

Musical Heuristics: The Role of Fictions in the Process of Musical Creation and its Pedagogy

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ABSTRACT

This article is a contribution to the understanding of fictions and the determining role they play both in musical creation and in its pedagogy. A previous philosophical investigation is indispensable to enter into the subject: starting from Kant's Critique of Pure Reason, we are confronted with what he calls heuristic fictions, undemonstrable as phenomena but at the same time indispensable to indicate the path that every project must follow. A classification of fictions is proposed below, thus distinguishing those that belong to the domain of philosophy and science from those that apply to art. Two psychological theories frame the production and development of artistic fictions: Winnicott's theory of the transitional object and Ehrenzweig's theory of the hidden order of arts.

The work continues with a presentation of musical heuristics, its methods and applications. Pedagogy is undoubtedly the field where the theoretical background developed in this article can be directly applied. A pedagogical work plan is presented, to facilitate the task of teachers, music teachers and creative pedagogues.

THE CREATIVE COMPLEXITY

“... All art consists in producing, executing, and combining the means of giving existence to one of those things which may be or may not be; and whose principle resides in the one who does, and not in the thing that is done. For there is no art in the things that have a necessary existence, nor in those whose existence is the result of the forces of nature, since these have in themselves the principle of their being”.¹

This quotation indicates the direction we will follow together: if, as Aristotle remarks, the principle of arts is to be sought in the artist and not in the work he produces, the research should be focused on his person: who is he? what are the motivations that lead him to create?

¹«[...] Tout art consiste à produire, à exécuter, et à combiner les moyens de donner l'existence à quelque chose des choses qui peuvent être et ne pas être ; et dont le principe est dans celui qui fait, et non dans la chose qui est faite. Car il n'y a point d'art des choses qui ont une existence nécessaire, ni de celles dont l'existence est le résultat des forces de la nature, puisqu'elles ont en elles-mêmes le principe de leur être ».

ARISTOTE, *La Morale ou Éthique à Nicomaque*, trad. M. Thurot, Livre VI, VI (1140 b), Éd. Firmin Didot, Paris, 1824. Ouvrage en ligne in <http://remacle.org/bloodwolf/philosophes/Aristote/morale6.htm>

Before any other consideration, one must remember this obvious difference: the artist makes the work arrive, the work arrives. This is what separates the action from the effect it produces:

“Between what happens and what makes it happen there is a logical gap [...]; what happens is the object of an observation, a consensual statement that can be true or false; what makes it happen is neither true nor false, but makes true or false the assertion of a certain occurrence, namely the action once done”.²

Besides, all the theories, principles or structural considerations formulated by the artist with regard to his work will be strongly impregnated with the colour of his conviction. The “logical force of his actions”, which in short means their truth content, is to be taken in brackets, since the only thing that really matters here is that these contents serve the artist as a tool for his realisation.

² « Entre arriver et faire arriver il y a un fossé logique [...] : ce qui arrive est l'objet d'une observation, donc d'un énoncé constatif qui peut être vrai ou faux ; ce que l'on fait arriver n'est ni vrai ni faux, mais rend vraie ou fausse l'assertion d'une certaine occurrence, à savoir l'action une fois faite ».

Paul RICOEUR, *Soi-même comme un autre*, Paris, Éditions du Seuil, 1990, p. 79.

Heuristics

The word *Heuristics* has the same Greek etymology as *Eureka*, "I found it". The term was introduced by the philosopher Alexander Baumgarten in 1750, to name the first chapter of his *Aesthetica*. Heuristics is the method of imagination that prepares us for invention and discovery, by accepting that all arguments are good if they can succeed in achieving the proposed goals. A principle is heuristic, therefore, when it is considered not on the basis of the truth it supports but by the fact that it contributes totally or partially to the realization of some project. In other words: If the components that serve as a starting point for a project are legitimised in whole or in part, not by their experimental verification but just by the simple fact of its fulfilment, the method used is heuristic. The components that participate in the heuristic realisation of a project may be proven principles, hypotheses or fictions; it does not matter what their individual truthfulness is, since what is at stake here is their capacity to convey the artist's conviction. We can go even further with Aristotle, who recommended for the composition of a tragedy, that

*"one must prefer what is impossible but probable, to what is possible but does not lead to conviction"*³

The emphasis should no longer be placed on the representation of what is, but on the representation of what could be. This takes the work of art out of the realm of the objective and places it on the side of the person who makes it exist, with all his load of subjectivity that cannot be circumvented: his experience, his appetites and his impulses. By giving the right of citizenship to fictions in artistic creation, Aristotle affirms art as a heuristic of realization.

Artistic Convictions

Applied to art, heuristics is thus presented as the discipline that studies the way in which artistic convictions are channelled. They are truly the foundation of the activity. In order to go deeper into the causes that generate them, it is necessary to admit the fact that since the discovery of the unconscious by psychoanalysis, no problem concerning the subject can be freed from the suspicion of hiding his true intentions. The interpretative context searches beyond the obvious

³« Il faut préférer ce qui est impossible mais vraisemblable, à ce qui est possible, mais n'entraîne pas la conviction. »

ARISTOTE, *Poétique*, traduction de Michel Magnien, Librairie Générale Française, 1990, p. 126.

to reveal several levels of understanding. The mechanisms, the intentions, the impulses that generate and nourish motivations are most of the time situated on different levels of the psyche or they constitute contradictory contexts in conflict, producing a plethora of dialogics (principles in opposition that fail to establish a synthesis) in inseparable correlation.

"The human being is a reasonable and unreasonable being, capable of measure and excess, rational and affective; subject to intense and unstable affectivity, he smiles, cries, but also knows how to know objectively; he is serious and calculating, but also anxious, enjoying, drunk, ecstatic; he is a being of violence and tenderness, of love and hatred; it is a being who is invaded by the imaginary and who can recognize reality, who knows death and cannot believe in it, who secretes myth and magic, but also science and philosophy; who is possessed by the gods and by Ideas, but who doubts about the existence of gods and criticizes Ideas; he is fed by verified knowledge but also by illusions and chimeras".⁴

To generalize this assertion, the personality of the artist is part of the transcendental complexity of mankind. It is the result of the entanglement of an inexhaustible series of complexities that interact to form a multiple unity:

"We say "man" (when this term includes both masculine and feminine) because it can be clearly and precisely defined in a genetic, anatomical, physiological, cerebral way. We say "humans" because man appears only through the most diverse men and women. [...] The human spirit is precisely said to be "the human mind", but it only appears in different minds. [...] The "human intelligence" is rightly called "human intelligence", but it only appears through very different intelligences. [...] "Culture" is rightly called "culture" because human culture can be defined by the fundamental traits I

⁴« L'être humain est un être raisonnable et déraisonnable, capable de mesure et de démesure, rationnel et affectif; sujet d'une affectivité intense et instable, il sourit, pleure, mais sait aussi connaître objectivement; c'est un être sérieux et calculateur, mais aussi anxieux, avide, joueur, ivre, extatique; c'est un être de violence et de tendresse, d'amour et de haine; c'est un être qui est envahi par l'imaginaire et qui peut reconnaître le réel, qui sait la mort et qui ne peut y croire, qui secrète le mythe et la magie, mais aussi la science et la philosophie; qui est possédé par les dieux et par les Idées, mais qui doute des dieux et critique les Idées; il se nourrit de connaissances vérifiées mais aussi d'illusions et de chimères ».

Edgar MORIN, *Le paradigme perdu: La nature humaine*, Paris, Éditions du Seuil, p. 123.

have indicated, but "cultures" is rightly called "cultures" because "culture" does not exist without "cultures". [...] The word "myth" is rightly used, but the myth only unfolds in myths. The same goes for religion. The same goes for magic. The same goes for ritual. They say "music" but it only enchants in form of different genres of music..."⁵

Morin speaks here in terms of *unitas multiplex*. However, it must be said that this concept produces an inescapable ambiguity, mainly due to the disjunctive thinking on which we elaborate and classify our knowledge. For this reason, it is difficult to conceive of a unity without making diversity disappear, and conversely, it is hard for us to have diversity in mind and continue to affirm unity. Despite this difficulty, we must learn to work with multiple units, because they are the true substance of the arts. From the point of view of music, for example, the diversity given by the different elements of a work (themes, melodies, timbres, participating instruments, etc.) cannot be conceived without keeping the totality of the work in view. The fundamental principle is that each composed sound interacts with the work as a whole, and it is from this coupled link between micro and macro form that the music results.

"Let us suppose we are in possession of an exhaustive theory that could explain all the phenomena concerning tempo, and of another theory that would perfectly account for melodic phenomena, and of a third theory on harmony. Let us imagine that we apply these hypothetical theories to the second movement of Beethoven's Seventh Symphony. First, we are faced with a rudimentary tempo, an unsophisticated melody and a basic harmony. In order to try to

⁵« On dit justement "l'homme" (quand ce terme englobe le masculin et le féminin) parce qu'il peut être clairement et précisément défini de façon génétique, anatomique, physiologique, cérébrale. On dit justement "les humains" car l'homme n'apparaît qu'à travers hommes et femmes les plus divers. [...] On dit justement "l'esprit humain", mais il n'apparaît que dans des esprits différents. [...] On dit justement l'"intelligence humaine", mais celle-ci ne se concrétise qu'à travers des intelligences très différentes les unes des autres. [...] On dit justement "la culture" car on peut définir la culture humaine par les traits fondamentaux que j'ai indiqués, mais on dit justement "les cultures" car "la culture" n'existe pas sans "les cultures". [...] On dit justement "le mythe" mais le mythe ne se déploie que dans les mythes. De même pour la religion. De même pour la magie. De même pour le rite. On dit justement "la musique" mais elle n'enchante que dans les musiques ».

Edgar MORIN, *La méthode*, 5. « L'humanité de l'humanité », Editions du Seuil, 2001, p. 67– 69.

understand how on earth the combination of such ordinary elements [...] turns into such an amazing music [...], we would need a correlational theory whose objective would be to explain the complexity of relations, not only between tempo, melody and harmony but also between all the factors involved in music".⁶

Moreover, when we speak of artistic creation, it is not limited to the realization of a work. In the same creative gesture, the artist generates his public and ensures the universal reception of his work. It can be said for example that Poe not only conceived the literary thriller genre but he also created the audience for it. It is in this sense that Baumgarten, founder of modern aesthetics, described the poet and, by extension, the artist, as *heterocosmic* (creator of several worlds).

Heterocosmic Art

"In so far as it obeys the principle of invention, the poet's universe differs from ours, and his truth is heterocosmic."Poetic inventions" are indeed heterocosmic inventions [...](Aesthetics, § 505 to 514, p. 214, note 1). The heterocosmic vision substitutes fiction for reality; its knowledge nevertheless remains aesthetic and not logical [...].The poet's art thus consists in making a fictional world that exists nowhere perceptibly present to us, in making the virtual sensitive and the invisible visible".⁷

⁶« Supposons que nous soyons en possession d'une théorie exhaustive, capable d'expliquer tous les phénomènes concernant le rythme, d'une autre théorie qui rendrait parfaitement compte des phénomènes mélodiques, et d'une troisième théorie, relative à l'harmonie. Imaginons que nous appliquons ces théories hypothétiques au deuxième mouvement de la *Septième Symphonie* de Beethoven. Nous découvrons, pour commencer, un rythme rudimentaire, une mélodie primaire et une harmonie élémentaire.

Pour essayer de comprendre par quel mystère la combinaison de données aussi ordinaires [...] se transforme en une musique aussi extraordinaire [...] il aurait fallu que nous soyons en possession d'une *théorie corrélationnelle*, dont l'objectif serait d'expliquer la complexité des relations, non seulement entre rythme, mélodie et harmonie, mais entre tous les facteurs impliqués dans la musique. »

Yizhak SADAÏ, « Analyse musicale : pour l'œil ou pour l'oreille ? », in *Revue d'analyse musicale*, numéro spécial *Les Réimpressions choisies*, 1985-1993, p. 15 – 17.

⁷« En tant qu'il obéit au principe d'invention, l'univers du poète diffère du nôtre, et sa vérité est "hétérocosmique". Les "inventions poétiques" sont en effet des "inventions hétérocosmiques" [...] (*Esthétique*, § 505 à 514, p. 214,

Like his predecessors the philosophers Leibnitz and Wolff, Baumgarten defines aesthetics as the sensible science of the confused intelligibility. But “confused” should not have a pejorative sense in this context; he sees, on the contrary, a qualitative and radical difference between intelligible and sensible, in the very place where his masters considered only a difference in degree. According to Baumgarten, artists carry out an activity that is destined to remain confused by nature. What artists have at their disposal in relation to their works *in statu nascendi* is, for the most part, a vague idea, without contours, imprecise, but clear enough to constitute a starting point for the project. What is confused in artistic activity is therefore produced by the fact that it is anchored in a singular experience, not in a concept. Moreover, it lacks a concept that frames it. Thus at degree zero of a creation, artists can imagine globally what the result of their work will be, but they cannot specify the details of the construction. Their vision can be global even when it remains diffuse for the perception of details. For the complete and detailed finishing of the work, the artists still have to go through a creative process. For this reason, art is an essentially heuristic activity, since the veracity of their proposals is demonstrated *a posteriori*, pragmatically, through their realization; the proposals cannot, therefore, be truths prior to implementation. And this has another important consequence:

“When a musician composes a symphony, was his work possible before it was real? Yes, if by this we mean that there were no insurmountable obstacles to its realization. But from this very negative meaning of the word, one passes, without taking care, to a positive meaning: one realizes that anything that happens could have been seen in advance by some sufficiently informed mind, and that it thus pre-existed, in the form of an idea, to its realization; - absurd conception in the case of a work of art [...]. Neither in the artist's thought, nor, even more so, in any other thought comparable to ours,

note 1). L'hétérocosmisme substitue la fiction à la réalité ; sa connaissance n'en reste pas moins esthétique et non logique [...]. L'art du poète consiste donc à nous rendre sensiblement présent un monde de fiction qui n'existe nulle part, à rendre sensible le virtuel et visible l'invisible. »

Jacques DARRIULAT, « Baumgarten et la fondation de l'esthétique », in *Introduction à la philosophie esthétique*, article en ligne in [http://www.jdarriulat.net/ Introductionphiloesth/PhiloModerne/Baumgarten.html](http://www.jdarriulat.net/Introductionphiloesth/PhiloModerne/Baumgarten.html)

*however impersonal, however merely visual, the symphony was not possible before it was real”.*⁸

In the field of art, there is no pre-realization definition. The craftsman, the manufacturer, the cabinet-maker, the cook, all start from a concept prior to the realization (a finished project, a detailed plan, a kitchen recipe...) on the basis of which they carry out their work. The artist starts from a project in the process of its conception; by nature, this project is neither true nor false, it is subject to changes in temporality, it evolves as it goes along, and it is situated in relation to the present in the realm of the plausible, the probable. This last assertion legitimizes the presence of fiction in art. The creative process is in reality a fictional universe in creation.

*“... heterocosmic truths are aesthetic truths, no more or less numerous than the truths that can be perceived by our reason. This distinction is thought to be from Leibniz, but it is from Tibullus, who had made a long account of the wanderings of Ulysses ending as follows: "And this, either we have seen it on our earth (it is true in the strictest sense), or the legend has given to these wanderings a new universe (it is true from a heterocosmic point of view)”.*⁹

⁸« Quand un musicien compose une symphonie, son œuvre était-elle possible avant d'être réelle ? Oui, si l'on entend par là qu'il n'y avait pas d'obstacle insurmontable à sa réalisation. Mais de ce sens tout négatif du mot on passe, sans y prendre garde, à un sens positif : on se figure que toute chose qui se produit aurait pu être aperçue d'avance par quelque esprit suffisamment informé, et qu'elle préexistait ainsi, sous forme d'idée, à sa réalisation ; – conception absurde dans le cas d'une œuvre d'art [...]. Ni dans la pensée de l'artiste, ni, à plus forte raison, dans aucune autre pensée comparable à la nôtre, fût-elle impersonnelle, fût-elle-même simplement visuelle, la symphonie ne résidait en qualité de possible avant être réelle ».

Henri BERGSON, *La pensée et le mouvant*, essais et conférences, Presses Universitaires de France, 1938, p. 13.

⁹« [...] les vérités hétérocosmiques sont des vérités esthétiques, ni plus ni moins nombreuses que les vérités qui peuvent être perçues par l'analogie de la raison. On pense que cette distinction est de Leibniz, mais elle est de Tibulle qui avait fait un long récit des errances d'Ulysse se terminant ainsi : “ Et cela, ou bien on l'a vu sur notre terre (c'est le vrai au sens le plus strict), ou bien la légende a donné à ces errances un nouvel univers (c'est le vrai d'un point de vue hétérocosmique)”.

Luc FERRY, traduction des premières paragraphes de l'*Aesthetica* de Baumgarten, in *Homo aestheticus*, éditions Grasset & Fasquelle, 1990, p. 435.

Again *Unitas Multiplex*: The Creator as Subject

The personhood of the artist constitutes a true polymorphic unit: on the one hand he is an individual, but at the same time he carries within him the society and the species, that is to say, we cannot separate the individual, sociological, cultural and genetic imprints at work in his work. On the other hand,

"... the relationship with others is virtually inscribed in the relationship with oneself: the archaic theme of the double, so deeply rooted in our psyche, shows that each one carries within him an alter ego (myself other) both foreign and identical to oneself. ...] It is because we carry within us this duality where "I am another" that we can, in sympathy, friendship, love, introduce and integrate the other into our I".¹⁰

In the very space that opens the "I" is the "You", without representations or intermediaries, in a relationship of mutual involvement and coupling.

"The relationship with the You is immediate. Between the "I" and the "You" there is no interposition of concepts, no schema and no previous image, and memory itself is transformed when it suddenly passes from the fragmentation of details to the totality. Between the I and the Thou there are no goals, no appetite, no anticipation; and the aspirations themselves change when they pass from the dreamed image to the appeared image. Every means is an obstacle. When all means are abolished, only then does the encounter occur".¹¹

¹⁰ « ... la relation avec autrui est inscrite virtuellement dans la relation avec soi-même : le thème archaïque du double, si profondément enraciné dans notre psyché montre que chacun porte en lui un *ego alter* (moi-même autre) à la fois étranger et identique à soi. [...] C'est parce que nous portons en nous cette dualité où "Je c'est un autre", que nous pouvons, dans la sympathie, l'amitié, l'amour, introduire et intégrer l'autre en notre Je ».

Edgar MORIN, *La méthode, op.cit.*, p. 82.

¹¹ « La relation avec le *Tu* est immédiate. Entre le *Je* et le *Tu* ne s'interpose aucun jeu de concepts, aucun schéma et aucune image préalable, et la mémoire elle-même se transforme quand elle passe brusquement du morcellement des détails à la totalité. Entre le *Je* et le *Tu* il n'y a ni buts, ni appétit, ni anticipation ; et les aspirations elles mêmes changent quand elles passent de l'image rêvée à l'image apparue. Tout moyen est obstacle. Quand tous les moyens sont abolis, alors seulement se produit la rencontre. »

Martin BUBER, *Je et tu*, traduit de l'allemand par G. Bianquis, Editions Aubier, Paris, 1969, p. 30.

Buber postulates here an intersubjective universality that comes into operation as soon as we meet others. The empathy that produces this encounter, the foundation of all human relationships, was recently proven by the discovery of mirror neurons:

"One of their essential functions (mirror neurons) is the understanding of action. It may seem odd that, in order to recognize what the other is doing, one must activate one's own motor system. In fact, this is not so surprising. Because visual observation alone, without involvement of the motor system, only gives a description of the visible aspects of the movement, without informing about what the action really means. This information can only be obtained if the observed action is transcribed into the observer's motor system. The activation of the mirror circuit is thus essential to give the observer a real and experiential understanding of the action he sees".¹²

KNOWING/FEELING, AN ENLIGHTENING DICHOTOMY

The Corporal Movements

Among all these complex diversities that interact to build the artist's personality, there is one that interests us particularly: the dichotomy feel/ know, originally developed by the psychologist Erwin Straus and, later on, by the philosopher Henri Maldiney.

According to Straus, there is on the one hand a conceptual thought of mediation conveyed by language at the origin of what we call knowledge, understood as the ability to represent and imagine situations and things. On the other hand, there is a pre-conceptual feeling that art mobilizes - but not exclusively, - by which we grasp situations and things instead of representing them to ourselves.

¹² « Une de leurs fonctions essentielles (des neurones-miroir) est la compréhension de l'action. Il peut paraître bizarre que, pour reconnaître ce que l'autre est en train de faire, on doive activer son propre système moteur. En fait, cela n'est pas tellement surprenant. Car la seule observation visuelle, sans implication du système moteur, ne donne qu'une description des aspects visibles du mouvement, sans informer sur ce que signifie réellement cette action. Cette information ne peut être obtenue que si l'action observée est transcrite dans le système moteur de l'observateur. L'activation du circuit miroir est ainsi essentielle pour donner à l'observateur une compréhension réelle et expérientielle de l'action qu'il voit. »

Giacomo RIZZOLATTI, « Les systèmes de neurones miroirs », article en ligne in http://www.academie-sciences.fr/conferences/seances_solennelles/pdf/discours_Rizzolatti_12_12_06.pdf

The originality of this idea is the conception of feeling as a consequence derived from our movements. With its movement, our body produces a continuous dynamic of union or separation, attraction or repulsion with the elements of our reality.

“The sentient being lives in the world and is destined, as part of this world, to unite with certain other parts of this world or to separate from them. Every act of separation or union is already, in the order of immanence, a being-mutated, better, a being-in-movement. Consequently, movement and sensation are linked to each other by an intimate relationship that it is important to describe and understand.

*The theory of sensation and the theory of movement cannot be treated separately, because in doing so, one also separates the processes of sensation from those of movement, their relationship is disturbed and one must renounce restoring it”.*¹³

For knowledge, conceptual thinking does not imply this internal connection with movement. Here the individual does not feel that he builds a unit with the knowledge he acquires. Precisely, as Straus says, all knowledge starts from a postulate, inherited from the famous cleavage *res extensa/res cogitans* from Descartes: the original separation of the knowing subject from the object to be known. This brings us to the presupposition of a reality that is independent of the subject and that pre-exists him. Starting from this indemonstrable principle, the object of knowledge and the knowing subject must necessarily be two. And this explains the questioning, the problematic proper to the subject who seeks to produce a representation of the world independent of itself and autonomous.

¹³ « L'être sentant vit dans le monde et est voué, comme partie de ce monde, à s'unir à certaines autres parties de ce monde ou à se séparer de celles-ci. Toute acte de séparation ou d'union est déjà, à l'ordre de l'immanence, un être-mû, mieux, un être-en-mouvement. En conséquence le mouvement et la sensation sont liés l'un à l'autre par une relation intime qu'il importe de décrire et de comprendre.

On ne saurait traiter séparément la théorie de la sensation et la théorie du mouvement, car ce faisant, on sépare aussi les processus de sensation de ceux du mouvement, leur relation se trouve perturbée et il faut renoncer à la restaurer ».

Erwin STRAUS, *Du sens des sens – Contribution à l'étude des fondements de la psychologie*, traduction de G. Thines et J.-P. Legrand, Editions Jérôme Million, 2000 pour la trad. Française, p. 235.

*“Knowledge seeks to grasp things as they are in themselves”.*¹⁴

This is the way a science progresses: one representation of the reality proves to be more adequate than another to explain a certain order of things. In knowledge, therefore, there is an inescapable search for truth, always subject to demonstration. Experimental verification is an essential part of validating the process of knowledge. On the other hand, neither progress nor demonstration makes sense when we speak in terms of feeling. In spite of all the theories he may involve in his creative process, the artist has nothing to demonstrate, since he is not looking for an objective truth.

Perception and Feeling

“With perception, which is the first level of objectification, we have already gotten out of the feeling.

“Like all knowledge, perception requires a general objective medium. The world of perception is a world of things with fixed and changing properties in an objective and universal space and time.

These two quotations are extremely important because they question the sensitive/intelligible divide, old monolithic pillar of Western philosophy. They both affirm that perceiving should be the first step of objectification, that is, of knowledge. This hypothesis was confirmed by the Psychology of Form, discarding the principle by which the perception of form would not produce synthesis. Perception brings us to form, a kind of prefiguration of the concept, already analysed by Ehrenfels in his writings of 1890. According to him, form is a whole qualitatively different from the sum of its parts, which allows for its transposition: a melody, for example, cannot be considered as a simple sum of sounds; it can be transposed while still retaining its identity.¹⁵

Let us now assume that we are moved by the beauty of the melody in question: here perception loses its individuality as a sensory channel and the interaction with our entire sensory system manifests itself in a globality of feeling: touched by a music, we hear it from our fundamental thrill, we grasp it with the totality of our being. In feeling, the whole-body listens, sees, touches, associates, reacts and prepares to react.

¹⁴ « La connaissance cherche à saisir les choses comme elles sont en elles-mêmes. » *Ibid.*, p. 372.

¹⁵ We develop this subject in “Critics of Schematism”.

The Ontological Break of the being: An Awareness

As we can see, Straus highlights what we can call an ontological break between apparently irreducible levels of being: feeling produces what Straus names a *pathic moment*¹⁶ of encounter where all thoughts, images and associations, even the whole activity of the being itself is polarized through a dynamic of attraction or repulsion of the subject feeling towards the thing felt. Here the boundaries between subject and object do not exist.

Knowing, for its part, is declined in a *gnosic moment*¹⁷ where the observation of the subject must ensure an objectivity that allows universal communication. Subject and object are delimited and constitute hermetic entities.

There is no structural bridge between these two moments: one is a relationship to the whole world, dynamic, with a reference to the object that is always changing as the subject is in motion as it approaches or moves away from the object. In the gnosic moment "we reach the in-self of things"; it is a relationship to the world where the subject looks for the demonstrations of his hypothesis, with a support, the language, whose role is the interface between him and the reality.

But how can we consider the irreducibility of feeling in relation to knowing when we know that in the practice of creation both of them must work very closely together, in order to be able to complete the realization? In other words, the scope of our research lies in the *Anwendung*, in the practical application of creation and not in a speculative theoretical approach. If the work is in its origin a sort of continuum which gradually unfolds in the determination of a repertoire of actions and hierarchies ordering the musical events, it is necessary to find an articulation that serves as a hinge, making possible the passage between the originally irreducible categories knowing/feeling. This is the role of the heuristic fictions: they shape a link, which, while remaining indemonstrable, results sufficiently plausible and convincing as to convey conviction and thus articulate the dichotomies.

¹⁶The Greek word *pathos* means "suffering," "experience," or "emotion." It was borrowed into English in the 16th century, and for English speakers, the term usually refers to the emotions produced by tragedy or a depiction of tragedy.

Dictionary Merriam-Webster, online in <https://www.merriam-webster.com/dictionary/pathos>

¹⁷"Gnosis": Greek word for knowledge. For a complete information see the dictionary Merriam-Webster, online in <https://www.merriam-webster.com/dictionary/gnosis>

HEURISTIC FICCTIONS

Kant and the Fictions

*"The conceptions of reason are, as we have already shown, mere ideas, and do not relate to any object in any kind of experience. At the same time, they do not indicate imaginary or possible objects. They are purely problematical in their nature and, as aids to the heuristic exercise of the faculties, form the basis of the regulative principles for the systematic employment of the understanding in the field of experience. If we leave this ground of experience, they become mere fictions of thought, the possibility of which is quite indemonstrable; and they cannot, consequently, be employed as hypotheses in the explanation of real phenomena".*¹⁸

Fictions, because these ideas do not and cannot have an experimental confirmation: they do not lead to any sensible intuition. Heuristics, because without regard for its truthful content they serve the realization of the knowledge on which they operate. Freed from any pretension of experimental verification, the Ideas of Reason are articulated pragmatically and determine precise directions to be followed for the practical realization of knowledge.

*"This is tantamount to saying, for example, that the things of the world should be regarded as if they had a supreme intelligence. In this mode, the Idea is strictly speaking only a heuristic and not an ostensive concept, and it indicates, not how an object is constituted, but how, under the guidance of this concept, we should seek the constitution and linking of objects of experience in general".*¹⁹

¹⁸"Die Vernunftbegriffe sind, wie gesagt, bloße Ideen, und haben freilich keinen Gegenstand in irgendeiner Erfahrung, aber bezeichnen darum doch nicht gedichtete und zugleich dabei für möglich angemommene Gegenstände. Sie sind bloß problematisch gedacht, um, in Beziehung auf sie (als heuristische Fiktionen) regulative Prinzipien der systematischen Verstandesgebrauchs im Felde der Erfahrung zu gründen. Geht man davon ab, so sind es bloße Gedankendinge, deren Möglichkeit nicht erweislich ist, und die daher auch nicht der Erklärung wirklicher Erscheinungen durch eine Hypothese zum Grunde gelegt werden können."

Immanuel KANT, *Kritik der reinen Vernunft (The Critique of pure Reason)*, Felix Meiner Verlag, Hamburg, 1976, p. 703.

¹⁹"Alsdann heißt es z. B. die Dinge der Welt müssen so betrachtet werden, als ob sie von einer höchsten Intelligenz ihr Dasein hätten. Auf solche Weise ist die Idee eigentlich nur ein heuristischer und nicht ostensiver Begriff, und zeigt an, nicht wie ein Gegenstand

Hans Vaihinger, father of *Fictionalism*,²⁰ says about this:

*“Kant wants to clear up the very frequent misunderstanding that considers the Ideas of Dialectic to be invalid, because they would give rise to confusion and equivocation; they would therefore be worthless, harmful. But no, they have an application with a precise purpose. The finality of these Ideas, characteristic of true fictions, will be emphasized [...] It will be shown here that these Ideas “are not only empty associations of content”.”*²¹

However, it must be noted that the only dimension of the mind that can produce heuristic fictions such as *Noumena*, the soul, the finality of science, the totality of knowledge, God, the finality of Nature, as well as the long list of Ideas or principles of regulation attributed to pure Reason, is in the first term: imagination. The problem is that the relationship between them is absolutely not clear. We can cite a rare example where the articulation between reason and imagination is mentioned:

*“For the imagination not to be exalted, but to be able to invent under the strict supervision of reason, something must always be fully certain beforehand, and not constitute an invention or a mere opinion: this element corresponds to the possibility of the object itself”.*²²

beschaffen ist, sondern wie wir, unter der Leitung desselben, die Beschaffenheit und Verknüpfung der Gegenstände der Erfahrung überhaupt suchen sollen“.

Immanuel KANT, *op.cit.*, p. 626.

²⁰Fictionalism: philosophic school according to which the pretended objective descriptions of reality are many times cases of “make believe”, metaphoric indemonstrable statements presented under the formula “as...if” (The main Vaihinger’s work is untitled in its translation *The philosophy of “As If”*.)

²¹“Kant will das naheliegende Missverständnis zurückweisen, dass die in der Dialektik in ihrer Nichtigkeit nachgewiesenen Ideen nur Täuschungen, nur Blendwerke seien, also wertlos, ja schädlich. Nein, sie haben trotzdem „ihre gute und zweckmäßige Bestimmung“ – die Zweckmäßigkeit dieser Vorstellungen, das Merkmal der echten Fiktionen wird wieder betont. [...] Damit wird gezeigt, dass sie „nicht bloß leere Gedankengänge sind“.

Hans VAHINGER, *Die Philosophie des Als Ob*, Felix Meiner Verlag, Leipzig, 1920, p. 627.

²²“Wo nicht etwa Einbildungskraft schwärmen, sondern, unter der strengen Aufsicht der Vernunft, dichten soll, so muß immer vorher etwas völlig gewiß und nicht erdichtet, oder bloße Meinung sein, und das ist die Möglichkeit der Gegenstandes selbst“.

After this assertion, which the philosopher should have developed further to remove ambiguities, a number of questions remains opened: What is the difference between concepts or Ideas of Reason, on the one hand, and the fictions of the imagination, on the other? How does this “supervised invention” of the imagination occur? What are the limits that should not be exceeded to prevent the imagination from “becoming exalted”? At what point in time can this “prior invention” of the imagination be considered “certain”? And what are its conditions of possibility?

Other Unavowed Fictions of the Critique

Aside from the Ideas of Reason, the territory of necessary but indemonstrable principles, it is important to note that the *Critic* abounds in fictions applied to sensibility (Transcendental Aesthetics) and understanding (Transcendental Analytics), which are not recognized by Kant as fictions:

*“In Transcendental Aesthetics and Transcendental Analytics one can, if one wants, also find a form of theory of fiction. Space, time, and in particular, categories, are representations whose fabric helps to systematically elaborate the perceived material; each of these representations, despite the fact that they are subjective and therefore not true, is necessary in order to be able to grasp what is given. From this point of view, they can be considered as fictions; but the majority of them lack the awareness, the acceptance of their fictitious nature [...] It can be concluded that they are fictions, but this “at one’s own risk”. For Kant himself, the fictions are found only in his doctrine of the Ideas of Transcendental Dialectic”.*²³

To the list of fictions that characterize the Critique of Pure Reason we should add the elusive *Ding an sich* (*Thing in itself*), which

Immanuel KANT, *op.cit.*, p. 701-702.

²³“In der „Transzendente Ästhetik“ und „Transzendente Analytik“ kann man, wenn man will, auch schon eine Art von Fiktionstheorie finden resp. in dieselben hineinlegen. Denn Raum, Zeit und insbesondere die Kategorien sind eine Art von Hilfsvorstellungen, deren sich das „Gemüt“ bedient, und das Empfindungsmaterial systematisch zu verarbeiten; jene Vorstellungen sind, trotzdem sie subjektiv und damit unwahr sind, doch dazu notwendig, um das Gegebene zu fassen. Insofern kann man sie als Fiktionen betrachten; aber es fehlt dabei doch den Meisten das Bewusstsein der fiktiven Natur dieser Vorstellungen [...] Man kann zu dem Letzteren sich berechtigt glauben, aber dann muss man es auf eigene Rechnung tun. Auf das Konto von Kant selbst kommt aber seine Lehre von den Ideen in der „Transzendente Dialektik.“ “

Hans VAHINGER, *op. cit.*, p. 618-619.

soon after its publication in 1781 produced the objections of several philosophers (among them Heinrich Jacobi and Gottlob Schulze).

Another famous fictional concept, the *a priori intuition*, was severely criticized by the young Austrian philosopher and mathematician Bernard Bolzano for lack of scientific rigour...

Among all these fictional constructions, there is one we would like to dwell on, given its fundamental importance to understand the artistic activity: it is the schema, to which the chapter "Of the schematism of pure concepts of understanding" ("Vor dem Schematismus der reinen Verstandesbegriffe") is devoted. The function of the schema is to phenomenalyze the pure concepts of reason, or categories, in relation to empirical or sensitive intuitions. Let us remember the context in which the schema is conceived: on the one hand, sentience brings the diverse through intuition; on the other hand, understanding is the focus of concepts where this sensitive diverse will be unified. In order to be able to subsume the diverse under the concept, understanding is equipped with a conceptual apparatus of notions that will make the task possible. These are the categories or pure concepts of understanding: quantity, quality, relation, modality. Without them, knowledge would become chaotic, since the concepts would be deprived of any possibility of linking or relating to each other. Categories are necessary to be able to unify knowledge. But, the subsumption of the sensible to the categories is in principle not possible; these categories have no present reality, they remain for the moment without any relation to any reality. For these categories to be operational, they must be attached to the sensible: *they must be phenomenalized*. Kant presents the difficulties of this task in the following way:

*"The pure concepts of understanding, if compared to empirical intuitions (or even, in general, sensible ones), are totally heterogeneous to them and can never be found in any intuition. How is it possible [...] to apply the category to phenomena?"*²⁴

According to Kant, categories on the one hand, and sensitive intuitions on the other, refer to two different ontological levels. In order to carry out

²⁴Nun sind aber reine Verstandesbegriffe, in Vergleichung mit empirischen (Ja überhaupt sinnlichen) Anschauungen, ganz ungleichartig, und können niemals in irgendeiner Anschauung angetroffen werden. Wie ist nun die Subsumtion der letzteren unter die erste, mithin die Anwendung der Kategorie auf Erscheinungen möglich [...]?

Immanuel KANT, *op.cit.*, p. 197.

the operation of knowing, it is these two apparently irreducible levels that should be linked.

"It is clear that there must be a third term, which must maintain a relation of homogeneity on the one hand with the category, and on the other with the phenomenon, and make it possible to apply this to the phenomenon. This mediatizing representation must be pure (devoid of any empirical element) and yet on the one hand intellectual, on the other sensitive. This is the transcendental schema".²⁵

What is a schema? Kant answers:

*"The schema is in itself at all times only a product of the imagination"*²⁶

As all products of imagination, the schema is a fiction. This fiction introduces the time, characteristic of phenomena, into the categories. In this way, the pure concepts of understanding are extracted from the purely speculative field and acquire the dimension of reality.

"A transcendental determination of time is homogeneous to the category (which constitutes its unity) in that it is universal and rests on an a priori rule; but it is, on the other hand, homogeneous to the phenomenon, in that time is contained in any empirical representation of the diverse. Consequently, an application of the category to phenomena will be possible through the transcendental determination of time, which, as a schema of the concepts of understanding, mediatizes the subsumption of phenomena under the category".²⁷

²⁵"Nun ist klar, daß es ein Drittes geben müsse, was einerseits mit der Kategorie, andererseits mit der Erscheinung in Gleichartigkeit stehen muß, und die Anwendung der ersteren auf die letzte möglich macht. Diese vermittelnde Vorstellung muß rein (ohne alles Empirische) und doch einerseits intellektuell, andererseits sinnlich sein. Eine solche ist das transzendente Schema".

Ibid., p. 197

²⁶"Der Schema ist an sich selbst jederzeit nur ein Produkt der Einbildungskraft."

Ibid., p. 199

²⁷"Nun ist die transzendente Zeitbestimmung mit der Kategorie (die die Einheit derselben ausmacht) sofern gleichartig, als sie allgemein ist und auf einer Regel a priori beruht. Sie ist aber andererseits mit der Erscheinung sofern gleichartig, als die Zeit in jeder empirischen Vorstellung des Mannigfaltigen enthalten ist. Daher wird eine Anwendung der Kategorie auf Erscheinungen möglich sein, vermittelt der transzendentalen Zeitbestimmung, welche, als das Schema der Verstandesbegriffe, die Subsumtion der letzteren unter der erste vermittelt."

Immanuel KANT, *op.cit.*, p. 198.

Critics to Schematism

At the end of the 19th century, the principle according to which perception would not produce syntheses, a postulate-pillar of the transcendental aesthetic, was severely questioned by the Gestalt-psychology, which experimentally demonstrated that form was already in close vicinity of the concept since it does produce syntheses allowing the insertion of particular cases. Form and concept are rather in a relationship of analogy than opposition in relation to their functioning:

*“Are “cognitive” in my opinion, all the mental operations involved in the input, storage and processing of information, that is to say, those that consist in perceiving by means of senses, memorizing, thinking and learning. This meaning of the term is incompatible with the one to which many psychologists are accustomed and which, by excluding sensory activities from cognition, reflects the distinction that I am trying to eliminate. I must therefore give “cognitive” and “cognition” a broader meaning, so that perception can be included. There seems to be no thought process that cannot be found at work - at least in principle - within perception”.*²⁸

The experimental discoveries of Gestalt theory force us to review the architecture of the first Criticism, in particular, the consequences that Kant draws from the various sensitivities of intuition and its articulation with understanding. If intuition produces syntheses analogous to those of understanding, pure concepts should be related to homogeneity, and not to heterogeneity in relation to sensible intuitions. Therefore, the transcendental scheme devised by Kant to plug the breach would not be necessary for the operation of knowing.”

For knowledge, therefore, category and form are two aspects of the same conceptualization process.

²⁸ « Sont “cognitives” à mon sens, toutes les opérations mentales qu’impliquent l’entrée, le stockage et le traitement de l’information, à savoir celles qui consistent à percevoir au moyen de sens, à mémoriser, à penser et à apprendre. Cette acception du terme est incompatible avec celle à laquelle sont habitués de nombreux psychologues et qui, excluant de la cognition les activités sensorielles, reflète la distinction que je m’efforce d’éliminer. Force m’est donc de donner à “cognitif” et à “cognition” un sens plus large, afin de pouvoir inclure la perception. Il semble qu’il n’y ait pas de processus de pensée que l’on ne puisse trouver à l’œuvre – en principe tout au moins – au sein de la perception. »

Rudolph ARNHEIM, *La pensée visuelle*, traduit par Claude Noël et Marc Le Cannu, Flammarion, 1976, p. 22.

But here a new flaw arises: when Kant refers to the diverse sensible, he does not specify which of the five senses is he talking about, as if all sensible intuitions shared the same way of incorporating diversity; and this, let us agree, is not acceptable and should open new questions and consequently new fields of research. In fact, between sight and hearing, on the one hand, and taste, smell and touch, on the other, there is a big difference: only the former are capable of generating forms. Compared to the other senses, the recognition of individual particularity takes precedence over the possibility of determining shapes where the individual could subsume. Here the question of heterogeneity remains open: would the schematism be exclusively applicable those senses which do not shape forms?

The Critic of Pure Reason: A Heuristic of Knowledge

Admitting that most of the principles of Kant’s Critic of Pure Reason are heuristic fictions, obliges us to reconsider the role of imagination in the cognitive process. Thanks to imagination, knowledge can no longer be considered just a passive set of judgments or interpretations on the truthfulness of facts. It becomes an action, a dynamic, a concrete and effective use that allows the optimal response of a subject to a given situation.

The existence of fictions that run through the entire architecture of the work transforms the traditionally recognized and accepted theory of knowledge into a generalized heuristic. This is Yves Bouchard’s thesis. According to his reading of the Critique of Pure Reason every time Kant envisages a totality that can serve as a framework for the diverse of sensibility and the diverse of understanding, he confronts us with a representation system of a heuristic order. Thus, the first Critique is organized around two distinct and fundamentally heterogeneous principles: that of *pure knowledge* and that of its *implementation*:

“The recognition of a difference between these two orders of unity constitutes an important moment in the epistemological undertaking of the first Critique. While the results of the Transcendental Aesthetic and Transcendental Analytic compete to bring to light the unity of understanding, which is realized in the object of a concept, the results of the Transcendental Dialectic reveal a higher order of unity, that of reason, without which the diverse conceptual of understanding would remain chaotic. ...] Thus we could assert that by unifying the diverse of sentience (intuitions), understanding provides

*an object to know (erkennen), and that by unifying the diverse of understanding (concepts), reason provides an object to act (handeln). Understanding appears to be doubly conditioned, on the one hand by sensibility, which gives it a diversity of representations, and on the other hand by reason, which gives it a unity of action”.*²⁹

The systematization of knowledge, so necessary for the development of science in general, is an Idea of pure reason in which concepts and categories of understanding subsist; but, as Kant explicitly states, systematization is not in itself knowledge. This means that it acts "from outside" on knowledge, so to speak, and determines a hierarchy, a necessary research direction to follow, which will allow the realization of a corpus organized according to its methodological imperatives. That is to say, the interpenetration between the constitutive principles of the diverse phenomenal and of understanding, on the one hand, and the regulatory principles of reason, on the other, constitute the basis on which the architectonics of Kantian epistemology is built. The fictions determine an indispensable heuristic for attributing un sense, un purpose to a given knowledge, a presupposed goal that is not part of the knowledge itself but that justifies its existence and value. Indeed, the first Critique not only answers the famous question of the content of knowledge, but at the same time questions its systematics, its purpose, its utility. For Kant, knowledge, far from being a static reflection, constitutes a dynamic function to be realized according to the systematic application of rules and principles, the correct use of which determines its correction. When the transcendental imagination finds its way to the realization of a project or the

explanation of a state of affairs, it crystallizes into a practice, within which theories, hypotheses, truths or fictions play the role of parts of a whole. It is because they contribute pragmatically to this realisation by being part of the whole, and not by their isolated importance, that these elements take on their value. And, as we have already explained, these are the salient features of any heuristic.

FICTIONS, A CLASSIFICATION PROPOSAL

The classification that follows should be understood more as a working hypothesis than as a definitive acquis. It opens the possibility of a fascinating discussion on the status and origin of fictions, which we will not intend to develop in this work. Indeed, it should be remembered that the questions raised by the semantic and ontological status of fictions have given our fellow linguists and logicians a lot of reflexion, and have done so for quite some time. Our interest in fictions is not directly related to this controversial context; they become interesting for this research as triggers of heuristics, only because of their possible efficiency in helping to realize a project.

Whether one starts from the idea that the statement postulates fictional entities, or whether one asserts that the statement postulates nothing of the sort, there is agreement that fictions are a product of the subject's imagination. (There is no agreement, however, on what it means that "imagination creates fictions"; does it produce them, or does it merely re-actualize them in particular contexts?) That being said, while there are fictions that remain fundamentally immanent, there are also others that can be shared by several individuals in order to accomplish a task. It is said that Paracelsus already distinguished between Fantasy and Imaginatio Vera, terms that designate both functions of the imagination. The many synonyms of the word *fiction* respond, in turn, to the immanent (illusion, utopia, reverie, fancy, chimera, mirage, daydream) or transcendental (invention, conceiving, creativity, objectifying, imaginativeness, externalizing, fabrication) possibilities it inherits from the imagination.

Our classification proposal includes three types of fiction: framework fictions, *ad hoc* fictions and transitional fictions.

Framework Fictions

Fiction frames knowledge by giving it a finality, a systematics, a totality where particular cases subsist. This is the case of the regulatory principles of reason that we have just explored. This help that fiction lends to knowledge is due to the fact that

²⁹« La reconnaissance d'une différence entre ces deux ordres d'unité constitue un moment important de l'entreprise épistémologique de la première *Critique*. Alors que les résultats de l'Esthétique et de l'Analytique concurrent à mettre en lumière l'unité de l'entendement, qui se réalise dans l'objet d'un concept, les résultats de la Dialectique dévoilent un ordre d'unité supérieur, celui de la raison, sans lequel le divers conceptuel de l'entendement demeurerait chaotique. [...] Ainsi on pourrait affirmer qu'en unifiant le divers de la sensibilité (les intuitions), l'entendement fournit un objet au connaître (erkennen), et qu'en unifiant le divers de l'entendement (les concepts), la raison fournit un objet à l'agir (handeln). L'entendement apparaît comme doublement conditionné, d'un côté par la sensibilité qui lui donne un divers de représentations, et de l'autre par la raison qui lui donne une unité d'action. »

Yves BOUCHARD, *L'holisme épistémologique de Kant*, Bellarmin/Vrin, Montréal/Paris, 2004, p. 136-137.

the elements of value of the latter (good or bad knowledge), as well as all the other global considerations that concern it, fall beyond its own determinations:

"[...] the understanding that is simply preoccupied with its empirical use and does not reflect on the sources of its own knowledge can certainly be very successful, but there is one thing it is not at all capable of, and that is to determine for itself the limits of its use and to know what may well reside inside or outside its entire sphere. ...] He is unable to distinguish whether or not certain questions are within his horizon, he is never sure of his pretensions and of what he possesses, and he must therefore expect to be often and shamefully called to order as soon as he oversteps the limits of his domain (as is inevitable) and wanders among chimeras and illusions".³⁰

These kinds of fictions determine a point of reference, a direction to follow, a waiting horizon on which knowledge does not act directly, but without which it cannot justify its existence. The cooperation between fiction and knowledge is the basis of an objective approach in which, among other things, the developments of all scientific approaches are framed.

Ad hoc³¹ Fictions

The fictions are articulated in an overall project whose result is demonstrable in the facts. They assume the role of hypothesis until an explanation more faithful to reality is stated. Hans Vaihinger's work, *Die Philosophie des Als Ob (The Philosophy of "As If")* already cited, is

³⁰«[...] daß der bloß mit seinem empirischen Gebräuche beschäftigte Verstand, der über die Quellen seiner eigenen Erkenntnis nicht nachsinnt, zwar sehr gut fortkommen, eines aber gar nicht leisten könne, nämlich, sich selbst die Grenzen seines Gebrauchs zu bestimmen, und zu wissen, was innerhalb der außerhalb seiner ganzen Sphäre liegen mag; denn dazu werden eben die tiefen Untersuchungen erfordert, die wir angestellt haben. Kann er aber nicht unterscheiden, ob gewisse Fragen in seinem Horizonte liegen, oder nicht, so ist er niemals seine Ansprüche und seines Besitzes sicher, sondern darf sich nur auf vielfältige beschämende Zurechtweisungen Rechnung machen, wenn er die Grenzen seines Gebiets (wie es unvermeidlich ist) unaufhörlich überschreitet, und sich in Wann und Blendwerke verirrt.»

Immanuel KANT, *op.cit.*, p. 289

³¹*Ad hoc*: for the particular end or case at hand without consideration of wider application. Concerned with a particular end or purpose.

MERRIAM-WEBSTER online dictionary, <https://www.merriam-webster.com/dictionary/ad%20hoc>

dedicated to unveiling this second type of fiction, which is strongly rooted in all areas of philosophical and scientific knowledge. Just as saliva or gastric juice prepares food to facilitate its digestion, our thoughts adapt the substance of knowledge, with its logical function, to enable its assimilation, using *ad hoc* invented solutions where the causes of phenomena remain unexplained.

"When a grain of sand enters under its shiny mantle, the Meleagrinamargaritifera will cover it with a mother-of-pearl cast that it produces itself, thus transforming the harmless grain into a dazzling pearl. The psyche in turn, when stimulated, uses its logical function to transform the absorbed sensory material into sparkling pearls of thought - in a much subtler process. When it is stimulated, the penetrated sentient material turns into a flashing bead of thought, into formations in which the logician follows the appropriating, organically purposeful logical function right into its most secret paths, right into its finest specifications".³²

Ad hoc fictions are not worthwhile in themselves, by their isolated truth content, but because of the fact that they bring explanation from some sort of reality. This leads Jean-Marie Schaeffer to say:

"[...] the question of whether or not a representation has or does not have a cognitive scope cannot be satisfactorily answered at the level of the semantic status of this representation considered in isolation".³³

Ad hoc fictions give rise to fictitious intellectual artefacts, albeit plausible, which are abandoned when a better explanation is found. In principle,

³²«Wie die *Meleagrinamargaritifera*, wenn unter ihren glänzenden Mantel ein Sandkörnchen gerät, dieses mit der aus ihr selbst produzierten Perlmuttermasse überzieht, um das unscheinbare Korn in eine blendende Perle zu verwandeln, so – nur noch viel feiner – arbeitet die Psyche vermittelt ihrer logischen Funktion, wenn sie gereizt wird, das eingedrungene Empfindungsmaterial zu blitzenden Gedankenperle um, zu Gebilden, in denen der Logiker die aneignende, organisch zweckmäßige logische Funktion bis in ihre geheimsten Wege, bis in ihre feinsten Spezifikationen verfolgt».

Hans VAHINGER, *op.cit.* p. 9.

³³«[...] la question de savoir si une représentation a ou n'a pas de portée cognitive ne saurait trouver de réponse satisfaisante au niveau du statut sémantique de cette représentation considérée isolément ».

Jean-Marie SCHAEFFER, « De l'imagination à la fiction », online in <http://www.vox-poetica.org/t/articles/schaeffer.html>

there can be general agreement about their fictional nature, which makes it possible to differentiate fictions from hypotheses. The differences between both should be evident: hypothesis is discovered, while fiction is invented; the hypothesis would always remain to be verified, while fiction would, by definition, be unverifiable. But in practice, the difference between the two remains imprecise. The true value of a fiction is that it functions as truth until proven otherwise. Let's quote here two *ad hoc* fictions which have each marked their historical moment: the *phlogiston*³⁴ and the *luminiferous ether*.³⁵ They functioned as temporary truths to explain certain behaviours of nature which were verifiable, or at least presupposed. Another example of *ad hoc* fiction was the existence of irrigation canals of Mars, which fired the imagination of writers such as Edgar Rice Burroughs at the beginning of the 20th century³⁶.

Transitional Fictions

While a framework fiction responds to an overall need to circumscribe the object of a science or project, and an *ad hoc* fiction is a simple element articulated in a verifiable context, the transitional fiction is a feeling, a state of mind, a transformation of personality giving rise to an environment that has its own rules, its own autonomous principles. Framework fictions and *ad hoc* fictions relate to

the object and serve to frame or enable knowledge; transitional fiction remains anchored in subjectivity. Those who enunciate or carry out transitional fictions lose awareness of their fictional character, they allow themselves to be carried away by illusion, they feel their fiction as truth. There is no demonstration here, since these fictions are something other than reality; they exist in superposition with it. They constitute a virtuality of their own, endowed with a special status for those who immerse themselves in them.

As in the case of framework fictions, transitional fictions can be organized in view of a particular finality. But while the principle of framework fiction presupposes a separation between the subject and the object of study, the transitional fiction implicates a fusional conception between subject and object. We can differentiate with Kant an objective finality and a subjective finality, depending on whether the finality is attributed to the external world or to the subject. Games and artistic productions belong to the latter domain.

THE TRANSITIONAL OBJECT

Here it becomes necessary to mention the theory of the transitional area and the transitional object of the psychoanalyst Donald Winnicott. His evolutionary interpretation of the origins of creativity begins with the observation that babies feel an inseparable unity with their mother during their first months of life. In a first period, characterized by Winnicott as subjective omnipotence, the baby feels that all his needs and desires will be satisfied by the mother immediately. The mother's behaviour will gradually limit this feeling; the "good-enough mother", unable to satisfy every whim of the child, will unconsciously help him to build an adult and independent psychological life. Here a gradual transition takes place, starting from the total confusion of the subject with the external world until the perfect separation and differentiation between the two. In this last phase of development, the levels of external and internal reality of the subject are conformed. But to reach this optimal stage of differentiation between the "I" and the world, the child first experiences an intermediate space, the transitional area, where he situates the objects of his experience.

"This intermediate area of experience, which is not questioned as to whether it belongs to the external or internal (shared) reality, constitutes the major part of the small child's experience. It will subsist throughout life, in the internal mode of experimentation that characterizes the arts,

³⁴ The theory of *phlogiston* due to J. J. BECHER in his 1667 book *Physical Education*, and later developed by G. B. Stahl, is applied to explain the effect of loss of matter of an object after its combustion. All flammable materials would contain an odourless, colourless and imponderable substance called *phlogiston*, which would be released during combustion. This substance would also be responsible for the rusting of iron and the corrosion of metals. With Lavoisier's discovery of oxygen in the 18th century, the *phlogiston* was discarded as hypothesis and turned out to be an *ad hoc* fiction.

³⁵ The *luminiferous ether* was the supposed medium for the propagation of light, similar in shape to water and air for the propagation of sound. MICHELSON-MORLEY's experiment (1887) was intended to prove its existence, but despite the efforts of Lorenz and other mathematicians of his time to support the theory, it was an outright failure. Einstein's Theory of Limited Relativity came later on (1905) to demonstrate the falseness of this hypothesis.

³⁶ Presumed astronomical discovery of Percival Lowell (mathematician, author, amateur astronomer), who continues the work of Giovanni Schiaparelli on the canals of Mars. Lowell's publications: *Mars* (1895), *Mars and its Canals* (1906).

The fiction of the irrigation canals of Mars was definitively abandoned after the astronomical observations of de La Baume Pluvinel (1909).

religion, imaginary life and creative scientific work".³⁷

Non-Immersive and Immersive Fictions

The intermediate area, at the genesis of the games, will gradually replace the mother figure with objects and behaviours that serve as compensation. Initially, these transitional elements are in fusion with the child's self, which cannot do without them. It is in a later moment of its evolution that a split occurs. In a transfer of meaning necessary for the development of their adult life, children learn to represent situations for fakes, splitting between what they are in reality and what they pretend to be through their games. But any emotional situation can act as a vehicle for immersion and cause them to slip into the virtual world, where the forgery becomes the real thing. The effect that Plato discovered and harshly criticized as a sham of the truth implies, for children as well as adults that the boundary between reality and fiction sometimes becomes difficult to determine. What begins as a simulacrum or representation can quickly become reality - which happens in children's fighting games, for example.

This has been characterized by Winnicott as the different types of passage that the transitional object presupposes:

"Winnicott thinks that transitional objects allow, at least, three transitions:

- *The one we have described, in which objects are regarded as vehicles so that the evolutive passage from the mother to the world of independence can be materialized;*
- *The t.o. replaces the mother in the child's mind. Therefore, she is represented by the t.o. although the children can perfectly distinguish both objects. Therefore, the t.o. facilitates the formation of symbols, representations; it allows, thus, the passage from the concrete to the abstract; and*
- *The t.o. causes the child safety, pleasure, comfort..., the child is invested with it and, therefore, allows the passage to the world of*

³⁷ « Cette aire intermédiaire de l'expérience, qui n'est pas mise en question quant à son appartenance à la réalité extérieure ou intérieure (partagée), constitue la plus grande partie du vécu du petit enfant. Elle subsistera tout au long de la vie, dans le mode d'expérimentation interne qui caractérise les arts, la religion, la vie imaginaire et le travail scientifique créatif. »

Donald WINNICOTT, *Jeu et réalité*, translation in French by Claude Monod et Jean-Bertrand Pontalis, Gallimard, 1975 for the French translation, p. 25.

assessments and meanings.[...]".³⁸

Winnicott's theory thus allows us to distinguish between a) non-immersive fictions, those where reference plays a metaphorical or allusive role, but where it is always possible to distinguish between reality and fiction, and b) immersive fictions where the child slides into a virtual world of meanings that will be superimposed on reality.

Alternating Functioning of Immersion

These two modalities of fiction, immersive and non-immersive, are not stable; there are passages from one to the other, situations or objects that facilitate immersion - which we call with Jean-Marie Schaeffer *vectors of immersion* - and others that bring the subject back to the reality of allusive and metaphorical representation, which we should consequently call *vectors of emergence*. Immersive fictions are the consequence of the identification³⁹, projection⁴⁰ and transfer⁴¹ that the subject will

³⁸ Carmen LOZA ARDILA, "Psychoanalysis, art and interpretation", in *Annuary of Clinical and Health Psychology*, 2, 2006, p. 60/61. Online in http://institutional.us.es/apcs/doc/APCS_2_eng_57-64.pdf

³⁹ « Identification: psychological process by which a subject assimilates an aspect, a property, an attribute of the other and transforms himself, totally or partially, on the model of the latter. Personality is constituted and differentiated by a series of identifications ».

« Identification: processus psychologique par lequel un sujet assimile un aspect, une propriété, un attribut de l'autre et se transforme, totalement ou partiellement, sur le modèle de celui-ci. La personnalité se constitue et se différencie par une série d'identifications. »

Jean LAPLANCHE et Jean-Bertrand PONTALIS, *Vocabulaire de psychanalyse*, Presses Universitaires de France, Paris, 1967, p. 187.

⁴⁰ « Projection: in the properly psychoanalytical sense, an operation by which the subject expels from himself and locates in the other, person or thing, qualities, feelings, desires, or even "objects" that he does not recognize or refuse within himself ».

« Projection : dans le sens proprement psychanalytique, opération par laquelle le sujet expulse de soi et localise dans l'autre, personne ou chose, des qualités, des sentiments, des désirs, voire des « objets », qu'il méconnaît ou refuse en lui. »

Ibid., p. 344

⁴¹ « Transfer: In psychoanalysis, refers to the process by which unconscious desires are actualized on certain objects within the framework of a certain type of relationship established with them and eminently within the framework of the analytical relationship ».

« Transfert : Désigne, en psychanalyse, le processus par lequel les désirs inconscients s'actualisent sur certains objets dans le cadre d'un certain type de relation établi avec eux et éminemment dans le cadre de la relation

put into operation spontaneously and involuntarily in relation to the situation, the person or the object under consideration. In non-immersive fictions, the feeling of self-criticism or the analysis of the situation prevents feelings of fusion.

The alternating functioning of the fictions is fundamental for the meaning of the actions. They are used "for real" in their everyday use, but they can at any time recover their fictional nature.

Example of Application to Art

While trying to criticize Homer, Plato discovered in *The Republic*, around 315 B.C., the mechanism of immersive fiction:

“(Socrates in dialogue with Adimante)

Tell me, you know by heart the beginning of the Iliad: Chryses prays to Agamemnon to give him back his daughter; Agamemnon becomes angry, and Chryses, who has therefore failed, invokes God against the Achaeans.

*[...] You know, then, that up to these verses, ... it is the Poet who speaks, and he does not try to make us imagine that it is someone else; but then he begins to speak as if he were Chryses himself: he tries to give us as much as possible the impression that it is no longer Homer speaking, but this priest ...”*⁴²

In mimetic immersion there is thus a first moment of preparation, in which we still keep the distance between the model and its representation. We are consciously in the metaphor: the model and its representation remain two autonomous entities with perfectly delimited boundaries.

Then there is a trigger that will produce immersion, which in this case is the emotion awakened by the passion of the protagonists. It is this emotion that makes the effect of representation disappear.

analytique». *Ibid.*, p. 492

⁴²« (Socrate en dialogue avec Adimante)

Dis-moi, tu sais par cœur le début de l'Iliade : Chrysès prie Agamemnon de lui rendre sa fille ; Agamemnon se met en colère, et Chrysès, qui a donc échoué, invoque le Dieu contre les Achéens.

[...] Tu sais donc que jusqu'à ces vers, [...] c'est le Poète qui parle, et il ne cherche pas à nous faire imaginer que c'est un autre ; mais ensuite, *il se met à parler comme s'il était lui-même Chrysès : il essaie de nous donner autant que possible l'impression que ce n'est plus Homère qui parle, mais ce prêtre [...]*»

PLATON, *La république*, translation Jacques Cazeaux, le Livre de Poche, Librairie Générale Française, 1995 for the French translation, First tableau, scene 2, "The arts, the form." (Book III – § 392 / § 393), p. 105.

The metaphorical distance is abolished: the "a as if it were b" fades away leaving the place to "a = b". This is ultimately what Plato fears most: a pernicious lure that, according to him, confuses reality and fiction, since imitation has the power to mobilize real feelings.

Here is the essence of artistic activity: to be able to slide from a metaphor to a personification, from a voluntarily figurative sense to an involuntarily proper sense. The Greek tragedies provide a good example of these two moments, which we can characterize as the representation and grasping of the work. The first moment is given by the narrative of the choreographers, through which the audience is made aware of the plot, while in the second moment the *pathos* of the theatrical representation of the events produces the identification of the audience (Aristotle's catharsis) with the characters.

Generalization

In agreement with Winnicott, we state that the individuation process that children experience during their early years constitutes the epistemological basis of all creative processes. If we agree that the ego represents the fusional identity between the artist and his work before the creative process begins, and that the non-ego represents the separation of the artist from his work at the moment his labour is finished, there is indeed an intermediate field between these two states of mind that is neither pure external reality nor pure subjectivity, but the two interrelated levels that work together.

As in the case of children, the individuation of the artist works as a gradual dynamic between absolute identity and distancing. To enable this transformation, a separation between being and its attributes, i.e. between the artist and his production, must necessarily take place, so as to establish a mediation between the self and the completed creation. "I am the creator of this work": the language operates the mediation between the two. The original unity is broken.

In order to achieve this separation between the creator on the one hand and what germinates in him on the other, artists do what children do with their games: they implement the unconscious and involuntary illusion of a split in their personality. Sometimes they feel an external presence controlling the operations that will bring the work to fruition. Sometimes they also appropriate techniques, scientific or philosophical theories and seek to objectify their own creative functions. But these theories cannot find their value in isolation, without considering the indefinable reservoir of

images, impressions, dreams, intuitions, memories, gestures, etc. that also intervene in the creative process. The interaction of the theories with the other elements that participate in creation gives the process its essentially holistic character, where the result is more than the simple addition of the elements that make it up. It should always be kept in mind that the theories are not invoked here for their cognitive value, but that they are mobilized because of the heuristic force that acts on the artist and pushes him to create. It is for this reason that they may or may not be useful in relation to the particular situation in which they apply, and not because of their real cognitive value.

The finished work gives rise to a paradox that sheds light on its true nature: on the one hand, it is the affirmation of the composer, who sees himself defined by it and is legitimated as a creator in the objective manifestation of his craft. But, on the other hand, the work is the negation of the composer; it is no longer one with the composer, it no longer belongs to his subjectivity, it is the patrimony of the world, it flies towards the realm of accomplished facts where the composer, pure act, pure process, cannot follow it. Moreover, if this negation did not take place, the potentiality of future works would be compromised, because the creator would remain chained to that work without being able to experiment with new creative processes, new possible identifications. This second paradox helps us to understand that, within the creative field, the principle of non-contradiction, according to which being cannot both be and not be at the same time and in the same respect, must be discarded here because it is simply inoperative. Assertions in the field of art can be true and false at the same time; this explains the urgency of heuristics as a method.

The end of the creative process is characterized by a last paradox: precisely when the identification between the creator and his work should reach its optimal state, the piece is finished. The virtual split between creator and work is consumed. From that precise moment on, the two are two autonomous and different entities.

The appropriation and internalization of the musical materials with which the work will be made produces as a consequence the appearance of a virtual reality, which, similar to children's games, is superimposed and interacts with the outside world.

The Creative Conflict

In the situation just described, the creators experience the fiction of a split personality: they

are themselves, on the one hand, and they are also the nascent work in a state of evolution, on the other.

*“In any kind of creative work, there comes a moment when our power of free choice ceases. The work takes on a life of its own, leaving its creator only the alternative of rejection or acceptance. A mysterious “presence” is then revealed, giving the work its own living personality. I have already evoked and will continue to evoke the dialogical exchange that takes place between the creator and his work, and the need felt by the artist to treat his work as an independent being endowed with an autonomous life”.*⁴³

Identification functions as recognition of their own image in the profile of their fictional double, the work. This is how a type of creative process is generated where artists are confronted with their materials within a dynamic of selective choice. The process we are talking about is not continuous and produces alternately the loss and recovery of identification with the work, that is to say, moments when the artist accepts the work as his own image, and moments when he rejects it because he does not recognize himself in it.

Syncretic Vision

The creative conflict is due to the fact that creators operate in two different, alternative and irreducible modes in order to realize their work. The first mode is a syncretic vision capable of distributing materials in a global, non-hierarchical way. In this mode, the artist's attention is not focused, but diffused. The vision of the work in gestation resembles a dream, without any concatenation between the materials, actions or situations proposed, without temporal or spatial references.

Analytical Vision

The syncretic vision will be followed by an analytical vision, capable of introducing a hierarchy

⁴³ « Dans tout type de travail créateur, en effet, vient un moment où cesse notre pouvoir de libre choix. L'œuvre prend une vie propre, ne laissant à son créateur que l'alternative du rejet ou de l'acceptation. Se révèle alors une mystérieuse “présence” qui donne à l'œuvre sa propre personnalité vivante. J'ai déjà évoqué et j'évoquerai encore l'échange dialogué qui s'instaure entre le créateur et son œuvre, et le besoin que ressent l'artiste de traiter son œuvre comme un être indépendant doué d'une vie autonome. »

Anton EHRENZWEIG, *L'ordre caché de l'art*, translation by Francine Lacoue-Labarthe et Claire Nancy, Gallimard, Paris, 1974, p. 121-122.

in the order of events, a sort of causality between actions and a selection of the materials used. The analytic vision establishes rules and principles, distinguishes between substance and form, polarizes the unfolding with a view to a possible outcome and end. Analytical vision is like the memory of a dream, where seemingly insignificant details disappear; it will round out inconsistencies by producing the hypothesis of an ordered plan. The attention characteristic of this second moment is precise and acute. As soon as it begins, the artist risks no longer recognizing his image in the previous syncretic layer he is ordering. A new syncretic vision may follow. It will introduce new elements and produce new arrangements of materials. This will be followed, perhaps, by a new analytical vision; the two visions will alternate until the work is completed.

Dialogic of both Visions

The two visions, syncretic and analytic, are irreducible to each other, opposed by a dialogic which, in principle, cannot be resolved by a synthesis; even the finished work is not the synthesis of the two, but a moment of provisional truce, which will end when a new work will be in progress.

“Conscious thought is narrowly focused and strongly differentiated in its elements; the more we penetrate into imagery and subterranean phantasms, the more the single-track divides and branches out in unlimited directions to give its structure a chaotic appearance. Creative thinking is able to oscillate between its differentiated and undifferentiated modes, and harness them together to assign specific tasks.”⁴⁴

It is therefore the opposition between the two visions that will generate the work, producing a selective spiral dynamic. This is the power of contradiction in art, the real root of the whole creative process: in the syncretic phases, the creator experiments with his materials, plays with them freely, combines them in all directions. He does not feel the need to make choices; he will just "scan" his materials spontaneously. In the analytical phases, the creator finds it difficult to recognize

what he has achieved during the undifferentiated syncretic levels. He reshuffles the work in order to introduce a certain order, a kind of logic, a hierarchy of events.

With Ehrenzweig's theory we find, once again, the question of collaboration between irreducible dimensions. The two visions must necessarily occur sequentially, with the artist's idea of his finished work as a horizon. It is this transitional fiction that will control the actions and the flow of events in the work, functioning as an articulation between the visions.

MUSICAL HEURISTICS

Birth of a Discipline

The reason for conceiving a new musicological discipline complementary to musical analysis starts from the idea that knowledge of music implies, in parallel to any hermeneutic approach, another approach, practical, pragmatic, untranslatable in words. The complexity of the musical phenomenon - halfway between an ephemeral gesture and a crystallised realisation - results from the interaction between several superimposed processes (inner hearing, composition, interpretation, writing the score, instrument making, recording, room acoustics, etc.) which determine the quality of the result. The music also produces emergents and is subject to constraints that cannot be revealed before the realization. In this context, we can say that music is richer, and at the same time poorer than the score: in music, like nowhere else, the Whole is not equal to the sum of its parts. It is for this reason that Musical Analysis cannot remain confined to the score, and it must look for the music elsewhere, where it really occurs. It is obvious that from these premises, the met language of musicology proposes an almost impossible task: to translate into words a multidirectional, fundamentally contingent and rich reality. Moreover, its conceptual identification is not neutral: it has its own characteristics, independently of the reference. It is only within a discourse and through the mediation of language that it is possible to isolate components, or even themes, motifs, developments, as well as to determine structures and forms; musical reality, for its part, remains indifferent to any interpretation of this nature and is presented as a continuum inseparable in parts.

Trying to avoid this discrepancy between music and musicology, Theodor W. Adorno had imagined immanent analyses for approaching the music of Mahler and Berg, proposing *ad hoc* categories that should be grafted onto the music like a glove on

⁴⁴ «La pensée consciente est étroitement focalisée et fortement différenciée dans ses éléments; plus nous pénétrons dans l'imagerie et les phantasmes souterrains, plus la piste unique se divise et se ramifie en directions illimitées pour donner à sa structure une allure chaotique. Une pensée créatrice est capable d'osciller entre ses modes différenciés et indifférenciés, et de les atteler ensemble pour leur confier des tâches bien précises. »

Anton EHRENZWEIG, *op. cit.*, p. 29.

the hand. Without perhaps knowing it, Adorno was coming up against a problem that went beyond the strictly musicological. In fact, the inescapable weakness of any discourse - already revealed by Plato in his Seventh Letter - is that it cannot help but hide the matter of its speech at the same time as it reveals it. This case applies perfectly to musicology. Because with the same procedure by which musical analysis will deconstruct a piece into different parts, intending to introduce a criterion of intelligibility of its course, it will at the same time distort this piece by depriving it of its natural and living fluidity. Because analysis tends to reduce the ineffable of music to a discreet and static sampling of significant moments, it seems obvious to us that it is necessary to elaborate a complementary knowledge about music that can approach it as what it really is: *a continuous dynamic process*. In favour of this position, there is also another important reason: music is not only constituted by sounds, but also by all that is between sounds, and that no analysis can reveal. This last interaction is imponderable; only fiction can account for this evanescent fluid. The intersections, the interlacing, the transitions constitute the true being of music, which no discontinuous approach allows us to approach.

The continuum of music is felt as an energy deployed in multiple directions and passages between one musical moment to another. In the face of the musical moment, our whole body reacts through its personal experience and living.

Approaches

Music heuristics is the field of music, musicology and music education that stimulates, studies and models the different forms of creative processes in music, analysing the different fictions embedded in these processes. As part of transitional fictions in general, compositional fictions are related to the feeling of change in the personality of creators as their composition becomes more precise. For example, it is very common for composers to feel the music they are producing as a presence of their own, distinct from themselves. At some point in the creative process, the composer may feel that the music imposes its own logic on him and shows him the path to be followed for its optimal completion: thus, Stravinsky affirmed, several years after the creation of *The Rite of Spring*, that he had been an instrument through which this work had come into the world.

“In great art, and it is only great art that we are talking about here, the artist remains, in relation

to the work, something indifferent, almost as if he were a passage for the birth of the work, which would annihilate itself in the creation”.⁴⁵

Another example of fiction is given by the global intuition of form during the composition process. Very often, the creators have the impression that the piece has already been born and, in the representation of this piece as a reality, they organize the path to be followed and the actions to be taken. In fact, for many of them the piece already exists, even when it is at its origin. Many composers construct their own language from the confrontation between the musical materials at their disposal and this global intuition of form, through a progressive identification and selective choice of materials and musical events. Their compositional process is organised in the shape of an inverted pyramid, with an increasing degree of determination in relation to the definition of events.

Other composers regard composition as an involuntary act, which constitutes an inverse fiction to the former. Strictly speaking, the notion of creation itself is contradicted by this unintentionality. In reality, composition as a not wanting act, as John Cage affirmed, would mean wanting always but differently. Thus, even in the most indeterminate play (4'33" by John Cage, or "December 1952" by Earl Brown's *Folio*, for example), a minimum of precisions and preliminaries must be laid down for the project to be feasible and recognized in its multiple variants and versions.

In order to compose his work, the creator has a number of dominant ideas at his disposal, which function as pivots or fixed points around which the piece develops. These ideas are heuristic principles of creation. In perfect accord with what Aristotle said about art in general, their distinctive character is contingency; they are so, but they could be other. As far as music is concerned, heuristic principles vary according to the composer, and, within the production of the same composer, according to his maturity and the problems posed by his creations (several

⁴⁵ « Dans le grand art, et c'est du grand art seulement qu'il est ici question, l'artiste reste, par rapport à l'œuvre, quelque chose d'indifférent, à peu près comme s'il était un passage pour la naissance de l'œuvre, qui s'anéantirait lui-même dans la création. »

Martin HEIDEGGER, « L'origine de l'œuvre d'art », in *Chemins qui ne mènent nulle part*, translation by Wolfgang Brockmeier, Gallimard, 1962 for the French translation, p. 42.

works are likely to share the same principles of regulation). What a composer asserts to be his compositional principles, are in fact his heuristic fictions. They serve as "fulcrums" for the realization of their works and are deeply merged with the composition of their music. It is for this reason that the theories of Schillinger, Messiaen, Boulez, Xenakis, Schaeffer, Stockhausen, Pousseur, Penderecki, Lutoslawski, Cage, Brown, Nono, Berio, Maderna, Ligeti, Scelsi, Grisey, Fernyhough, and all the other great creators I do not mention here, should be interpreted according to their heuristic value, and not according to their value of objective truth. This is valid even when the theories invoked by the creators have an objective value in the fields of science or philosophy. The only plausible demonstration of their importance in relation to the creator is the fact that they have been used concretely in the composition of a piece of music.

In our articles concerning some of the above-mentioned creators, we have noted a series of inconsistencies in their purpose and procedures. In order to detect the heuristic principles of creation our method has been philological. We used the exegesis of texts, articles and quotations from composers, revealing misunderstandings and ambiguities in their discourses or in the way they use the theories they mobilize. In this way, we try to highlight the fact that it is not the sacrosanct Truth that is at work in their discourse, but the strength of their conviction. In all the cases analysed, the reifying and apparently objective purpose at some point collides with the decisions made by the creator, which cannot be justified by any demonstrable reason or causal relationship. By this we mean that the creators' statements about their music sooner or later fall into contradiction, since the entire theoretical edifice of what they state is based (fortunately) on irrational postulates, which may be desire, necessity, unconscious impulse or even taste. In any case, these are eminently subjective elements that animate the entire creative process, from the work at its origin to its complete realization. Thus, imagination is, before any determination, a magma that adopts the most adequate forms for the realization of a project: theories, daydreams, intuitions or reasoning.

On the other hand, creators are categorically convinced of what they claim, and it is with the strength of their conviction that they justify their claims. In the particular case of post-war avant-garde composers, what they claim is linked to the need they feel to break with the past, the source of all evils. They want to deny historical continuity,

the legacy of materials. In order to achieve the break, the *tabula rasa*, they claim the absolute value of their materials; they assert that their music has an experimental value independent of the expression that gives it life. And that the theory they mobilize assures the objective value of the work, setting aside the subjective, changing, and ultimately perennial figure of the creative subject.

In analysing these assertions, our critical reflections have tried to reveal the subjective that is hidden or concealed in their approaches. Our concern has been to demonstrate by *reductio ad absurdum* the lack of consequence of their assertions in relation to the processes of musical creation they experience. But the paradigm of the creator does not collapse for lack of logical consistency, quite the contrary: inconsistency and contradiction are the real fuels of creators if, as Aristotle says, the principle of art is not in the work but in the creator who shapes it. The contradictions that we find in the discourses of these artists would certainly lead us to question the value of their work, if we were to consider coherence as a necessary principle of their discourse. What a composer's asserts does not necessarily have to be true, it is enough that his discourse be plausible, in order to serve pragmatically the updated interpretation he gives of facts. This is how Musical Heuristics work.

PEDAGOGICAL APPLICATIONS

The main lines explained around the fictions are found in the realization of various pedagogical strategies that give meaning to the creative activity. Like all heuristic activity, neither true nor false, pedagogy must simply be effective in order to achieve the proposed goals. The pedagogies involved in creative music education share a common programme that stimulates, proposes and supervises the elaboration of the works; they are the result of musical heuristics in action. I will try to explain this programme, outlining its ins and outs and the kinds of problems it faces in music education.

Here is its content reduced to four basic points:

- Consideration of music as a complexity that cannot be reduced to simple terms.
- Ownership of the learning process
- Design of an improvisation methodology applied to the development of the various creative proposals
- Use of a progressive rating that can account for variation in materials and proposed behaviours.

Consideration of Music: A Complexity Impossible to Reduce to Simple Terms

Music heuristics starts from the observation that music is not a singular phenomenon that occurs in space and time, but the result of several interactions between various superimposed phenomena. 1) The interaction that occurs between the acoustic source, the propagation medium, the place where the performance takes place and the psycho-acoustics of perception. 2) The posed interaction between composers, performers, copyists, conductors, luthiers, sound technicians, acoustic engineers, audience, teachers, students and any other person, element, technical parameter or variable factor intervening in the musical process. 3) The interaction produced between the different historical periods and nowadays - for example, the one with which the interpreter of Renaissance music is confronted, to mention only this one - which is reduced to the question of whether historical reconstruction is a constitutive, or simply external, principle of interpretation. 4) The interaction between reality and fiction, between demonstrable truth and plausibility: as has already been said, fiction can function in relation to the construction of music as a teleological horizon, or explicitly deny this organization, attributing another form of will to compositional realization, without temporal determinations. In both cases, from the original fiction emerge real consequences, identifiable during the realization. This extreme complexity of music cannot be simplified or explained in terms of unitary causality. If music is treated as a unitary phenomenon, it becomes a metalinguistic object and loses its real value as an event.

It becomes necessary to understand that this complexity, as has already been said, is fundamentally holistic, i.e. the musical whole is always more than the sum of its parts. Thus pitch, rhythm, dynamics, timbre, character, tempo, etc., are not isolable parameters that add up, but their relationship constitutes interactions that fuse to produce the music we hear. If we wish to preserve the fluid and event-driven nature of the music, these parameters must be presented with the understanding that they form a whole. For the same reasons, the learning of solfège should not be separated from the works, and this applies to all theoretical subjects in music. Thus harmony, counterpoint, fugue, should be taught, as is the case with instrumentation and orchestra, always in relation to an example of living music and not exclusively on the basis of theoretical models.

The complexity of music considered as the effect of multiple interactions can be interpreted in the terms of Edgar Morin's⁴⁶ philosophy of reliance based on its three major principles: the dialogic, the retraction/recursion, and the hologrammatic principle.

Dialogic

A plurality of opposites can be maintained. Within a whole, two or more terms can be complementary and antagonistic at the same time. Thus, there is underlying dialogic between different elements when they are opposites and we need all of them to describe a certain situation, or to solve a specific problem. These principles can remain contradictory and maintain their control; they do not need to reach a synthesis. This is particularly relevant in music, where different conflicting forces act as a dynamic, creative source of actions and behaviours that will be assimilated in the work. The notion of dialogic in music therefore refers to the maintenance of these forces that remain in struggle without achieving synthesis. Thus the work of art can be explained in terms of categories in conflict that find a moment of balance in their perpetual face-to-face encounters.

As far as music education is concerned, dialogue opens the way to understanding music from cultures different from our own, allowing us to understand our differences not as a problem or as a source of segregation and discrimination, but as a gift from this diverse world that we cannot understand in its entirety. A synthesis in this cultural diversity makes it possible to justify any ideology by arbitrarily setting aside everything that is not like us. We should stop thinking of music in terms of simple causality or dialectics that suits us well to maintain our prejudices and, moreover, reassures us by creating an illusion of objectivity. In the field of history in general and music history in particular these simplifications have proved to be very dangerous. For example, it is obvious that the reason why some intervals of Maghreb music continue to sound foreign to the ears of the public is that they were banned from Western liturgical music in the early Middle Ages. How can we explain, in this ideologically charged context, the “objective”, psycho-acoustic notion of dissonance? Moreover, how, and in the name of what alleged superiority has our

⁴⁶ Edgar MORIN, “From the Concept of System to the Paradigm of Complexity”, translated by Sean Kelly, online in <https://manoftheword.files.wordpress.com/2013/07/morin-paradigm-of-complexity.pdf>

culture arrogated to itself the right to justify such impositions? It is high time we recognise that most of our so-called “truths” about art and music are in fact the expression of our prejudices. As far as musical education is concerned, we should accept once and for all that music is not measured only by the objective existence of the media, but that it manifests itself as a presence between sounds and silences, as a dynamic between sound sources and emotions. This “in-between” nature makes it to a large extent - and to the great despair of musicology - ineffable, impossible to grasp in its totality through discourse. Language itself is responsible for this difficulty because of the way it works. In fact, as the Stoic philosophers had already understood, language signifies with instantaneous cuts in temporality, transforming an infinite process into a finite and limited number of concepts; but, at the same time, it has difficulty in defining and specifying how the relationships between these concepts occur. This makes Agamben, in his interpretation of Plato's seventh letter known as *Philosophic Digression*, affirm:

*“Language (our language) is necessarily presupposing and objectifying. By its advent, it decomposes the very thing that is revealed in it and in it alone, into a being about which one speaks, and a poion, a quality, a determination that is said of it. He supposes and hides what he brings to light in the very act by which he brings it to light”.*⁴⁷

To teach music we should in turn learn to operate with relationships that cannot be measured in terms of simple causality. Dialogic is an adequate tool to do this because it emphasizes the relational to the detriment of the conceptual. It prevents us from considering music as a dialectical process in which contradictions must necessarily be resolved in order to arrive at a synthesis.

Feedback/Recursion

Feedback is the action in return of some effect, on the cause that gave birth to it. A good example of feedback is given by listening to music

⁴⁷ «Le langage (notre langage) est nécessairement pré-supposant et objectivant. Par son avènement, il décompose la chose même qui se révèle en lui et en lui seulement, en un être *sur lequel on parle*, et un *poion*, une qualité, une détermination *qu'on dit de lui*. Il suppose et cache ce qu'il amène à la lumière dans l'acte même par lequel il le porte à la lumière. »

Giorgio AGAMBEN, « La chose même », in *La puissance de la Pensée, essais et conférences*, translated from Italian to French by Joël Gayraud et Martin Rueff, éditions Payot & Rivages, Paris, 2006 for the French edition, p. 16.

related to immediate memory. The listener not only listens to the present sound events, but is obliged to continually re-interpret the present in relation to what he has heard before, thus envisaging a hypothesis of musical form and imagining from the elements at his disposal what the continuation of the work might be.

The feedback that allows cause and effect to change in turn is called recursion. There is recursion, for example, in the question of who was first: the chicken or the egg.

In musical composition, there is recursion between inner hearing and improvisation, which can be considered in turn as cause or effect of musical creation. There is also a recursion between inner listening and musical writing.

Hologrammatic Principle

In the holistic description of a phenomenon, the parts cannot be considered without relation to the whole and vice versa. The hologrammatic principle goes even further: both, the part and the whole, are integrated into each other; they contain each other reciprocally. In music, this principle establishes an organic coordination between the micro- and macro-form. Thus, in the choice of material – even the least significant one –, the overall form of the piece is already inscribed, like a sort of anagram drawn on it. This should be able to clarify, against the opinion of much experimental music, why the material does not count by its individual or absolute value, but by its heuristic value of temporal potentiality, of potential development on which the realisation of the work depends.

The musical form is thus an evidence, not an intellectual speculation: if in the part is already inscribed the whole, it polarizes the ideas, images, actions and behaviours to come by producing an energetic breath that generates the form.

The three principles mentioned, the dialogical, the feedback/recursion and the hologrammatic principle propose an indispensable dynamic for understanding the multiple interplay of interactions that are set in motion by music. This play is a living and fluid process, which can neither be reduced nor supplanted by discursive interpretation.

Appropriation of the Learning Process

The notion of the irreducible complexity of music must also be applied to its learning process. In terms of science, before the 20th century there was traditionally a methodology that separated the object to be studied from the student subject. In musical composition, this is impossible because the subject interacts with the object he is producing,

mobilized by a global quest for meaning in relation to the activity he is carrying out. This search for meaning leads composers to be self-taught for the most part or, without being self-taught, to appropriate and incorporate in a personal way the teachings received in order to constitute their own language.

The subject/object methodological ambiguity generates two different types of students; those who find the creative meaning of what they make by following the indications given by the teacher, but also those who cannot discover and feel it without radically deviating from the proposals, following alternative paths that they themselves propose. The teacher must be aware of this difference in order to be able to work with both of them in an optimal way.

Consequently, musical heuristics proposes that the student should become aware of his or her degree and particular modality of participation, a self-knowledge that will enable him or her to be more tolerant of his or her own creative process and that of others, considering the approach that he or she must take in order to make his or her creative project a success.

Design of an Improvisational Methodology for the Development of Creative Proposals

Improvisation is an excellent tool for developing compositional ideas, in a dynamic passage between the virtual, the conceptual and the abstract on the one hand, and the living, realized and concrete experience on the other. Improvisation can be individual or collective, instrumental and/or vocal.

For its concrete application, I strongly advise educators to stimulate students by providing them with a good number of creative proposals: for example, I suggest reconstructing a work, sounding a cartoon, imitating the environment, working on a repertoire of actions and others, which will serve as a starting point for individual or collective projects. These heuristic propositions are of interest because they constitute pretexts to give rise to musical situations. They will serve to frame the work by providing a permanent conceptual reference that will assist students in the development of their creative process.

The propositions function as vehicles that may, or may not, lead students to music. Whether they work or not depends directly on their capacity – updated according to the project in question – to carry the ideas, images, visualizations, phantasmagorias that the students project into and through them. For this reason, they are not important in themselves, but

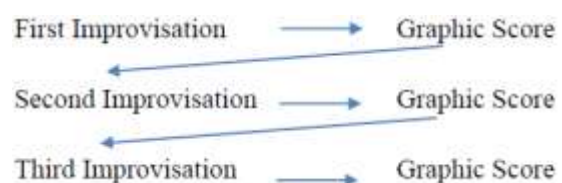
have a potential heuristic value of realisation; the same proposal may be valid for one group of students, and inoperative for another.

The fact that one of the creative proposals makes sense for the one who implements it means not only intellectual acceptance, but also incorporation and progressive assimilation on the part of the individual or group. This is a consequence that emerges from improvisation, where a natural process of selection through implementation and repetition defines and frames the actions, behaviours and materials used, leaving unsubstantial ideas and actions aside.

Furthermore, heuristic proposals should not focus exclusively on music. Thus, transdisciplinarity can naturally arise from projects that concern music and theatre, music and literature, etc.

Use of an Evolutionary Notation Likely to Account for the Variation of the Materials and Behaviours Proposed.

In order to put a creative proposal into practice, the successive realization of improvisations will each time bring new information about the materials, actions and behaviours concerned. At the very beginning of the improvisations the ideas are imprecise, and the actions to be carried out schematically; at the end of the creative process, the musical events will evolve, their outline will become precise and their profile defined and specific. This effect of precision of the events leaves traces on the symbolic notation, which must be able to account for the lesser or greater precision of the events represented, by allowing a "tomographic" cut of the degree of event determination corresponding to an instant. Since from each new improvisation the sequence of events will become clearer and more precise, the notation will express the comparative difference between the present moment and the one that follows it. As a consequence of the creative process, an evolving writing is set up, which adapts itself in an optimal way to the description of the said process. A feedback between improvisation and writing occurs here:



This dynamic of work in the form of an everchanging loop is repeated until the creative process is completed (work, play, unwritten improvisation, etc.).

CONCLUSION

*“In this universal reign of the word, art is itself considered as a language that mediatizes appearances. How does philosophy state the meaning of the language of art? Since there are no meta-discourses, but rather discourses that respond to each other, presupposing and proposing the same context, the ultimate determination belongs to the language that is capable of reflecting on its own signs, that is to say to philosophy. But in reality, there are not two discourses, because art is precisely not a discourse. Syntactic connections annihilate the poetic. Art is no more than an immediate reality that needs to be mediatized to have a communicable meaning. Art is not made of signs but of forms; and if we call it a language, the meaning of the word has to be reworked.”*⁴⁸

By stressing the imperative need for a different way of grasping music than that proposed by traditional approaches, Music Heuristics has a reserved place in the fields of musicology and creative music education. Because of the complexity of the latter, which can only benefit from a methodology based on the subject/object separation when they remain confined to the description of the neutral level – an illusion of objectivity which gives them a certain appearance of science – musicology and creative music education have to face approaches in which the ambiguity of the boundaries between subject

and object is most often manifested. And with good reason: the contradictions, back and forth, hesitations, contradictions and the whole range of imprecisions inherent in the true creative personality prevent linear description, and blur the lines when it comes to defining the creative subject. But these must be seriously taken into account if we are to truly capture creative processes. For this reason, the discourse on music or on learning about musical creativity must be something much richer than the traditional globalizing dialectics, categorical systems, descriptions of moments of rehearsal or hypothetical cause-and-effect relationships. All these approaches are external to the musical itself, and leave aside the understanding of the contradictions of the creative spirit, the fictions that convey its convictions, the emergences of the realization, the interactions, the dialogics implemented.

Let us return, for example, to the generative process of the work. It presents itself in all its liveliness as a dynamic of affirmation and negation without which both the artist and the work would be unthinkable, immediately bypassing any logic of identity. Moreover, it is the fiction produced by the feeling of union and separation with the work that gives meaning to the composer's work. The univocal, signitive and discontinuous representation of the work's salient moments cannot replace the dynamic of this back and forth of artistic identification, which is deeply symbolic, rich and diffuse in its meaning, polysemic and continuous.

Combined with the musicological approach, Musical Heuristics allows a complex approach to music from two parallel apprehensions, irreducibly different but totally complementary.

For musicological hermeneutics on the one hand, subject/object dissociation is possible; the feeling produced by the work analysed in us is dissociable from its grasp. This mediation is at the origin of the application, unquestionable in itself, of the reflection, of observation and analysis of the work. For Musical Heuristics on the other hand, the dissociation between grasping the work and feeling it is impossible, because grasping and feeling are one and the same thing.

It is by taking this double approach into account that we will be closer to unveiling the musical in all its meaning, unique and profound.

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⁴⁸ « Dans ce règne universel de la parole, l'art est lui-même considéré comme un langage qui médiatise les apparences. Comment la philosophie énonce-t-elle le sens du langage de l'art ? Comme il n'y a pas de méta-discours, mais des discours qui se répondent, présupposant et proposant un même contexte, la détermination ultime appartient au langage qui est capable de réfléchir sur ses propres signes, c'est à dire à la philosophie. Mais en réalité il n'y a pas deux discours, car l'art n'est justement pas un discours. Les liaisons syntactiques anéantissent la poétique. Pas d'avantage l'art n'est une réalité, immédiate, qui aurait besoin d'être médiatisée pour avoir une signification communicable. L'art n'est pas fait de signes mais de formes ; et si nous l'appelons un langage, il faut remanier le sens de la parole. La différence entre signe et forme se résume dans cette formule d'Henri Focillon (*La Vie des formes*, Paris, PUF, 1955, p. 10) : “Le signe signifie, la forme se signifie”. Le signe n'est pas de l'ordre de ce qu'il signifie. Il en va tout autrement de la forme artistique, parce qu'esthétique. Sa signification est une avec son apparaître. Et cela vaut pour l'œuvre d'art dans son unité. »

Henri MALDINEY, « Le dévoilement de la dimension esthétique dans la phénoménologie d'Erwin Straus », in *Regard, Parole, Espace*, Les éditions du Cerf, Paris, 2012, p. 189.

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