

Chapter 2

How to Invent a Form: An Inquiry into Gilbert Simondon's Philosophy of Perception

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Abstract In this article I provide a historical-critical inquiry into Simondon's work about the invention and the production of perceptive forms provided with informational potential, thus underlining the effects of undetermined factors during the process of perception. According to Simondon, during the operation of perception, perceptive images/forms are invented especially thanks to elements that cannot be reduced to a principle of order and simplicity. From this perspective, perceptive images or perceptive forms (these two terms are used by Simondon in a synonymic way) are not only the simple product of the application of innate and determined schemes: they are, on the contrary, an inventive result including "undetermined" elements. This can be especially observed in the case of the long duration perception of a turning linear object, as Simondon notes in his article *La perception de la longue durée* (1969–1970). Before analysing Simondon's peculiar viewpoint about perception, I analyse Simondonian theory of changes, namely allagmatic, to show his original position and his distance from determinism and pure indeterminism.

2.1 Introduction

In this article I provide a historical-critical inquiry into Gilbert Simondon's work about the invention and production of perceptive forms provided with informational potential, thus underlining the effects of *undetermined* factors during the process of perception. Before analysing Simondon's peculiar viewpoint about perception, I offer a short outlook of the main aspects of Simondon's philosophy, in order to show his original position and his distance from determinism and pure indeterminism.¹

¹ It is important to underline that Gilbert Simondon does not offer any precise definition of determinism and pure indeterminism in his works, so they could be considered as synonymous of causalism and casualism. Following Simondon, in this article I follow this *undefined* use of the terms, without providing any further definition of determinism and pure indeterminism.

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In the *first section*, I analyse Simondonian concept of *allagmatic*, namely the *theory of changes* of a structure in an operation and vice versa. This theory is conceived by Simondon to describe the internal processes which take place during an operation of individuation. The purpose of this first part is to underline the differences between this peculiar philosophical viewpoint and determinism and pure indeterminism.

In the *second section*, I provide an inquiry into Gilbert Simondon's viewpoint about perception, conceived as an operation of restraint individuation, namely an individuation which takes place within an already individuated domain, i.e. the biological one. I sum up Simondonian criticisms to associationism and *Gestalttheorie* and I underline his original proposal to modify the concept of *pregnant perceptive/images forms*.

In the *third section*, I offer an example of *concrete perceptive situation*, starting from Simondonian analyses of *long duration perception*, focused on *undetermined factors* which interact during this process.

2.2 The Distance Between Simondon's Allagmatic and Determinism and Pure Indeterminism

Determinism and indeterminism are just borderline cases; because there is a development of systems: this development is the one of their individuation: there is a reactivity of the systems in relation to themselves. The evolution of a system would be determined only if there was not an internal resonance of the system, that is to say no exchange between the different levels which are hold within it and by which it is composed; in this case, no quantum exchange would be possible and you could know the development of this system thanks to a theory of the continuous, or thanks to the law of large numbers, such as in the case of Thermodynamic theory. Pure indeterminism would coincide to a huge internal resonance, thanks to which every modification arriving on a determined level would immediately reverberate on every level disguised as a change of structure.²

Simondon's philosophy is focused on internal processes of "operations of individuation"; we can conceive his peculiar viewpoint as an endogenous perspective fixed on all kinds of physical, biological, psychical, collective and technical procedures which produce, after their own achievement, the structuring of a new field of reality. As I shall show in the *second section* of this article, the analysis of "forms in themselves" is not the real purpose of Simondon's inquiry, unless they still contain potentials to trigger new individuations; otherwise, they are considered by Simondon just as "vestiges" of achieved individuations. His attention, as I said, is focused instead on processes and operations of individuation. When he analyses, for example, the *process offormation (prise de forme)*—that is a peculiar kind of individuation, i.e. the one of artificial realities, such as produced objects—taking the case of a brick of clay, he concentrates his own attention *within* this process, criticizing Aristotle's hylomorphic theory. He notes that the hylomorphic

² Simondon (2005), pp. 148–149.

philosophy supposes form and matter conceived as the two principles of individuation, instead of considering the internal dynamics of this operation of individuation. Such an operation is, on the contrary, the relation between these two scales of reality and the inner state of the system in which they interact. Form and matter cannot explain the *process* and its real endogenous dynamics, as he remarks in the *First chapter* of the *First part* of his *Thèse d'Etat, L'individuation à la lumière des notions de forme et d'information*³: form and matter are just theoretic schemes, aiming at representing (and simplifying) real composite half-chains, while individuation is the communication between these two scales of reality—i.e. the molecular (matter) and the molar (form) ones—and the state of the system in which they interact and communicate one another.

In other words, individuation can be conceived as the structuring process of a field of reality, which develops *within* a system. This system must be in a metastable state of equilibrium; metastability is a state of equilibrium full of potentials and virtualities. Individuation starts from a local (but not defined) trigger, which is called *singularity*, the activity of which spreads in a progressive way. Simondon names this progression transductive propagation, which spreads *within* the system, producing a new state of equilibrium, that can be, after this former individuation, the place of other operations of individuations only if it keeps on providing within it some unachieved potentials and virtualities. This is not just a simple process of *formation* (judged from an external point viewpoint), as the philosophical tradition uses to define this procedure, basing on Aristotelic and Thomistic concepts of form, matter, individual substance (*synolon*) and *materia signata*. On the contrary, this is a process of *in-formation*, which can develop and arrive to an achievement by means of the presence of potentials and virtualities, which are the internal conditions and proprieties of the system in which an individuation can be produced.

According to Simondon, determinism and pure indeterminism are just two ways to analyse and to explain processes, such as individuation, from an external viewpoint: Aristotelic theory is a deterministic, causal way to explain and to provide knowledge of a phenomenon, such as individuation, which, on the contrary, cannot be known and analysed with traditional theoretical categories. As Simondon writes in his *Thèse d'Etat*:

we cannot *know*, in the traditional meaning of this word, *individuation*; we can just individuate, individuate ourselves and individuate within ourselves; this conception is on the border of knowledge as we use to consider it; it is an analogy between two sorts of operations; it is a certain way of communication.⁴

According to Simondon, this is the reason why determinism (i.e. all sorts of causalism) and pure indeterminism (i.e. casualism) cannot be considered as correct approaches to the inner dynamics of individuation: they are, in fact, traditional ways for *grounding knowledge*, i.e. to make phenomenon easily understandable and intelligible to human faculties. According to Maurice Merleau-Ponty's

³ Simondon (2005), pp. 39–66.

⁴ Simondon (2005), p. 36.

phenomenology, conceived as a “direct description of [the] experience,”⁵ we can say that, from Simondon’s viewpoint, also individuation—conceived as an operation—can just be *described*, but it cannot be really *known*, neither explained with the traditional theories of knowledge nor graphically represented. His philosophical work on individuation provides the “tools” for a description of this process, but it does not offer any manner to know it in a traditional way of thinking *knowledge*. Simondon calls his own theory *allagmatic*, which means *theory of changes*; it is fixed on the description of the change of a structure in an operation and of an operation in a structure: this is not a traditional theory of knowledge; it can be maybe conceived as a sort of *keeping-in-touch* with processes from an internal, endogenous viewpoint. Employing a Sartrean expression, individuation is a *situation* that cannot be explained: it can just *take place*.

According to Simondon, determinism and pure indeterminism start from the consideration of a form, trying to *explain* the genesis of this form or its own changes: Simondon maintains that forms are just partial results of processes, or *vestiges*, and he underlines the fact that the philosophy of individuation, i.e. *allagmatic*, must not consider forms as a starting point of its inquiries; it should instead put itself *within* the operations that, *at least*, can provide forms. As I said, when individuation takes place, the considered system must be in a metastable state of equilibrium, namely it must be far from stable or instable state of equilibrium: it must hold potentials and virtualities. Its inner state can also be named a “disparate” condition, that is to say that there is not a “phase coincidence” between the “portions” of this system. Without a phase difference the system cannot go beyond its state of saturation, thanks to the action of a singularity, and thus no individuation can be produced.

According to this peculiar perspective, determinism and pure indeterminism start from “establishing” a form, i.e. a structure, to explain the way in which it arises or the way in which it evolves or develops. For this reason these structures or forms can be represented in a more or less defined way and so they can be also translated in a graphic model or in a mathematical explanation of its procedure of change. On the contrary, Simondon states that there are some elements of the process which cannot be graphically represented: these elements are the ones that allow the trigger of the process, that is to say potentials, virtualities and spatial localisation of singularity activity. They are peculiar of the contingent “situation” of a considered system and of its specific state of equilibrium: they can be neither determined nor represented. However, this procedure may not even be explained by a purely indeterministic perspective, because of the presence of vaguely defined structures which are within the system or arriving into it (if they are external to the system) as in the case of the structure of a singularity. In a specific case, this singularity can be conceived as the defined structure, i.e. provided with defined proprieties, of a seed crystal introduced (or already hold) in a solvent. Individuation is a (inter)mediation, i.e. a relation between different orders or scales of reality provided with their own

⁵ Merleau-Ponty (1945), p. 10.

structures and dynamics, which interact in a systemically way, thus producing a field of interactions and of changes of structures in operations and vice versa. As I said, Simondon's inquiry does not offer instruments to represent these processes: we can define allagmatic as a real non-representative theory, since it does not provide graphic, mathematical or logic schemes to *explain* and to represent operations of individuations. As he writes in the *First chapter* of his so-called *Third part* of his *Thèse d'Etat*: "potentials, precisely because they are potentials and therefore they are not structures, cannot be represented as graphic elements of the situation."⁶

According to Simondon, determinism and pure indeterminism consider at first a more or less defined structure as a model or a scheme of their own inquiries, trying to represent the genesis of a structure or its transformation even in a graphic way. But, as Simondon observes in a short text entitled *Allagmatique*, written in the same years of his *Thèse d'Etat*,⁷ these approaches are classical ways of explanation adopted by the *science of structures*, which developed in the seventeenth century with Galileo and Descartes; he maintains that sciences should also develop an inquiry into operations; the synthesis of these two perspectives—so called *allagmatic* inquiry—cannot preserve classical methods. Determinism, pure indeterminism, deductive and inductive methods cannot be considered useful approaches to individuation, because they are theories of explanation and theories of knowledge, i.e. their own viewpoint in an external one, i.e. *a posteriori*. This is the reason why they are inadequate to *describe* individuation. In other words, Simondon—as Jean-Hugues Barthélémy notes in his work *Simondon ou l'encyclopédisme génétique*⁸—is a sort of pioneer of the philosophy of Complexity, in the sense that he discusses and rejects traditional analytic approaches to reality.

In the case of every considered peculiar situation of system and of their metastable states, complexity is due to the presence of potentials and virtualities that are not representative or determined factors. These potentials and virtualities are however the pre-conditions to trigger an individuation, which is a sort of informational chain reaction, the dynamics of which cannot be known. What you could know are just final forms: but after the achievement of an individuation, forms or structures are just a sort of discard, the stability of which is the evidence of an already started thanatological process, unless they still contain some other potential. In any case, form is not the central topic of the philosophy of individuation: moreover, Simondon's theoretical attention is not really focused on "changing forms as a way of explanation of these forms",⁹ as René Thom interprets Simondon's inquiry, mainly because it is not concerned with *explanation* at all, but with

⁶ Simondon (2005), p. 238. This chapter is the *First paragraph* of the *Second chapter* of the *Second part*, entitled *L'individuation des êtres vivants*, of the *Thèse*, according to the original typed version of Simondon's *Thèse d'Etat*, a copy of which is preserved in the *Archives Canguilhem*—Fond Caphès and another one in the *Fond Hyppolite* of the *Ecole Normale Supérieure* of Paris.

⁷ Simondon (2005), pp. 559–566.

⁸ Barthélémy (2008).

⁹ Thom (1994).

description. The genetic operation of structuring forms, that is to say individuation, according to Simondon, is a description of a process *a praesenti*. According to Simondon, in fact, even the act of knowledge, namely the peculiar situation in which something can become intelligible, is an operation of individuation. *Within* an act of knowledge, conceived as an operation of individuation, you cannot distinguish the subject from the object (once more the *form* from the *matter*) because the subject and the object of knowledge are closely linked one another within this process. Only if one considers the process from above, reflecting and explaining the process, one can speak of subject and of object: this is the reason why Simondon's philosophy cannot be considered as a representative model of the concrete "situation" of knowledge *in progress*.

After having analysed the notion of *allagmatic* in Simondonian work, in the next section I shall focus on his philosophy of perception.

2.3 Form and Information in Concrete Perceptive Situations

Which are the theoretical consequences of Simondon's viewpoint in the specific case of philosophy of perception? In this article, I intended to assume this topic as an emblematic case in order to show the distance between determinism, pure indeterminism and Simondon's philosophy of individuation, concerning the process of invention of perceptive forms. It is necessary to explain what Simondon means with the concept of perception and what is really new in his perspective about this classical theme for philosophy. In the already quoted *Third part* of his *Thèse d'Etat*, Simondon holds that perception is a *functioning*—I should say, in a modern way of speaking, a *cognitive process or procedure*—that works within the psychical domain of living beings. It is important to remark that psychical individuation is not a main individuation: the only two kinds of main individuations you can find in Simondon's work are physical and biological individuations, conceiving the second one as a sort of *inchoative* physical individuation, namely an individuation that does not pursue its own achievement, its own stability. As he notes in his work: "the living domain would be a physical domain in suspension, slowed in its own process and indefinitely extended."¹⁰ On the contrary, psychical individuation is a more restricted operation rather than physical and biological ones; it arises within the biological domain of living individuals, that is to say into an already individuated domain, when problems that are posed by the *milieu* to individuals cannot be solved by means of their biological dynamics. Psychical individuation is also named by Simondon "individualisation", i.e. an individuation triggered within an already individuated field of reality, i.e. the biological one. Moreover, psychical individualisation is not a specific or special prerogative of human beings; as Simondon

¹⁰ Simondon (2005), p. 152.

explains in his work on individuation, all species of animals—in some peculiar and contingent cases—can develop psychical ways, i.e. psychism, to solve the external problems posed by the *milieu* in which they are sited. From this specific viewpoint, the differences between the animals, conceived as living beings which can trigger psychical individualisations, are just differences of degree: they are not qualitative or hierarchical differences. Perception is maybe the psychical functioning to which Simondon accords more attention with respect to the other psychical operations. But how does he analyse perception? Namely, which are the aspects on which does he focus is own interest? Even in this peculiar case, what he is interested in is the process of genesis of forms, more than to forms on their own as a result of processes. As he states in the *First paragraph*, of the chapter *L'individuation des unités perceptives et la signification*, he aims at offering a description of the process of “segregation” of perceptive units, that we can also call *perceptive images/forms*—according to Simondon’s idea that you cannot perceive without imagining, even if (as in the case of sensory-motor images) you can imagine without perceiving.¹¹ His inquiry is focused on the genesis of coherent perceptive images/forms, cached and described *within the process of their own production* and not at the end of this process. This process—he states—is a perceptive *situation* and it should be described *in progress*, that is to say in a concrete perceptive context. That is why Simondon states that most of the theories of perception do not consider living beings and—in this peculiar case—human beings in their own real perceptive situations, but just in a scientific and analytic context, such as the one of laboratory.

At the beginning of this paragraph, Simondon seems to sum up and develop the criticisms that Maurice Merleau-Ponty moved against associationism in his *Phénoménologie de la perception*; but Simondon’s viewpoint goes further; he also criticizes *Gestaltpsychologie* and its laws of perception. According to Simondon, the greatest limit of associationism lays in his inability to offer an account of inner coherence of perceptive units; as he maintains in this first paragraph of this chapter, associationism “does not explain why the individualised object has an inner coherence, a substantial link that can give it an effective interiority that cannot be considered as the result of the previous association.”¹² This kind of criticism was already moved to this psychological theory from Maurice Merleau-Ponty, in the *Second paragraph* of the *First chapter* of his work of 1945.¹³ Simondon and Merleau-Ponty criticize the idea that perceptive units coherence, according to associationism, would be a sort of indirect consequence of *habit* and of *memory*; associationism is in fact an application to the domain of scientific psychology of the traditional theories of modern empiricist philosophy, such as the thought of John Locke and the one of David Hume. Empiricism found in similarity, comparison and communion the laws that explain the process of so-called complex ideas and in the habit the ground for causal explanations. These theories, applied to the domain of

¹¹ See Simondon (2008).

¹² Simondon (2005), p. 233.

¹³ Merleau-Ponty (1945), pp. 20–33.

scientific psychology, maintain that perceptive units are the results of the association of sensible data. According to Simondon, these theories do not explain why these units have “real” inner coherence, that is to say why they show an internal organisation and a stable configuration. Maurice Merleau-Ponty opposed to this hypothesis *Gestaltpsychologie* viewpoint: he remarked that perceptive field shows a coherent organisation because of the systemic organisation of the units that we can perceive. Simondon goes further, criticizing also *Gestalttheorie* and especially its law of *Prägnanz*. As I said at the beginning of this article, Simondon develops a sort of endogenous perspective that aims at analysing processes and operations *a praesenti*, namely *in the middle of their development*. According to Simondon the psychologists of *Gestaltpsychologie*, especially at the beginning of their theoretical work, did not offer an adequate description of genesis of forms, even if they offered to the domain of scientific psychology two important notions, such as *isomorphism* between the inner operations of physical fields and the functioning of all other kinds of natural processes (i.e. physical and biological ones) and as the notion of *psychical field* (derived from Thermodynamic theory). He notes that *Gestalttheorie* should be considered as a sort of *deterministic* way to account for perceptive process and for structuring perceptive image/forms configurations. According to *Gestalttheorie*, perceptive units are *cached* in the external *milieu* and this phenomenon derives from a sort of deal between internal mental schemes and the external configurations and organisations of the elements forming a system. This is the main reason why the most *pregnant* forms—that is to say the most *significant* ones—are the *simplest*, the *most stable* and the *most organised* forms, i.e. forms which stand out among all other possible configurations in a perceptive process. Simondon observes that this peculiar viewpoint does not consider some factors: these factors interact in the operation and in the concrete situation of perception, that is to say *within* the system formed by perceiving *subject*, i.e. psychical individual in the act of perceiving, perceptible factors organized in configurations in external world, and the relation of these *two half-chains* of this process. Perception and, at last, segregation of perceptive units, conceived as perceived images/forms, are not just the result of a deal between determined or determinable external schemes of configurations and internal mental schemes: it is on the contrary a phenomenon that provides some other factors, which can be defined *relational undetermined factors*, which specify concrete and contingent perceptive situations. As I said, these relational factors could be named, according to Simondon, *undetermined factors*, even if his peculiar viewpoint, also in the case of perception, cannot be conceived as a pure indeterministic way to describe the process, because of the presence of defined structures interacting into the operation. These remarks about the presence of *undetermined factors* in a concrete perceptive situation just serve to Simondon’s purpose to underline the inefficacy and the insufficiency of purely deterministic perspectives to describe concrete perceptive situations. As he writes in his *Thèse d’Etat*:

the absolute set, in the physical world, is not just formed by the solved body and the solving body: it is the solving, the solved and the set of forces and potential energies that are translated by the word metastability, applied to the state of metastable over-saturated situation at the time in which the beginning of crystallisation operates. At this time of

metastability no deterministic “Good *Gestalt*” is adequate to form what is produced; the phenomenon such as epitaxy show the existence at a critical moment [...] of a sort of relative uncertainty of the result.¹⁴

According to Simondon, neither determinism nor pure indeterminism can describe the *work in progress* of a concrete perceptive situation; determinism *explains* results of perception as the emergence of a well-defined, stable form, cached in the world, the proprieties of which would pre-exist to the act of perception, namely within the inner organization of the set of perceptive configurations, the schemes of which *fit with* mental ones; pure indeterminism would *explain* perception as a process provided with casual dynamics that cannot be described. Even in the domain of perception, allagmatic provides a description of perceptive context, conceived as a system of interactions between structures and operations, which transform into one another. In other words, in deterministic and in pure indeterministic ways of providing an *explanation* of real perceptive contexts, a *dark zone* lies: this dark zone is the process on its own, that is to say *the individua(lisa)tion of perceptive units*:

[i]f form was really given and pre-determined, no genesis would be possible, no plasticity, no incertitude about the future of a physical system, of an organism, of a perceptive field [...]. There is a genesis of forms as there is a genesis of life.¹⁵

Simondon’s viewpoint is focused within this *critical moment* which is the *work in progress* of this genesis. From this peculiar perspective concerning the question of perceptive process of genesis of image/forms, *pre-determined* forms, namely stable, pre-organised, and *shaped forms* cannot be considered as real forms: they are just “structural schemes and not forms. It is possible—as Simondon remarks—that these structural schemes are inborn; but they are not enough to explain segregation of units in perception.”¹⁶ According to Simondon, perception is not just an activity of caching forms from outside world: perception is an operation of individua(lisa)tion of images/forms. These images/forms cannot pre-exist to the act of perception in a concrete perceptive situation; that is why they are *invented* in the process of perception: “perception is not caching a form, but it is the solution of a conflict, the discovery of compatibility, the *invention* of a form.”¹⁷

Even if perception is a restraint kind of individuation, however it shares with authentic individuations the prerogative to trigger a new equilibrium, a new state of system (i.e. physical and biological ones), in order to produce, to *invent* a new form, the genetic processes of which can be considered neither determined nor representable in a traditional way of explanation, i.e. in a mathematical or in any graphic way.

¹⁴ Simondon (2005), p. 234.

¹⁵ Simondon (2005), p. 233.

¹⁶ Simondon (2005), p. 236.

¹⁷ Simondon (2005), p. 235.

This is the starting point of his criticism against one of the essential laws of perception according to *Gestaltpsychologie*, i.e., as I said, the so-called law of *Prägnanz*, that is also known as *law of Good Gestalt*. This law is one of the main laws of perception, analyzed by the *Gestalt* psychologists since the beginning of the twentieth century: a “Good *Gestalt*” is a defined form, the pregnancy of which derives from its simple, coherent, regular and determined organization. In other words, *Gestalt* psychologists maintain that living beings organize their perceptive images according to standardized patterns—seemingly innate—such as geometrical forms (circle, triangle, square, etc.). According to *Gestaltpsychologie*, perception seems to be based on a biological deterministic law of order and simplicity, which reduces the complexity of perceptive contexts: the most pregnant form is the simplest one. Moreover *Gestaltpsychologie* focuses his inquiries on the perceptive interaction between living beings and “their own worlds”, assuming an “exo-genetic” viewpoint to describe perceptive experiences. As Paul Guillaume, the psychologist who disseminate *Gestalttheorie* in France at the beginning of the twentieth century, notes in 1937, in his work *La Psychologie de la Forme*: “psychical facts are *forms*, that is to say *organic units that individualize themselves in the spatial and temporal field of perception and representation*.”¹⁸ Even if Gilbert Simondon shares with Guillaume and the psychologists of *Gestalttheorie* the assumption that perceptive units can be considered as organisms (provided with a sort of autonomy and inner organization and configuration), he rejects the idea that their genesis would be just the emergence of the most stable and determined form above the others. “Best forms—as Guillaume observes—are the *regular, simple, symmetric ones*. The perceived form is the best one (law of good *Gestalt*) [...] all elements [...] are more efficient when they are linked with symmetry, less efficient if they are in conflict with it.”¹⁹ According to *Gestaltpsychologie*, the rules of proximity and similarity of the elements into a determined configuration (in a shaped organization) make their grouping pregnant, i.e. significant and meaningful. Simondon asks a question about this strictly determined way to analyze perceptive processes: “are circle or square, conceived as examples of “good *Gestalten*”, that is to say “pregnant”, stable, organized, simple forms—superior to the forms that an artist invents?”,²⁰ “cached in the act of their production, namely *during their genetic process*”. By asking this question, Simondon wants to underline the fact that the law of “Good *Gestalt*” seems to be based on the idea that forms mentally preexist and predetermine the operation of perception: that is why the resulting perceptive world seems to be a strictly predetermined and regular one, in which there is no place for singular and undetermined factors. On the contrary, he states that some undetermined factors interact during the process of perception. As he writes in his work:

¹⁸ Guillaume (1963), p. 22. This citation is taken from the Italian translation of Guillaume’s work of 1937.

¹⁹ Guillaume (1963), pp. 58–59. This citation is taken from the Italian translation of Guillaume’s work of 1937.

²⁰ Simondon (2005), p. 236.

“the square, the circle, and all the simple and pregnant forms are just structural schemes, rather than forms.”²¹ According to Simondon, during the operation of perception, perceptive images/forms are invented especially thanks to factors that cannot be reduced to a principle of order and simplicity. Orientation of the factors in the set, polarity, tensions, duration of perception can be considered examples of undetermined factors which interact *within* the process of *individuation* of perceptive images/forms. That is why forms invented by artists can be considered *more provided with information* than *well-shaped* geometrical forms, like a square or a circle. In short, perceptive images/forms are considered by Simondon as inventive solutions to problems, and the process of perception is considered an *in*-formational procedure. In a concrete perceptive situation, living beings do not know what they have to perceive, such as—on the contrary—in the most of the experiments in laboratory, where the subject of observation is more or less informed about what he has to do or to say. And even if instructions are not clear or explicit, he finds himself in an artificial context; he knows, for example, that he is observed and that his behavior is detected and measured; according to Simondon, “lots of experiments in laboratory, which take a subject that is not so much tense, perfectly assured does not accomplish the conditions in which genesis of forms takes place.”²² The law of Good *Gestalt* considers just the cases in which the subject knows what he has to do, not only in an artificial context, such as the one of laboratory, but in all the situations in which instructions are clear; real conflicts between living beings and their environment—such as his perceivable context—cannot be produced in pre-determinate contexts, because they are not *real perceptive situations*. Real conflicts cannot be produced into these contexts and I would say that, according to Simondon, when there is not a conflict you cannot have a real perceptive process. Perceptive processes—conceived as solutions of conflicts and as inventions of a new order of reality, i.e. operations of restraint individuation—are solutions to conflicts: they need a condition of “psychical tension”, or, as Simondon writes: “a degree of metastability. [...] This is the reason why the laws of good *Gestalt* are not adequate to explain the segregation of the units in the perceptive fields; they do not consider in fact the meaning of the solution given to a problem offered by perception.”²³ The forms invented by an artist can be conceived, according to Simondon, as real forms, because they are inventive solutions to perceptive conflicts, derived from potentials and virtualities, which are inner conditions of a metastable system. In other words, they are not just structural pre-determined or geometrical schemes, such as a circle, a triangle or a square: real pregnant forms are not best forms because they are stable and symmetric configurations of elements; they are solutions provided with meaning for a specific, concrete conflict and this meaning cannot be reduced to geometrical and deterministic patterns. On the contrary, this meaning is the *partially undetermined result* of a perceptive system of psychical

²¹ Simondon (2005), p. 237.

²² Simondon (2005), p. 235.

²³ Simondon (2005), p. 235.

tensions, conceived as the degree of metastability. Forms as circle, triangle and square are not invented forms in perception, for they do not retain the *uncertainty* of the previous potentials and virtualities of the system from which they arise. *Gestalttheorie*, according to Simondon's viewpoint, focuses on "transformation and degradation of forms rather than on their genesis."²⁴ This remark underlines the distance between Simondon's philosophy and all deterministic (and *pure* indeterministic) approaches to forms, which start from forms to explain their genesis, but also from those approaches that consider just their transformations in a fully representative way. Invented forms are, on the contrary, polarizations of creative activity, which are not representable in a traditional way, cached in its *critical moment of production* and *within their own genetic process*, providing a solution to a contingent problematic situation that needs a psychical effort, and not just the commitment of living forces or biological tendencies. These invented forms are partial results of an in-formational process, i.e. of a perceptive situation. But invented forms, that is to say the most "pregnant ones", are not the most stable ones: they are perceptive images/forms that maintain a great level of information for the perceiving subject concerned in a perceptive systemic situation. These information give and assure meaning to the solution but they are not even transferable to other situations: "law of *Prägnanz*", in the new meaning that Simondon accords to it, is strictly linked with the undeterminable factors of systemic contexts. The degree of metastability is not a definable state, such as stable equilibrium, and that is why Simondon seems to reject the possibility to represent, for example in a mathematical way, the real endogenous dynamics that work within a so-configured process. What science can *explain* are just the "vestiges of the individuation already achieved in a metastable state."²⁵ Simplified forms, such as stable forms, are schemes with very low information content: on the contrary, invented forms, conceived as real pregnant and meaningful forms *in progress*, are provided with a huge degree of information. Their origins should be found in the undetermined factors interacting during the process of perception, such as potentials and virtualities, but also as *duration of perceptive situation*, which are *non-representable* factors.

Summing up, the perceptive images, or perceptive *forms* are not only the simple product of the application of innate and determined schemes: they are, on the contrary, an inventive result including "undetermined" elements. Simondon tried to reproduce these concrete perceptive situations, making an experiment in a very unusual way to observe the processes working in the progress of a *long duration perception* of a turning linear object or of a turning simple geometrical figure. In the *third section* of this paper, I shall sum up the contents of a Simondon's scientific article, *La perception de la longue durée*, focused on the attempt to reproduce a *concrete perceptive situation* in a laboratorial context.

²⁴ Simondon (2005), p. 235.

²⁵ Simondon (2005), p. 237.

2.4 Long Duration Perception: An Example of Concrete Perceptive Situation

In his scientific article *La perception de la longue durée*, reporting the effects that can be produced in a laboratorial perceptive “situation”, Simondon—taking himself as the subject of his own scientific observations—notes that *long duration perception* can modify the perception of an object, interfering in this process as a real *undetermined* factor of system. In this peculiar laboratorial context, the duration of perceptive process is not pre-determined at the beginning of the experiment: “[during] a continuous observation, experimentally prolonged for many minutes or even for many hours, it can arise some phenomenon which do not arise during tachistoscopic arrangements or [during] middle durations.”²⁶ Simondon aims at showing how a strictly scientific method should be implemented by some factor which exceeds this perspective. This unusual kind of experiment, which opposed Simondon’s method of observation to the one that was used by most of the psychologists of his university (Sorbonne-Paris V), such as Paul Fraisse, is based on the idea that extending the duration of the presentation of a perceivable *stimulus* in a laboratorial context—without employing tachistoscopic methods, such as in the case of most of *gestaltic* and behaviorist scientific experiments—it was possible to recreate a tense perceptive situation. This situation must be a metastable system in which undetermined factors could provide to the invention of meaningful forms, conceived as solutions of perceptive problems. As Simondon writes in his article, during a long duration perception, “you can observe a genesis of the object, at first as an individualized unit and then as an organized unit, provided with a structure and a movement.”²⁷ Moreover:

perceptive-motor relation between a living being and his *milieu* retains, in an original and universal way, some less instantaneous detection and identification processes, because they are less institutionalized and less culturalized or conventional. These processes, which aim at the detection and identification of living world, arise during long duration perception [...]. Because of subsequent saturations, after having exhausted the meaning of a conventional and artificial stimulus conceived as a symbol or as a sign, the perceptive activity individualize itself in a unique structure, and then it concretizes itself in an organism.²⁸

Long duration perceptions try to recreate in an artificial context the situation of tense system in which subjects loose their awareness of a *safe condition* and self-consciousness of the instructions and stimuli. In this peculiar case, it is possible to *describe* a real genesis of invented perceptive images/forms, because of the interaction of undetermined factors which provide the invention of pregnant and meaningful solutions, namely organic perceptive units provided with information, without representing the result, but just describing some working effects within the

²⁶ Simondon (1969), p. 368.

²⁷ Simondon (1969), p. 398.

²⁸ Simondon (1969), pp. 399–400.

process. It is true that in this specific case, these observations seem to be a report or an *explanatio a posteriori* of a phenomenon working *a praesenti*. But the undefined conditions of experimental set, such as the no pre-determined time duration of observation and the fact that the subject of the experiment is at the same time the observer, acting the role of undetermined factors in the process of inventing forms, do not provide representative structural schemes, graphically representable, but just the description of proceeding dynamical effects.

Also on the basis of what has been learned from this experiment, the law of *Prägnanz* in the Simondonian definition seems to require a new criterion to evaluate invented perceptive images/forms: this criterion can be neither quantitative nor qualitative, as in the case of traditional methods of associationism and *gestaltic* theory. According to Simondon, this criterion, that must preserve the same undetermined feature of concrete perceptive situations and of their metastable state of systems, is the one of *intensity of information*. As Simondon writes in his *Thèse d'Etat*: “a very contrasted photograph, that is to say with a very violent light and shade effect, or an out of focus one can have more value and intensity than the same photograph in a perfect gradation, i.e. respecting the value of every detail or the geometrically centre of the photograph without deformities.”²⁹



²⁹ Simondon (2005), p. 242.



Invented perceptive images/forms, conceived as real pregnant forms—because of their indeterminate degree of intensity of information—can be conceived as *real concrete individualized forms* (i.e. contingent solutions to perceptive concrete situations) *just for the time of their genesis*, that is to say *within the working process of their individualisation* or if they are able to preserve, within their configuration, some potential factors of their previous and genetic context of production. The process once achieved, you can find, in some specific cases, just structural schemes, but not real perceptive images/forms, conceived as informational systemic processes in progress.

2.5 Concluding Remarks

According to Simondon, determinism and indeterminism just consider the end or the beginning of a process, as in the case of all kinds of explanations and reflections, but *living forms*, conceived as *living processes*, such as a perceptive operation of individualisation, are *in the middle*. They are, maybe, describable, but not really understandable: this is the reason why Simondon's philosophy of individuation cannot be conceived as a traditional theory of knowledge, even in the case of his analysis of perceptive processes. Simondon tries to put his own viewpoint *within* the working processes to *describe* the *genesis* of forms. This genesis, conceived as an operation of individuation, cannot be known (in a traditional way), because of the presence, *within* the process, of *undetermined, non-representable* factors.

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