stability of operation, it is noted that the knowledge of an effect is the discovery of the mode of causality that constitutes it’ (Simondon 2015: 182, our translation). This shift is fundamental for facilitating the dialogue between psychology and other sciences, introducing a central area of work for cybernetics: the study of the ‘functional unity that is both human activity and machine activity [. . .] This exchange relationship does not imply a reduction of one term to the other; it is broader than the two terms’ (Simondon 2015: 211, our translation). Hence the technical object, rather than being merely a tool or instrument, becomes ‘a new socius for humanity’ (2015: 248–9).

This challenge particularly engages psychology to

encounter on the terrain of the analogy of effects, within the vast domain of information technology (acquisition, transmission, utilisation, coding, and decoding) and control technology, servomechanisms, and self-regulation (generally referred to as automation, but which must be carefully distinguished from pure mechanical automation). (2015: 183)

⁸ Other fields and themes take place in each phase according to the principles identified, such as social psychology, cultural anthropology, pedagogy, aesthetics, human ecology, characterology and sociometry. Of the latter, Simondon highlights Moreno, its founder, who by applying psychoanalysis to sociology opposed Comte’s and Marx’s macrosociology: he aims at ‘grasping social structures at the moment of their birth, and substituting the social atom for the socius’ (Simondon 2015: 164). This concept influences Simondon’s theory and constitutes part of his interest in ‘North American sociology’ and ‘experimental and small group psychology’, which complements his previous knowledge of Kurt Lewin and the foundation of the concept of personality, the categories of *out-group* and *in-group*, and in general his proposal on the transindividual dimension (see Bardin 2015: 89, 110). In 1952 Simondon attended a ‘summer course’ at the University of Minnesota. Social psychology studies in the United States were much more developed at this time than in France. It was only in 1948 that the bachelor’s degree in psychology was created, and in 1957 that of sociology, both of which conferred the degree of ‘social psychology’ (Chateau 2014: 14).

Simondon notes that the reception of these ideas in France was slow, in contrast to the United States, where cybernetics was often perceived from a materialistic perspective or as merely a technique or mechanism. Nevertheless, its epistemological scope excited Simondon, as he saw in it the ability to integrate sciences through a new axiomatics and a renewed axiology: an *axiology*, as he called it. However, before expanding the methodological perspective, it was necessary to develop the object, which was the very process of individuation.

The Object: Psychic and Collective Individuation

Individuation is a central concept in Simondon's thought. Structurally, it involves three dimensions: the physical, the biological and the psychic. Practically, it functions as a principle, akin to a Heraclitean flow, accounting for the incessant becoming of all things: entities, concepts, the physical world, the social world, history and, of course, technical objects: 'the subject is not a phase of being opposed to that of the object, but the condensed and systematized unity of the three phases of being' (Simondon 2020: 348–9). Being unfolds into individual and environment, forming a system of potentials and relations. In the unfolding of each 'entity' – whether material or formal, social or historical – by the intrinsic property of its becoming, it acquires properties or attributes that differentiate it from the generality of those of its species, and those properties either enrich or diminish it: 'What makes it such that a being is itself, different from all others, is neither its matter nor its form but the operation through which its matter has taken form in a certain system of internal resonance' (Simondon 2020: 32).

The principle of individuation operates within a specific field, an associated milieu in which each entity unfolds its singularity, always in relation to or with respect to many other entities. In its own way, *individuation* is the effect of *temporality* that is intrinsic to *that which* is in its singularity. For every entity, temporality is inherent in its singularity. However close, for example, two entities of the same species might be, both their spatiality – unique and irreducible – and their own intrinsic temporality give specificity to their singularity. The becoming of the latter is equivalent to its individuation. Psychic individuation is situated *between* physical and biological reality in the *chiasmus* between exteriority and interiority, between temporality and spatiality (Simondon 2020: 310–11). It is a 'transitional way' between the vital and the psychosocial; it marks the passage from the pre-individual to the collective, from the homogeneous to the unfolding of differentiated functions: psychic schemas and somatic specialisations. The psychological 'interiorizes the exterior [. . .] exteriorizes the interior' (2020: 315); it is

an ongoing differentiation and integration according to a regime of associated causality and finality that we shall call transduction, a regime that seems to us to be a process that is more fundamental than causality and finality, which express the borderline cases of a fundamental process. (2020: 272)

Simondon's position is neither monistic nor dualistic, but rather *genetic*, as it integrates duality and unity, 'which contains plurality'. The individual is part and manifestation of being, but it is not the entirety of being, for there exists a prior reality, a real – pre-individual – that tends to be overlooked or minimised as a source of ontogenesis. The individual is not taken as the origin but rather the process of ontogenesis itself, which is individuation. In other words, 'individuating' does not arise from the 'individuated'. This is precisely the essence of genetic pluralism: 'the individual is therefore a spatiotemporal axiomatic of the being that makes compatible previously antagonistic data in a system with temporal and spatial dimensions' (Simondon 2020: 291–2).

Structure (spatial dimension) and function (temporal dimension, development, becoming) have a ‘mutual convertibility’ (Simondon 2020: 292). The individual serves as the medium of an *a priori* principle in that it embodies an individuation, and an *a posteriori* one in its continuous relationship with the world through signs, which can be spatial or temporal, and significations, which conjugate the spatio-temporal (Simondon 2020: 292). It represents an integration of the somatic, the psychic and the spiritual.

Sensation and Perception

For Simondon, sensibility has been a theme shared by philosophy and psychology since antiquity. From the eighteenth century onwards, sensibility became the subject of psychophysics and psychophysiology, which later informed ethological studies and biological psychology.⁹ Reflective and observational methods have been employed to study taxis, tropisms, interoception, exteroception and proprioception, as well as experimental approaches such as the mazes introduced by Hull and Tolman, extending the study to conditioning, complex processes and intelligent behaviours. Sensibility represents the most primitive relationship of the individual with their environment, such as irritability, through the sense organs that capture the objectivity of stimuli, as well as through the internal organs, movement and equilibrium, all oriented towards adaptation and regulation. In the face of plurality of information, sensation is ‘the differential play of the sense organs indicating a relation to the milieu [. . .] is the capacity of differentiation, i.e. the apprehension of relational structures between objects or between the body and objects’ (Simondon 2020: 230). Perception, on the other hand, is the complementary operation, as it integrates plurality and disparity, and engages with the meaning we ascribe to the world (Simondon 2015: 361–2, 495–6).

For Simondon, ‘Perception would [. . .] be an act of individuation comparable to those in physics and biology’ (2020: 260). Not only do the relations between subject and environment change, but their structure also undergoes transformation. This is why laboratory studies fail to address genesis if the inherent tension with perception is not established, one might say, in a natural environment. They do not capture the entirety of the organised experience, as perception is ‘the act that organizes wholes’ (Simondon 2020: 269). For Simondon, Gestalt theory ‘leads to a theory of knowledge that is neither *a priori* nor *a posteriori*, but *prescient*; knowledge is simultaneous with respect to being and its apprehension’ (Simondon 2006: 89, our translation). However, unlike the psychology of form, which studies the ‘degradation’ of form but not its genesis, Simondon adopts Kurt Lewin’s notion of the ‘psychological field’, within the structure of which perceptual processes are integrated. These processes exist in potentiality and are expressed or actualised as ‘invention’, ‘genesis of form’ and ‘resolution of a conflict’, arising from the relations, incompatibilities and tensions between the subject and the environment. These tensions are only partially resolved, because the process is metastable (Simondon 2020: 261–2).

Affect-Emotivity

The study of individuation begins with a ‘quantum regime of affectivity and emotivity’ inherent to the structure and genesis of organisms, from the simplest to the most complex,

⁹ *Sensibility* is the last study in the book published under the title *Sur la psychologie* (2015: 359–501), and was the topic chosen by Simondon for a course at the Sorbonne (1966–67), which brought together psychology and philosophy students. After that period, the curricula of the two degrees were separated in the French educational system.

regulated by ‘the oldest layers of the nervous system (particularly the midbrain)’ (Simondon 2020: 273–4). In humans, affective-emotive functions form the basis of communication and intersubjective expressions. Rather than the communication of similar contents between consciousnesses, a form of *participation* is established – not only between humans, but also between animals and humans, and even among animals themselves, as illustrated by the so-called ‘yoked community’ of oxen (Simondon 2020: 275). Psychic life exists as a field of forces in a dynamic social milieu that transcends animal instinctual life. Simondon differentiates instincts, which pertain more to the individual order, from tendencies, which serve a social function. Additionally, there is a layer of subconsciousness situated on the boundary ‘between consciousness and the unconscious [. . .] which is essentially affectivity and emotivity. This relational layer constitutes the center of individuality’ (Simondon 2020: 273).

From this often implicit background, material and symbolic products emerge to form an ‘affective community’ that is transmitted through ‘not merely symbolic elements but also effective elements of the life of groups: the regime of sanctions and rewards, symbols, the arts, and collectively esteemed and unappreciated objects’ (Simondon 2020: 274). Consequently, an individual, as a transductive being, can survive after death due to the information embedded in the system created with the environment, which does not disappear along with the individual’s interiority (Simondon 2020: 275–6). The *personality* of the individual is shaped as a functional unit, but only partially stable because it operates within the domain of the quantum, and the critical:

[it] is constructed via successive crises; its unity is increasingly strong the more this construction resembles a maturation in which nothing of what has been built is definitively rejected but is, sometimes after a latency period, reintroduced into the new edifice. Individuation is unique, individualisation continual, and personalisation discontinuous. (Simondon 2020: 298)

Affect-emotivity serves as the foundational basis for both personality and collective individuation, mediating between the subject and the world, as well as between the individual and the pre-individual. It resolves incompatibilities or tensions in two ways: through presence and encounter in response to perceptual incompatibility, and through individualised emotion in addressing affective challenges. In this manner, action and emotion operate as parallel processes that achieve ‘reciprocity’ within the collective, ultimately leading to the spiritual dimension, independent of any substantialist dualism (such as body–soul, materiality–immateriality) and of ‘metaphysical and theological structures’ (Simondon 2020: 277). The collective, as ‘the stable spatiotemporal’ (Simondon 2020: 291), serves as a mediation between perceptual viewpoints and emotions. There exists some plurality between these modes of activity; an isolated subject does not contrast their viewpoints and is not compelled to reflect and partially stabilise these two dimensions. It is the connection and participation with others that facilitates and articulates the reciprocity between action and emotion.

Consciousness and Self-consciousness

For Simondon, there is a continuum between the animal and the human with a common quantum regime across all living beings, rooted in the affective-emotive. However, in the face of new challenges posed by the environment or one’s own internal biological endowment, the invention of new structures becomes necessary. While animals are ‘sometimes in a psychic situation’, humans, through symbolic resources in addition to vital ones, extend their world to

include secondary thought and self-consciousness (Simondon 2020: 389 n. 7). Consciousness is constitutive of psychic individuation, enabling the subject to connect with both themselves and the environment in a transductive way. In living beings, during the biological phase, experience and behaviour are heterogeneous; yet, at the psychic level, functions such as foreseeing or anticipating and remembering ‘converge, because they share the same nature and have a single function: to establish the reciprocity of the order of the simultaneous and the order of the successive’ (Simondon 2020: 309).

The psychic brings the present and the past as ‘real experience’, with the presence of these two dimensions (simultaneous and successive) constituting *reflection* as the centre of individuality. While the living being integrates the past into the present, the psychic subject can, in addition, integrate the present into the past, performing the inverse operation through the analysis of the structure and effects of experience – its historicity and vital trajectory. In other words, this conscious individualisation, facilitated by temporality, ‘this present that is psychical [. . .] through a symbolic relation [. . .] is a transduction between the field of the future and the interconnected points of the past’ (Simondon 2020: 324). Reflexive self-consciousness enables the link between the world and the self, between interiority and exteriority, the physical and the biological, the problem and the solution, temporality and spatiality (Simondon 2020: 310–11). As a function, rather than a substance or entity, the capacity for action of self-consciousness corresponds to the notion of the transcendental subject – the individuated being that bears problems – while the empirical subject individualises itself and provides solutions based on experience. In this sense, psychology is also ‘central knowledge’, as it is or can be not only a well-founded science in the field of humanities, but also a praxis that allows us to know others, the world and ourselves humanly in interaction with them.

Learning and Problem Solving

Simondon’s psychobiological perspective on behaviours integrates primary knowledge, phylogenetic information about the species and learned responses that generate knowledge and answers to increasingly complex problems throughout all its phases. This encompasses primary mechanisms of sensitivity (such as detour, groping, tropisms, reflexes), trial and error, instincts and intelligent behaviours. These behaviours involve not only the perception of forms and the execution of plans, but also ‘schemes of universality’ that can be transferred, as seen in the case of technique (Simondon 2009).¹⁰ In technical individuation, learning is not solely an individual process; the environment is transduced through schemes that carry collective implications, leading to a transformation of the social territory. This transformation integrates

¹⁰ Simondon, like Piaget, describes processes of *differentiation* and *integration*, but associated with the emergence of properties in the increasingly complex organisation of a system. It is a process of morphogenesis in the different spheres of individuation. For Piaget, action is associated with knowledge in a dialectical relationship: ‘to act is to know and to know is to act’ – there is a mediation between subject and object, interior and exterior, individual and environment in a ‘building of structures and at the same time often a probabilistic interpretation of their sequence’ (Piaget 1970: 262). Piaget’s epistemology is the study from a minor to a major state of knowledge that is not determined by age in the passage from one state to another, but by the *operations* carried out in a partial way, with the participation of development and maturation. There is a functional *a priori*, not formal (as in Kant) that operates in the very action performed by the subject through assimilation and accommodation (Londoño and Mena 2019, for whom the genetic method is based on the study of action as problem solving).

cognition, values, motivations and ways of living. The solution is not immediate, nor is it confined to the initial purpose that prompted it, but it can extend to other domains. The ‘intelligent learning’ that makes it possible ‘crystallises into a functional structure the dynamism of an effort of consciousness and action’ (Simondon 2014: 242, our translation).

According to Lewin’s notion of the psychological field, learning is not only expressed in cognitive changes but also in needs, motivations and values. It takes place within a system where the cognitive and the affective-emotive are organised, leading to an amplification of potentials and fluidity through shared meanings that transform the individual and transduce into the social.¹¹ ‘[T]he individual exists the moment that a reflexive becoming-conscious of the posed problems has allowed the particular being to introduce its idiosyncrasy and its activity (including that of its thought) into the solution’ (Simondon 2020: 310). Here the problems are for oneself, but the presence of others summons another type of activity that goes from the inter-individual to the transindividual. There is no transindividuation without reflection:

to the extent that the interindividual relation offers a prior validation of the ego grasped as a persona through the functional representation that others have formed of it, this relation avoids the acuteness of the calling into question of oneself by oneself. On the contrary, the veritable transindividual relation only begins beyond solitude; it is constituted by the individual who called himself into question and not by the convergent sum of interindividual rapports. (Simondon 2020: 313)

Imagination and Invention

Simondon proposes a theory of the image as a component of psychic activity, structured through a cycle that begins with motor tendencies (or the anticipation of the object). A system subsequently collects ‘incident signals’, forming the perceptive-motor framework that enables the encounter with the object. Finally, a symbol preserves an image, which may become part of memory, even in the absence of the object, and is invariably permeated by affective-emotive and previous experiences. The cycle can be restarted through invention, as anticipations not only evoke but also produce new genesis, owing to varying degrees of indeterminacy within the system. In summary, there are three phases: *anticipation*, *experience* and *systematization*, corresponding to three levels of image: *a priori*, *a praesenti*, *a posteriori*. Influenced by the research of Lorenz and Tinbergen, Simondon describes the first type of image as endogenous and hereditary, with a biological basis that does not require contact or experience with the object. It precedes motricity and is prior to the stimulus and response schema (Simondon 2022: 32–3).¹² In a *praesenti* imagery, there exists a relationship between environmental information and a schema within the individual that is pre-perceptual or intra-perceptual.

¹¹ This process of *modulation* corresponds to the idea of *Gestaltung* rather than a moulding from which the typical idea of *Bildung* arises (cf. Aguirre 2019; Battán 2019).

¹² He gives the example of perceptual patterns that trigger stimuli or the phenomenon of *imprinting* (*Prägung*) in which hereditary behaviours are triggered by typical situations, although the image does not necessarily coincide with the perceptual information of the environment. This is the case of some bird species in which the chicks follow an animal of another species or even a human, as if it were the ‘mother’ (Simondon 2022: 34).

Movements are anticipated by innate motor imagery, although there is an objective support, albeit incipient, and in an imprecise or unsophisticated form.¹³

A posteriori images involve learning through ‘response schemes’ that integrate the affective-emotive dimension (such as desire, motivation). Here, there is truly ‘an analog of the external milieu’ and an orientation towards a ‘mental universe’ in tension (Simondon 2022: 26–8). This represents a more complex organisational process that includes a plan of action, advancing to a reflective and formal level with a significantly greater capacity for transformation of objects and the environment, as these are ‘frames or supports for relations’ (2022: 42). A gradual process can be appreciated that allows moving from a medium (environment in a general sense) to organised territories as qualitative and quantitative information expands. There is a greater integration of information that leads from instincts (flight, defence and so on) to the psychic itself, to intelligent behaviours and invention by means of

free images, through a change of level, thus allowing a genesis to start again: invention would be the rebirth of the cycle of images, one that permits an approach to the milieu with new anticipations from which adaptations will emerge that were not possible for primitive anticipations, and then a new internal and symbolic systematization. (2022: 19)

A ‘dark zone’ participates in this process, which is a source for the genesis of new images because there is a level of indeterminacy. In the same way, Simondon proposes a theory of communication beyond an emitter and a receiver, as an information operation modifies the dimensions intervening in the becoming of an ‘incident reality’ with varying degrees of freedom.¹⁴ It also involves the unconscious dimension – images, contents, and affective and emotional resonances that affect the consciousness. He calls these ‘quasi-organisms’, including the archetypes proposed by Jung, while an archetype is ‘overdetermined [. . .] condenses multiple situations into a single representation [. . .] resists rational analysis’ (Simondon 2014: 74).¹⁵

In the inventive act, the focus extends beyond images and their formalisation to encompass symbols that complement each other and form a network, facilitating communication and opening the possibility of universalisation:

symbols are ‘absolute objects’, detached from the empirical situations of their emergence, yet having preserved their power, their capacity for expression, their ability to show potentials [. . .] Within the symbol, succession becomes simultaneity, the individual attains a universal scope. (Simondon 2022: 136)

¹³ This is the case of a child playing with a rag doll, or a cat that triggers the schema to hunt with a toy or a ball of yarn: ‘when the execution phase of a behavior is ready it can be actualized in relation to a substitute object, that is, one endowed only with features supporting the motor activity’ (Simondon, 2022: 36). The difference with the *a priori* image is that in this case the correspondence with the object and the pattern is not triggered by a ‘random’ component in the environment (Simondon 2022: 35–7).

¹⁴ Communication consists in the amplification of information and can occur *transductively* (towards the future), *modulatorily* (towards the past as conservation) or by *organisation* through synthesising the previous aspects and operating in the present (Simondon 2010: 173–89).

¹⁵ It should be noted that Jung also proposes the concept of individuation as a ‘psychological process through which the true purpose of the individual is fulfilled. The Self expands [. . .] it frees itself from the appearances of the persona, then organizes and adapts the forces of the unconscious to reality through participation in collective reality. In this way, it aims to become an individual incarnation of humanity’ (Simondon 2015: 139).

Simondon once again accords a privileged position to *technicity*, viewing it as the inventive force that endures and can be transmitted. As a manifestation of human beings' plasticity and inventive capacity, not merely to adapt but also to transform their environment, they deploy modes of thought – religious, aesthetic, social, political, ethical, philosophical – expressed in concretised technical objects, clothing, artistic creations and linguistic turns that can establish norms, values and operational schemes that are only partially rational (Simondon 2017: Part III). In the same way, it invokes other domains of knowledge for its study, not only psychology but also psychological processes ranging from the most instinctive to higher processes such as thought, language, intelligence, learning and conscience in its development through action that transforms both the environment and the individual, resolving problems in inventive, rather than merely reproductive ways.

The Method

According to Simondon, human sciences face the challenge of finding 'common epistemological norms' (Simondon 2016: 173, our translation), and his aim is to unify them within an axiomatic framework that transcends the division between psychologism and sociologism. He argues that psychology needs to study transductive, transindividual processes, which are products of invention – particularly through technique – and can be understood as 'operational and structural modalities' (Simondon 2016: 324, our translation). Simondon asserts that just as individuation occurs, it can also be known. In his epistemology, *being* and *knowing* converge in transduction, a metaphysical and logical notion. The psychic subject experiences ontogenesis and simultaneously possesses the ability to understand both their own development and that of others across different phases. This implies an ontology that is prior to a theory of knowledge, as it concerns a theory of being, its structure and a pre-individual reality that precedes it. The theory of knowledge, which studies the knower (*cognoscente*)–known relation, is thus simultaneously a theory of being and action, with neither subordinated to the other.

Simondon characterises thought as cybernetic because it follows previously described operations. In turn, cybernetics as a method can comprehend thought in its functioning and normativity. Further, he states that 'it could be said that the principle of individuation is the allagmatic operation common to matter and form through the actualization of potential energy. This energy is the energy of a system' (Simondon 2020: 32). The contribution of allagmatics as a method, beyond its operational mode, lies in studying a prior moment of spatio-temporal structuring – of the separation of operation (more aligned with technique) and structure (more aligned with science) – in its process of becoming. This approach involves examining its ontological and axiological dimensions through a scientific and philosophical lens, as it is inherently reflexive (Simondon 2016: 198–9). It addresses a *metabasis* – both a transit and a transformation – from the natural to the reflexive, seeking 'common explanatory principles' and 'teleological' mechanisms as a 'scientific phenomenology' (Simondon 2015: 184)¹⁶ that considers the phenomenon in its genesis, rather than stripped of its operation – as in positivism (Comte) or criticism (Kant) (Simondon 2016: 177, 200).

¹⁶ In a broad sense, and even in its more restrictive dimensions, this phenomenology is, at the same time, 'realist phenomenology'. This phenomenology accounts for the *modus essendi* and the *modus cognoscendi*, that is, the mode of being (real) and the mode of knowing (the real), in their mutual transformations. In this sense, broad, restricted or applied, it can be argued that Simondon was always a phenomenologist, specifically and particularly a realist (Gil-Congote and Vargas-Guillén 2020).

Allgomatics has two aspects: an ontogenetic act associated with the entity, the ontic, and a methodological-epistemological aspect associated with analogy. The methodological postulate involves understanding the laws common to all phases from a *genetic scheme* that follows individuation in both living and non-living entities. It is the study of a metastable system situated between the natural and the human, between living beings and technical beings. If identified in one phase, for example, in a domain of knowledge such as physics, with the laws of mechanics and quantum physics, other domains can be understood by analogy through an epistemological revision. Analogy is feasible because ‘identities here are identities of genetic processes, not of beings or substances’ (Simondon 2015: 181, our translation); that is, ‘identity of real operative relations’ rather than identity of terms. The concept of the system advanced by allgomatics focuses on the coupling of information and potentials, both of the individual and the environment, and not on command or hierarchy:

each element acts on all the others, but all of them act on each one, so that form is the organization according to the elements; the totality is not a ‘totalitarian’ force that would arbitrarily and superiorly govern each of the elements in an autocratic manner. (Simondon 2015: 292)

In postulating an axiontology, Simondon draws from Plato the concept of ‘metretics’, which combines the quantitative and the qualitative, measurement and ‘just measure’; technique transcends its operative, instrumental sense, acquiring an *inter-scientific* dimension that mediates between the instrumental and the axiological in its ‘operative interdependence’ (Simondon 2016: 187, 193–4).

Cybernetic thought becomes tangible within psychology in what Simondon calls a *triadic theory of the individual*, which extends the description of the functioning of individuation in accordance with the analogical method. He resorts to the figure of the *relay* to postulate the thesis of the living being as a *modulator*, a ‘cascade of modulations’, that is, ‘a system that essentially makes the synthesis between something that is information (or a form of information) and energy. This synthesis is not organized but continuous, that which is highly organised and organizing’ (Simondon 2010: 196), in accordance with the theory of evolution reinterpreted from ‘the patterns of modulation and transduction’ (2010: 245). Depending on their degree of complexity, behaviours – primary, secondary and tertiary – operate in an ‘anatomical, physiological, behavioural and functional’ (Simondon 2010: 241) manner with respect to other subsets, and each behaviour is amplified and changes regime. Ontogenesis oscillates between adaptation and the tensions produced by new experiences, problematic environmental situations or maturation involving internal changes of structure and operation within ‘systems of potentials’ (Simondon 2020: 691): ‘there must be a field that externally differentiates because it is essentially and internally potentialized’ (2020: 693). A form is stabilised as a product of tension within a field of potentials – a modulating field – but when that matter is informed – it receives a form – it loses its internal resonance.¹⁷

¹⁷ In terms of development, he gives the example of the cephalocaudal axis as the origin of the forms that, as a crystallisation process, propagate in a field through different forms that are coupled. It is an evolutionary process of morphogenesis with a drive that acts as a ‘motivation’, in the sense in which Tinbergen puts it. In the social sphere he compares a *homeostatic* society and a *dense, quantum* society. The former is governed by a mediated inter-individual causality; the latter is immediate and ‘Individuals reach a sufficient level for a holistic functioning of the whole group of individuals to be achieved’ (Simondon 2016: 57).

Reception and reaction are mediated by nourishment, that is, motivations and motor energy reserves: ‘as soon as the energetic term is posited as non-saturated, therefore variable, the organism appears as a metastable system’ (Simondon 2016: 233, our translation). This is, in synthesis, the triodic model composed of a modulating structure, an effector structure in an environment and a source of energy: ‘the input of energy: it is nourishment, the input of information: it is perception, the output of organised energy: it is the action of the living being on the environment’ (Simondon 2010: 196). These mechanisms apply to all living beings, lower and higher: ‘This particular type of rapport that exists between *the structural germ’s tension of information* and *the informable metastable domain*, which harbors a potential energy, turns the operation of form-taking into a modulation’ (Simondon 2020: 689–90). Normativity is given by ‘the form and mode of operation of its organs. They define preferential pathways of action, modalities by which the *adaptation of impedances* between the organism and the environment ensure the action’s optimal efficiency, with the least expenditure of energy’ (Simondon 2010: 256, our translation), through an operation of transduction that generates a transitory adaptation until new disparities arise.

Conclusion

Cybernetic principles or criteria apply equally to machines and living beings and extend to the social world in a systemic vision that encompasses autonomy, reflexivity and self-organisation. In this epistemological rethinking, psychology emerges as ‘central knowledge’, as it renews the concept of individuation and integrates the psychic, social and technical domains. Technique, in this context, is not limited to a functional relationship or to the use of devices; it embodies a *mentality* imbued with cognitive and axiological schemes, as well affective modalities that drive action (Simondon 2014: 295–313). Taking individuation as an object of study demands a mode of inquiry and intervention that engages with the actual genesis of the operation: ‘cybernetics represents the phenomenological attitude in scientific reflection’ (Simondon 2016: 42). This approach is not only scientific but also deals with a *situation* and draws on experience to approach the object comprehensively, ‘in the concrete totality of its aspects, in its relation to the cognizant subject and to the world’, and as a ‘realist phenomenology’ (Simondon 2016: 41).

The triodic model, inspired by cybernetics, has several implications for psychology.¹⁸ On the one hand, it defines individuation as its object and describes a mode of functioning by analogy, which extends to both basic and higher processes described in the second section (sensation, perception, learning, consciousness, among others). In all these processes, there are modes of relation between the subject and the environment through differentiated operations and structures. However, it is not only a question of functions, but of an internal normativity (and that of the environment) that can be studied as real – pre-individual – as reality, in the

¹⁸ In recent years, psychology and cognitive sciences have established a fruitful dialogue between the conceptual framework of individuation and the becoming of being in Simondon, and certain traditions in systems theory and cybernetics. This is particularly evident in the concept of embodiment, or embodied cognition, introduced by Merleau-Ponty to emphasise the role of bodily experience (sensory and motor) in the psyche. Among other approaches, Francisco Varela’s theory of enactivism stands out, as it combines cybernetics and phenomenology, with significant points of convergence such as the emergence of cognition (rather than the mind) and the sense of the world arising from the interaction within a system comprised of the individual, the environment and technology. This topic deserves a separate study. (Cf. Varela, Thompson and Rosch 2016).

phases of individuation – in degrees of complexity up to the collective level: the participation of others is constitutive of psychic individuation and, simultaneously, this is enabled by reflective capacity.

It has been demonstrated how psychic processes solve problems, and in all these processes Simondon posits technique as the quintessential field for problem solving and transindividual becoming. However, since ‘knowledge about humanity must be both philosophical, scientific and technical’ (Simondon 2016: 222), action acquires a dimension that is not only cognitive, epistemological, but also axiological, oriented to ends, to a normativity and a teleology (axion-tology) that recognises from the biological phase and extends to the becoming of humanity, in concretised objects imbued with meaning, through reflexive capacity. This capacity, which could be considered the pinnacle of psychic individuation as ‘reflective self-consciousness’, stands at the intersection of psychology and philosophy, as a link or *lime*. Psychology has traditionally dealt with it as a faculty, capacity or process (reasoning, cognition, metacognition), while for philosophy it is the very subject itself. According to Simondon, it is not only a capacity but also the method *par excellence*.

Simondon distinguishes between two disciplines: methodologically, psychology relies on observation and experience, is ‘less reflexive’, and from its ‘plurality’ of fields, it investigates the normativity present in the very process of scientific knowledge. Philosophy, on the other hand, is reflexive, establishes a normativity prior to the real (citing the example of the circular reflection of the Cartesian *cogito*), seeks ‘Unicity’ and is governed by systems (Simondon 2015: 273–4). In terms of its object, psychology focuses on the relationship between the individual and the environment; philosophy focuses on consciousness, reason and the body. However, there is a complementarity between the two: ‘philosophy contains and implies a partial psychology; it grasps and manifests the active processes that serve as a norm’ (Simondon 2015: 495).

Simondon argues that psychology’s leading role in uncovering the normativity that underpins and guides the phases of individuation has historically been subordinated to the dialogue it establishes with other sciences, as it has not yet reached the autonomy it has sought since its establishment as a scientific discipline. Cybernetics, the inter-scientific paradigm – an expression of ‘pure technique’ – which brings together and articulates the sciences by unravelling the operations common to all of them, reconfigures the position of psychology and philosophy because it addresses both the dimension of knowledge and action, scientific validity and ends, epistemology and axiology. The teleology derived from the inherent normativity of beings in each of their phases can be studied and accompanied in their various forms of action. Just as ‘cybernetics is a philosophy of action’ (Simondon 2015: 212) and technique manifests operative schemes in the transindividual dimension, the psychic subject is individuated between determinations and what Simondon calls a ‘free act’: ‘the vanishing point of constituent normativity and constituted normativity [. . .] as the technical invention that creates the conditions of possibility for the object it institutes’ (2016: 435).

The ethical dimension – inherent to philosophy – that emerges from this theory is ‘optional’ and cannot be reduced to the individual or the social: ‘it is a transindividual and trans-temporal accomplishment that has an ontological degree of consistency’ (Simondon 2016: 436). Between the ‘objectivity of the fact’ and the subjectivity of the ‘intention of the action’, *freedom* and *responsibility* emerge as expressions of the individuation of the psychic subject, capable of rethinking and reorienting its ends and, consequently, those of humanity, in alignment with the *technical mentality* that Simondon advocates. This mentality seeks to amplify, with its openness and consciousness, the internal resonance of a network of relations in its evolution. The free act ‘is a transductive reality’ (Simondon 2016: 437) that cannot be adequately addressed

by psychologism or sociologism. Just as individuation is a whole that cannot be exhausted by a single discipline or field of knowledge, it is the responsibility of psychology to provide the foundation for its study as ‘central knowledge’ that integrates the technical dimension (of the order of the optional) situated between the theoretical (of the scientific order) and the practical (of the ethical order).

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