GAS Journal of Arts Humanities and Social Sciences (GASJAHSS)

Volume 2, Issue 11, 2024 Journal Homepage: https://gaspublishers.com/gasjahss/ ISSN: 3048-5002

Creative Complexity Shedding Light on Creative Musical Processes

Ricardo Mandolini

Professor Emeritus at the University of Lille, France

Received: 11.11.2024 | **Accepted:** 13.11.2024 | **Published:** 15.11.2024

***Corresponding Author:** Ricardo Mandolini

DOI: 10.5281/zenodo.14166917

Abstract **Original Research Article**

This work completes the content of a recent publication[1] by insisting on and deepening essential aspects of the creative process that had been left in abeyance. In this paper we start analysing Erwin Straus' dichotomous thinking, characterising his “gnosic” (knowing) and “pathic” (feeling) moments and determining their differences: feeling is rooted in the movement of attraction or repulsion that the creator experiences with his whole being, while knowing is the result of a conceptual elaboration mediated by language. Nowhere in his work does Straus determine the existence of a passage between these two moments, which allows us to formulate the hypothesis that, for him, we are dealing with two irreducible categories. The latter being impossible to understand for an artist, who normally works on both levels to realise his work, we set out in search of this passage between knowing and feeling by interpreting Straus' thought in the light of phenomenology and neuroscience; we hypothesised that feeling, the pathic moment, constitutes what we nowadays call embodied knowledge or enaction. This point of view allowed us to draw on Merleau-Ponty's and Varela's conception of circularity between embodied knowledge and conceptual knowledge, which brought us very close to the question of the passage between feeling and knowing. But an additional problem was apparent in the representation of this circularity: according to Straus, feeling and knowing would be in two different ontological categories, since one is rooted in movement and action - in intentionality, Husserl would say - and the other is not. This made it impossible to imagine a mere circular movement between the two, since, if this were the case, for feeling and knowing to communicate they would have to be located on the same ontological level. This is where we articulate Deleuze's topological representation, allowing circularity and at the same time making it possible for feeling and knowing to keep their specific differences; separate categories, but at the same time united, the Möbius strip allows us to visualise the present virtuality of knowing (feeling), and, vice versa, the present virtuality of feeling (knowing).

The dynamic between the two moments of Straus was thus defined, but not the *raison d'être*, the fuel that puts this dynamic of passage into operation. Our hypothesis is that the circularity of knowing/feeling is produced by what Jean-Marie Schaeffer calls mimetic immersion, a term that updates a discovery made by Plato in *The Republic* three centuries before Christ. It is the embodiment of materials and situations experienced by the subject when immersion occurs, and their separation/ objectification when mimetic immersion is absent.

Keywords: Aesthetics, Psychology, Heuristics, Complexity, Musical Creation

The Gnosic and Pathic Moments in the Thought of Erwin Straus

Erwin Straus (1891 - 1975) was a German psychologist exiled in the United States during the Second World War. His work is an important contribution to psychopathology and clinical psychiatry, exerting a profound influence on the characterisation of the pathological event as an experiential phenomenon. His numerous publications include research on suggestion, phobias, tics, hallucinations and obsessions. A synthesis of his conception can be found in the 1935 work *vom Sinn der Sinne* (*from the Sense of Sense*), where he highlights the distortion traditionally attributed to subjectivism and the depersonalisation of lived experience. In this major work, Straus rehabilitates the feeling of the subject by categorically opposing the classical reifications of the psychology of his time. It is on this work that we will base our research.

According to Straus, every subject presents on the one hand a conceptual idea mediated and transmitted by language, which is the origin of what we call knowledge or conceptual knowledge. This capacity to represent situations and things is

based on a rational organisation of causal associations. On the other hand, Straus highlights the pre-conceptual intuition of the subject, which can be mobilised by art or by any other situation in which feeling is mobilised. In feeling we grasp situations and things as a whole, as a globality instead of reducing it to fractured representations.

The originality of this view is that it considers feeling as a concept rooted in bodily movement. Thus, just as we move from one point to another, feeling manifests itself as a kind of movement, an impulse to join or separate, a kind of attraction or repulsion towards people, environments and things.

"The feeling being lives in the world and is destined, as part of it, to unite with or separate from certain of its parts. Every act of separation or union is already, in the order of immanence, a mobile being, or rather a being-in-movement. Consequently, movement and sensation are linked to each other by an intimate relation that must be described and understood. The theory of sensation and the theory of movement cannot be treated separately, because if we do so we also separate the processes of sensation from those of movement. Their relationship is interrupted and we must inevitably give up the attempt to re-establish it". [1]

When we feel we make our being inseparable from the knowledge that produces that feeling, whereas in knowing conceptual thought separates subject and object.

"Knowledge seeks to determine things as they are in themselves."[2]

It is by seeking this determination that science progresses: between two or more models describing a situation in the real world, the representation that turns out to be simpler and more adequate is considered better than the others. Therein lies progress. [3] Knowledge seeks a truth subject to demonstration; validation of knowledge cannot leave aside experimental verification. But as far as feeling is concerned, it is neither progress nor demonstration that is at stake. In the case of the creator, he has nothing to prove to anyone. His work needs no objective verification. However, this does not mean that he renounces universality in what he does; it is another kind of universality, which is based neither on concepts nor on definitions. Kant calls this intersubjectivity, i.e. that which allows the possibility of agreement between people without the need for a definition or a concept.[4]

Sense and feeling

"With perceiving, which is the first level of objectification, we have already left feeling"[5]

"Like all knowledge, perception needs a general objective medium in which to develop. The world of perception is a world of things with fixed and changing properties in an objective and universal space and time". [6]

Gestalt psychology experimentally confirmed the hypothesis that perception is the first level of objectification, i.e. of knowledge. Kant's postulate from the Critique of Pure Reason that perceptions of sensibility do not produce syntheses is thus called into question. Perception, on the contrary, determines a kind of prefiguration of the concept, the form, as Ehrenfels claimed in 1890. According to him, form is a holistic totality different from the sum of its parts, which allows, for example, its transposition. This means that a melody cannot be considered a simple summation of pitches, since transposition

[1] « 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. »
STRAUS, Erwin, *Du sens des sens – Contribution à l'étude des fondements de la psychologie.* French translation by G. Thines and J.-P.Legrand, Paris, 2000 for the translation, p. 235.

[2] «La connaissance cherche à déterminer les choses telles qu'elles sont en elles-mêmes ».
Ibid., p. 372.

[3] A classic example: to explain the observation of the retrograde motion of the planets without taking into account the translation of the Earth around the sun, the ancient astronomy of the Greeks (Aristotle, Ptolemy) required the elaboration of the highly complex theory of epicycles. The Copernican revolution first, by introducing the displacements of the earth, and then Kepler's elliptical orbital description, only simplified what was terribly complicated to explain.

[4] That is why the second definition of Beauty in the *Critique of Judgement* states:
„Schön ist das, was ohne Begriff allgemein gefällt" ("What is beautiful is that which is universally liked without concept")
KANT, Immanuel, *Kritik der Urteilskraft*, (*Critique of Judgement*), Suhrkamp Taschenbuch Wissenschaft, 14. Auflage, 1996, p. 134.

[5] « Avec le percevoir, qui est le premier niveau de l'objectivation, nous sommes déjà sortis du Sentir.»
MALDINEY, Henri, « Le dévoilement de la dimension esthétique dans la phénoménologie d'Erwin Straus » ("The Discovery of the Aesthetic Dimension in the Phenomenology of Erwin Straus") in *Regard, Parole, Espace*. Paris : Les Éditions du Cerf, 2012, p. 189.

[6] « Comme toute connaissance, la perception requiert un medium objectif général. Le monde de la perception est un monde de choses avec de propriétés fixes et changeantes dans un espace et dans un temps objectif et universel. »
STRAUS, Erwin, *op.cit*., p. 376.

does not alter its identity.

"I assert that the cognitive operations called 'thinking', far from being the prerogative of mental processes occurring at a much higher level and beyond perception, are part of the fundamental ingredients of perception itself. I am referring to operations that actively explore, select, grasp the essentials, simplify, abstract, analyse and synthesise, complete, readjust, compare, resolve difficulties, as well as combine, order, place in context. These operations are not part of a single mental function, but constitute the way the human and animal mind processes cognitive material, at whatever level. There is no fundamental difference in this respect between what happens when a person observes the world directly and when he 'thinks' about it with his eyes closed. [...] It would seem that there is no thought process that could not be found at work - at least in principle - within perception."[7]

According to Gestalt psychologists, form is already a kind of 'proto-concept' and functions within knowledge.
But let us return to the example of melody. Let us suppose that listening to it awakens a strong emotion in us. It is at this moment that hearing ceases to be the only sensory channel in play, because through our feeling our whole body manifests itself. It expresses itself through an indefinite globality of associations, of fantasies that interact with spontaneous physical reactions such as goose bumps, shivering, a rapid heartbeat, a rise in body temperature, and some tears perhaps. We vibrate with this melody through our whole being. Our whole body hears, sees, touches, associates, evokes, is moved, reacts, etc. We have left behind the mere sense of hearing to rediscover the sentient totality that we are and that the melody has set in motion.

Two Different Ontological Categories?

Feeling would produce a pathic moment of encounter where all the psychic activity (thoughts, images and associations) together with all the bodily activity of the subject would be polarised through a dynamic of attraction or repulsion with respect to the object. This dynamic manifests itself in an attitude of incorporation produced by the feeling subject towards the person or thing felt. Here the boundaries between subject and object are blurred or disappear.
Knowing and perceiving, for their part, configure in turn the gnostic moment in which the observation of the subject ensures objectivity, giving rise to universal communication. The subject and the object are perfectly delimited and there is no passage between them. It is a relationship with the world where the involvement of the subject is assertive and subject to verification, through the mediation of language.
Missing any proposition of passage between these two categories in Straus's work, we postulate that these two moments constitute for him irreducible categories; but this irreducibility is unacceptable for us, who carry out artistic practice on a daily basis. How can we separate feeling from knowing in the process of gestation of a work, when what happens in fact is that both attitudes complement each other? With feeling alone, the work could never escape the prison of pure immanence; it would remain an intuition, a fleeting idea. With knowing alone, the work would be meaningless, since the work does not acquire sense in the demonstration of that which it affirms. That is to say that the artistic endeavour shows us how, starting from a pure feeling, the work gradually develops until it differentiates itself in its sound materials, in its instrumentation, in its diverse forms and characters, in the definition of each of the elements that compose it. In order to understand it and make it intelligible, it is absolutely necessary for us to find an articulation that serves as a bridge, a passageway between the categories enunciated by Straus as the pathic and gnosic moments.

Feeling and Embodied Knowledge

As we have already said, a dynamic form of knowledge emerges from feeling, which comes from the manifestation of the body itself. Years after the publication of *vom Sinn der Sinne*, first the Phenomenology and then the Cognitive sciences would focus their respective investigations on the knowledge that originates in corporeality: this is the realm of what we call enaction, embodied cognition or embodied knowledge. Here, as in the example of the composer, what is known is what the body

[7] « Je prétends que les opérations cognitives désignées par le vocable "pensée", loin d'être l'apanage du processus mentaux intervenant à un niveau bien au-dessus et au-delà de la perception, constituent les ingrédients fondamentaux de la perception elle-même. Je me réfère ici à des opérations qui consistent à explorer activement, à sélectionner, à appréhender ce qui est essentiel, à simplifier, à abstraire, à analyser et à synthétiser, à compléter, à réajuster, à comparer, à résoudre des difficultés, de même qu'à combiner, à trier, à placer dans un contexte. Ces opérations ne sont pas la prérrogative d'une seule et unique fonction mentale ; elles constituent la manière dont l'esprit de l'homme et celui de l'animal traitent le matériau cognitif, à quelque niveau que ce soit. Il n'y a pas à cet égard de différence fondamentale entre ce qui se passe quand une personne regarde le monde directement et quand elle "pense" les yeux fermés. […] Il semble qu'il n'y a pas de processus de pensée que l'on ne puisse trouver à l'œuvre — en principe tout au moins — au sein de la perception. »
ARNHEIM, Rudolf, *La pensée visuelle*, French translation by Claude Noël et Marc
Le Cannu, Paris : Flammarion, 1976 for the translation, p. 21.

performs and feels; a globality that comes from corporeality itself, an enactive (in action) response to a world of which the subject is a part. It is a knowledge that is revealed, in the first place, in the immanence of the habitudes that are carried out "without thinking", in the automatic movements, in the displacement of the body as a global activity in which countless emergent agents collaborate.

"It is possible to know how to type without knowing how to indicate where the letters that make up the words are on the keyboard. To know how to type is not, therefore, to know the location of each letter on the keyboard, nor even to have acquired for each letter a conditioned reflex that it would trigger when it is presented to our sight. If habitus is neither a knowledge nor an automatism, what is it then? *It is a knowledge which* is *in the hands*, which is only given to corporeal effort and which cannot be translated by an objective designation".[8]

In all these situations, the subject as a corporeal presence creates his own place in the world. He must become comfortable with situations and things, familiarising himself with them until he inhabits them, until he makes them his own.

"The example of instrumentalists shows even better how habitus resides neither in thought nor in the objective body, but in the body as mediator of a world. We know that a practised organist is capable of using an organ he does not know, whose keyboards are more or less numerous, and whose controls for the stops are arranged differently from those of his usual instrument. He sits on a bench, operates the pedals and the register controls, measures the instrument with his body, incorporates directions and dimensions into himself, and settles into the organ as one settles into a house... Between the musical essence of the fragment as indicated in the score and the music that actually resounds around the organ, a relationship is established so directly that the organist's body and the instrument are nothing more than the path of this relationship. Henceforth the music exists by itself and it is because of it that everything else exists". [9]

Something similar happens with the music composition: the composer experiments with the musical materials of his future work until he finds the combination that is the prolongation of his being, feeling that this is the way. An identification takes place; the limits between him as a subject and his work in its nascent state become permeable, blurred. We will call this state a *global intuition of form*. It is an epiphany felt by the composer, qualitatively different from the experimentation previously carried out with his materials. During the experimentation phase, curiosity is the motive, thus giving rise to a playful moment where the creator analyses the results and compares them. Experimentation before, and then global intuition of form, coincide with Straus' categorical dichotomy of knowing and feeling. Once the global intuition of the form is revealed, the composer knows statistically how the work is going to be, even if he cannot define the details of the realisation. Thus the following statement takes on its full meaning:

"Our series - Schönberg's, Berg's and mine - are for the most part the result of an idea that relates to a total vision of the work."[10]

This pre-conceptual knowledge given by the feeling is the spontaneous manifestation of his bodily structure which, in a moment, recognises the globality of what he intuits and postpones the details for the complete realisation of the work.

[8] "Se puede saber dactilografiar sin saber indicar dónde se hallan, en el teclado, las letras que componen las palabras. Saber dactilografiar no es, pues, conocer la ubicación en el teclado de cada letra, ni siquiera haber adquirido para cada una un reflejo condicionado que ésta desencadenaría al presentarse ante nuestra vista. Si la habitud no es ni un conocimiento ni un automatismo, ¿qué será, pues? Se trata *de un saber que está en las manos*, que solamente se entrega al esfuerzo corpóreo y que no puede traducirse por una designación objetiva."
MERLEAU-PONTY, Maurice, *Fenomenología de la percepción*, Spanish translation by Jem Cabanes, Buenos Aires: Editorial Planeta – De Agostini, S.A., 1984 for the Spanish translation, p.161.

[9] "El ejemplo de los instrumentistas aún muestra mejor como la habitud no reside ni en el pensamiento ni en el cuerpo objetivo, sino en el cuerpo como mediador de un mundo. Sabemos que un organista ejercitado es capaz de servirse de un órgano que no conoce, cuyos teclados son más o menos numerosos, y cuyos controles para los registros están dispuestos de manera diferente de la de su instrumento habitual. Le basta una hora de trabajo para estar en condiciones de ejecutar su programa.[…].Se sienta en un banco, acciona los pedales y los controles de registro, mide el instrumento con su cuerpo, incorpora a sí direcciones y dimensiones, *se instala en el órgano como quien se instala en una casa*.[…] Entre la esencia musical del fragmento tal como viene indicada en la partitura, y la música que efectivamente resuena entorno del órgano se establece una relación tan directa que el cuerpo del organista y el instrumento no son más que el lugar de paso de esta relación. En adelante la música existe por sí y es por ella que existe todo lo demás".
MERLEAU-PONTY, Maurice, *op. cit.*, p.162-163.

[10] « Nos séries — celles de Schönberg, de Berg et les miennes — sont la plupart du temps le résultat d'une idée qui est en relation avec une vision de l'œuvre conçue comme un tout. »
WEBERN, Anton, Lecture from 26.02.1932, in *Chemin vers la nouvelle musique (The Path to new music)* Paris: Editions Jean-Claude Lattès, French translation by Anne Servant, Didier Alluard et Cyril Huvé, 1980 for the translation, p. 138-139.

Corporeal Individuality Put Aside

Although embodied knowledge is obvious and indispensable as a manifestation of life itself - impossible to remove from the background of rational knowledge - the secular enthronement of reason and logic as the master keys of philosophical and scientific methodologies allowed the research subject as a corporeal entity to be totally ignored.

"Western science was founded on the idea that the experimental method, verification procedures and critical debate among scientists could arrive at a universe of objective facts, purged of all value judgements, presuppositions and subjective distortions. It postulated the possibility of observing and explaining a reality independent of the subject. Such a positivist elimination of the subject is certainly only a postulate and, as such, is unverifiable in its foundation; but this postulate corresponded to the rise and exceptional success of Western science up to the beginning of the 20th century". [11]

Already at the beginning of the 19th century, German literary romanticism born in Iena (Göethe, Schiller, Novalis, Hoffman, Hölderlin, Büchner) had begun to focus on the theme of the subject, in opposition to classicism and rationality, giving freedom to feeling and the spontaneity of the artist. The philosophy of the second half of the 19th century continued this trend, which vindicated the subject and his motivations against organising reason. First Schopenhauer and then Nietzsche opened the way to corporeal knowledge as part of knowledge itself.

"In reality, the meaning sought in the world [...] would be forever impossible to discover if the investigator were himself no more than a purely cognising subject (a winged angel's head deprived of a body). What really happens is that he himself is rooted in this world and inhabits it as an individual, that is to say that his knowing, conditional support of the whole world as representation, is transmitted to him through a body where the senses [...] are, for the understanding, the starting point of the intuition of the world".[12]

As we have said, conceptual knowledge starts from the original separation of the cognising subject and the pre-given reality as a postulate. This leads us to the conception of a world that is independent of the subject, and that pre-exists it. On the basis of this presupposition or postulate, the object of knowledge and the knowing subject are presented as two separate and distinct entities. [13]

Keeping the dualism inherent in philosophical idealism (remember the Cartesian dichotomy *Res cogitans - Res extensa*) this separation between the subject and the world turns out to be a heuristic fiction in the sense that Kant gave to this term.[14]

[11] « La science occidentale s'est fondée sur l'idée que la méthode expérimentale, les procédures de vérification, le débat critique entre scientifiques pouvaient atteindre un univers de faits objectifs, purgés de tous jugements de valeur, de tous présupposés et de toutes déformations subjectives. Elle a postulé la possibilité d'observer et d'expliquer une réalité indépendante du sujet. Une telle élimination positiviste du sujet n'est certes qu'un postulat et, à ce titre, elle est invérifiable dans son fondement ; mais ce postulat a correspondu à à l'essor et à la réussite exceptionnelle de la science occidentale jusqu'au début du siècle XX ».
MORIN, Edgar, *La méthode de la Méthode, le manuscrit perdu*, Paris : Actes Sud, 2024, p. 65.

[12] « En réalité, la signification recherchée du monde […] serait à jamais impossible à découvrir si le chercheur n'était lui-même rien de plus que le sujet purement connaissant (une tête d'ange ailée privée de corps). Or, lui-même a des racines dans ce monde et l'habite en tant qu'individu, c'est-à-dire que son connaître, support conditionnel de tout le monde comme représentation, lui est toutefois transmis par un corps dont les affections […] sont pour l'entendement, le point de départ de l'intuition du monde »
SCHOPENHAUER, Arthur, *Le monde comme volonté et représentation (The World as Will and Representation)*, French translation by Christian Sommer, Vincent Stanek y Marianne Dautrey. Notes by Vincent Stanek, Ugo Batini et Christian Sommer. Paris: Gallimard, 2009 for the translation, p. 243.

[13] The presupposition of the world as a pre-given, subject-independent entity was radically challenged by the Buddhist philosophy of the Madkyamika tradition in the 1st and 2nd centuries CE. In his Stanzas of the Middle Way the philosopher Nagarjuna (called by his acolytes 'the first diaphanous thinker of the human race') studied the foundations of sunya-ta (emptiness). As a conclusion to his investigations – his critical methodology consisted of systematically refuting the arguments of others – Nagarjuna asserts that neither the subject nor the real world exist separately, but are in a relationship of structural coupling and mutually signifying each other.
For more on this topic, see
https://pijamasurf.com/2020/01/nagarjuna_y_la_idea_de_la_vacuidad_la_idea_mas_radical_en_la_historia_de_la_humanidad/

[14] "The concepts of reason are, as I have said, mere ideas, and certainly have no object in any experience, but they do not therefore denote imaginary objects that are at the same time assumed to be possible. They are merely conceived problematically in order to found, in relation to them (as heuristic fictions), regulative principles of the systematic use of reason in the field of experience. If one departs from this, they are mere objects of thought whose possibility is not demonstrable, and which therefore cannot be taken as a basis for the explanation of real phenomena by means of a hypothesis".
„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 angenommene Gegenstände. Sie sind bloß problematisch gedacht, um, in Beziehung auf sie (als heuristiche 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

It is unprovable but useful: it has served pragmatically for the purpose of focusing with exclusivity and without apparent dispersion multiple directions of research. This is how Western science and technology were able to develop, turning their backs on all other considerations than the achievement of the proposed objectives, and sacrificing in the first place the corporeal figure of the research subject. This was possible on the assumption that the researcher did not contribute to the realisation of the object studied or investigated. Cases in which subject and object are confused, i.e. where it was not possible to determine the exact limits of one and the other, were relegated to the human sciences, philosophy or art.

Paradoxically, however, at the same time as the subject/object separation paradigm began to decline in the sciences, the split reappeared in the human sciences. This is structuralism, which, starting with linguistics (Ferdinand de Saussure, Roman Jakobson), and continuing with anthropology (Claude Levi-Strauss), psychoanalysis (Jacques Lacan), marxism (Louis Althusser) and other disciplines, proposes the interpretation of their respective domains on the basis of the supposed pre-existence of congenital and innate structures capable of controlling the historical, sociological and methodological development of these specialities, leaving aside individual cases. In all these disciplines, structuralism seemed to have taken the methodological presuppositions of research – presupposition of underlying structures as working hypotheses – as if they were ontological structures common to all men. Here Eco's critique seems decisive:

"The temptation to individualise homologous structures in different facts - and to consider them stable, 'objective' - is very strong (and all the more so when one moves from the field of all languages to that of all communication systems, and from this to that of all possible systems considered as communication systems). Reasoning moves, in an uncontrollable way, from 'as if' to 'if' and from 'if' to 'therefore'. In a way, it seems almost impossible to ask the researcher to go in search of constant structures, and at the same time to force him never to believe, not even for an instant, in the operative fiction he has chosen. At best, even if he starts with the greatest possible empiricism, he ends up convincing himself that he has discovered some precise structure of the human mind". [15]

Pierre Boulez's integral serialism of the 1950s is another example of structuralism applied to music:

"As the sociologist Levi-Strauss said about language itself, I remain convinced that in music *there is no opposition between form and content*, that there is no abstract on the one hand and concrete on the other. Form and content are of one and the same nature, susceptible of the same analysis". [16]

The series, which controlled all musical parameters, constituted the basic structure from which the musical work was generated, starting from successive parametric superimpositions. The aim of the series was

"to link [...] rhythmic structures to serial structures by means of common organisations that also include the other characteristics of sound: intensity, attack mode, timbre." [17]

Right from the very beginning, individual considerations stalk the intended "objectivism" of the series: as Boulez himself acknowledges, a series of timbres is not comparable to a series of pitches and must be treated separately.

"It should be pointed out that these permutations are not obtained automatically, but are chosen for the special qualities they possess, given that the starting point of these investigations, and the objective they set themselves, is above

die daher auch nicht der Erklärung wirklicher Erscheinungen durch eine Hypothese zum Grunde gelegt werden können."
KANT, Immanuel, *Kritik der reinen Vernunft* (*Critique of Pure Reason*) Hamburg: Felix Meiner Editions, 1976, p. 703.

[15] "[…] La tentación de individualizar estructuras homólogas en hechos diversos – y considerarlas estables, "objetivas"– es muy fuerte (y más cuando se pasa del campo de todas las lenguas al de todos los sistemas de comunicación, y de éste al de todos los sistemas posibles considerados como sistemas de comunicación). El razonamiento pasa, de una manera incontrolable, del "como si" al "si" y del "si" al "por lo tanto". En cierto modo parece casi imposible pedir al investigador que vaya en busca de estructuras constantes, y a la vez obligarle a que no crea *nunca*, ni por un instante, en la ficción operativa que ha elegido. En el mejor de los casos, aunque comience con el mayor empirismo posible, acaba por convencerse de que ha descubierto alguna estructura precisa de la mente humana".
ECO, Humberto, *La estructura ausente, introducción a la semiótica, (the Absent Structure, Introduction to Semiotics)* Spanish translation by Francisco Serra Cantarell. Barcelona: Editorial Lumen S.A., 4th. edition, 1989, p. 345/346.

[16] « Ainsi que l'affirme le sociologue Lévi-Strauss à propos du langage proprement dit, je demeure persuadé qu'*en* musique *il n'existe pas d'opposition entre forme et contenu*, qu'il n'y a pas d'un côté, de l'abstrait, de l'autre, du concret. Forme et contenu sont de même nature, justiciables de la même analyse. »
BOULEZ, Pierre, *Penser la musique aujourd'hui.* Paris *:* coll. Tel, Gallimard, 1963, p. 31.

[17] « lier […] les structures rythmiques aux structures sérielles, par des organisations communes, incluant également les autres caractéristiques du son : intensité, mode d'attaque, timbre. »
BOULEZ, Pierre, *Relevés d'apprenti*. Paris : Seuil, 1966, p. 152.

all the evidence of sound." [18]

Here we come up against a fundamental contradiction.
Let us recapitulate: Boulez applies combinatorics as the unifying principle of all musical parameters. But these are not homogeneous; some allow abstraction (pitches, timbres) and can therefore be constituted in series without difficulty, while others (timbre, intensities, articulations) are eminently factual and are elaborated on the basis of the composer's choice. This heterogeneity of musical parameters allows us to affirm that the principle of serial unification is unrealisable as a method: there are leaks between the two levels of musical construction considered as hermetic, the structure (the series) and the form (the work). Thus we understand integral serialism as a compositional heuristic, an operational fiction where Eco's critique of structuralism in general can be applied without qualms (see quote n° 16).

The circulation between feeling and knowing, the key to artistic creation

Returning now to the question of the supposed irreducibility between Straus' pathic and gnostic moments, we can interpose here the point of view of phenomenology and cognitive sciences:

"We argue, with Merleau-Ponty, that Western scientific culture requires us to see our bodies not only as physical structures but as lived and experiential structures, i.e. as 'external' and 'internal', as biological and phenomenological. It is obvious that the two aspects of corporeality are not opposed to each other, but that, on the contrary, we circulate continuously from one aspect to the other. Merleau-Ponty understood that we cannot understand this circulation without a detailed investigation of its fundamental axis, namely the embodiment of knowledge, cognition and experience. For Merleau-Ponty, then, as for us, corporeality has this double meaning: it encompasses the body as a lived experiential structure and the body as the context or realm of cognitive mechanisms". [19]

In the same vein, Morin describes the subject-object circularity in the following terms:

"There is only an object in relation to a subject (who observes, isolates, defines, thinks) and there is only subject in relation to an objective environment, which co-constitutes it in its own inner being, which allows it to exist, which allows it to recognise, define and think itself. Object and subject, each in their own right, are insufficient concepts. The idea of the pure object is a useful reification, not a correct representation of reality. [...] Thus, just as the notion of objectivity can only be subjective, the notion of subjectivity cannot only be objective; in other words, there is a circuit, an uninterrupted rotation between the two terms subject and object."[20]

The question of circularity brings us back to the question we asked earlier, where we questioned the fact that Straussian feeling and knowing were postulated as irreducible categories., Applied to the process of musical creation, the intuition, as we have already stated, has to be complemented by knowledge so that what originally constitutes a purely statistically determined feeling can be transformed into a defined repertoire of instruments, actions and principles.

Towards A Topological Representation

Keeping Straus' idea that the categories of knowing/perceiving and feeling are on two different ontological levels, the passage between the two cannot be represented as a perfect circular movement, which would place the categories on

[18] « Il est à noter que ces permutations ne sont pas automatiquement obtenues, mais qu'elles ont choisies pour les qualités spéciales qu'elles présentent, que le point de départ de ces recherches, et le but qu'elles se proposent, donc, est avant tout l'évidence sonore. »
BOULEZ Pierre., *Relevés d'apprenti, op.cit,* p. 45.

[19] "Sostenemos, con Merleau-Ponty, que la cultura científica occidental requiere que veamos nuestros cuerpos no sólo como estructuras físicas sino como estructuras vividas y experienciales, es decir como "externos" e "internos", como biológicos y fenomenológicos. *Es obvio que ambos aspectos de la corporalidad no se oponen, sino que, por el contrario, circulamos continuamente de un aspecto al otro.* Merleau-Ponty entendía que no podemos comprender esta circulación sin una investigación detallada de su eje fundamental, a saber, la corporeidad del conocimiento, la cognición y la experiencia. Para Merleau-Ponty, pues, al igual que para nosotros, corporalidad tiene este doble sentido: abarca el cuerpo como estructura experiencial vivida y el cuerpo como el contexto o ámbito de los mecanismos cognitivos".
VARELA Francisco, THOMPSON Evan y ROSCH Eleanor, *De cuerpo presente, Las ciencias cognitivas y la experiencia humana (Embodied Mind.Cognitive Science and Human Experience)* Spanish translation by Carlos Gardini. Barcelona: Gedisa Editorial, 1992, pgs. 18 y 19.

[20] « Il n'y a d'objet que par rapport à un sujet (qui observe, isole, définit, pense) et il n'y a de sujet que par rapport à un environnement objectif, qui le co-constitue dans son être interne même, qui lui permet d'exister, qui lui permet de se reconnaître, de se définir, de se penser. L'objet et le sujet, chacun livré à lui-même, son des concepts insuffisants. L'idée d'objet pur est une réification utile, non pas une représentation correcte du réel. […] Ainsi, de même que la notion d'objectivité ne peut être que subjective, la notion de subjectivité ne peut pas être qu'objective ; c'est-à-dire qu'il y a un circuit, une rotation ininterrompue entre les deux termes de sujet et objet […]. »
Edgar MORIN, *op.cit.*, p. 69 / 71.

the same level.
The transit we are looking for between categories must be able to allow the free movement from one category to the other, always keeping the difference of levels. For this, it is necessary that the model of representation introduce a topological circularity, given that

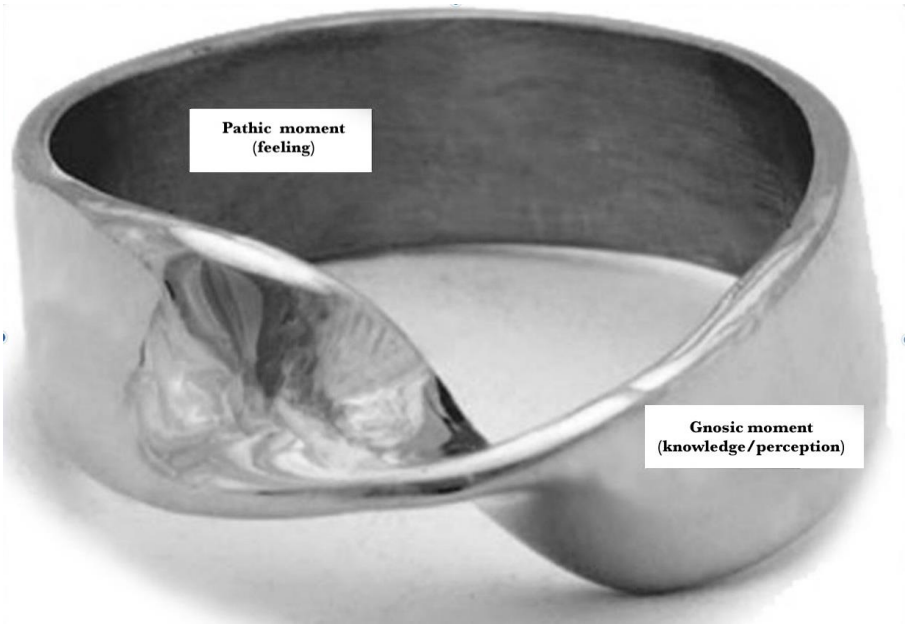
"[...] this is not a circle. It is rather the coexistence of two faces without thickness, such that we pass from one to the other following the length. Inseparably, meaning is the expressible or the expressed of the proposition, and the attribute of the state of things. It has a face towards things, and a face towards propositions". [21]

In the ontology Deleuze proposes, the mediating sense between things and propositions, and by extension, between all categories that are in ontological opposition, depends on a continuity between opposites that may be represented by the Möbius ring.

"Only by dividing the circle as we did with the Möbius ring, by unfolding it in all its length, by unscrewing it, does the dimension of meaning appear by itself and in its irreducibility, but also in its power of genesis [...]".[22]

In this way Deleuze's ontology articulates opposites while always maintaining their differences.

"By characterising the terms of dualisms as two sides of a surface that stand in a relation of 'reversible continuity", Deleuze (1990, p. 340) makes it clear that these sides do not deny each other, but are paradoxically related. Following the edge or border between them, the logic of meaning slides from one side to the other, operating and functioning in both, but without being a formal feature of either. This border lacks dimensionality of its own, but serves to unite the two divergent sides (or heterogeneous series) on the surface. As a border, it distinguishes the two sides and at the same time brings them into relation, like a membrane that connects the inner and outer spaces while separating them at the same time. [...]. Circulating ceaselessly between each distinct side, the Möbius ring creates the continuity of the reverse and of the right: the frontier branches the heterogeneous series, makes the same event into what is expressed by the proposition and the attribute of things."[23]



[21] « Mais là, ce n'est pas un cercle. C'est plutôt la coexistence de deux faces sans épaisseur, telle qu'on passe de l'une à l'autre en suivant la longueur. Inséparablement le sens est l 'exprimable ou l'exprimé de la proposition, et l'attribut d l'état de choses. Il trend une face vers les choses, une face vers les propositions. »
DELEUZE, Gilles, *Logique de sens*, Paris: Les éditions de Minuit, 1969, p. 34.

[22] « C'est seulement en fendant le cercle comme on a fait pour l'anneau de Möbius, en le dépliant dans toute sa longueur, en le détordant, que la dimension du sens apparaît pour elle-même et dans son irréductibilité, mais aussi dans son pouvoir de genèse […].
Ibid., p. 31-32.

[23] COCKAYNE D.G., RUEZ D., SECOR A.J., *Thinking space differently: Deleuze's Möbius topology for a theorisation of the encounter*. Trans. Br. Geogr. 2019;00:1–14, p. 6. https://doi.org/10.1111/tran.12311

It is thus clear how each dimension acts as the virtual side of the other. Where knowing/perceiving occurs as an actual situation, feeling constitutes its virtual counterpart, and vice versa. The two aspects are distinct and at the same time constitute an inseparable unity.

So far, we have determined a hypothesis of passage between categories presented as opposites. We must now ask ourselves what is the fuel that activates this dynamic, that is to say, what is the cause of the circularity.

Mimetic Immersion

(Socrates in dialogue with Adimantus)

"Tell me, you know the beginning of the Iliad by heart: Chryses prays to Agamemnon for the return of his daughter; Agamemnon is angry, and Chryses, who fails to obtain his request, invokes the gods against the Achaeans.

[...] You know, then, that up to these verses, [...] it is the Poet (Homer) 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 the impression, as far as possible, that it is no longer he who speaks, but this priest....

It is generally in this second style that the adventures in Ilion, or Ithaca, or in the whole Odyssey, took place. ''[24]

In this criticism contained in Plato's *Republic* about Homer's *Iliad*, a procedure peculiar to art, the mimetic immersion, which the artist and the audience experience in their relationship with the work, is manifest. Let us take a closer look at the passage: Plato relates how, at first, Homer speaks on behalf of Chryses, telling how he prostrates himself before Agamemnon to ask for his grace with the intention of having his daughter returned to him. There follows a moment of great emotion in the story, the consequence of Agamemnon's wrathful rejection and the humiliation of the supplicant father.

It is from this moment that the priest invokes the gods and curses the Achaeans for the affront he has to endure. It is now that Homer begins to speak in the first person, taking the place of Chryses; we see the path from the gnosic to the pathic moment: the mimetic immersion has taken place. In mimetic immersion there is, then, a first moment in which the distance between the model and its representation is maintained. We start explicitly from the metaphor: the model and its representation remain two autonomous entities with perfectly delimited boundaries. This is Straus' gnostic moment.

Then there is a trigger that will produce the immersion, which in this case is Homer's emotion in face of the injustice. It is this emotion that makes the mediation of representation disappear. The metaphorical distance is removed: the 'a as if it were b' vanishes leaving in its place 'a = b'. We have now suddenly abandoned the gnostic moment to enter into feeling, which blurs the boundaries between character and narrator and suddenly configures a unity of meaning.

In fact, Homer does not pretend to be Chryses. His rapport with the dramatic situation leads him *to be and, at the same time, not to be his character*, possessed by the emotion of his story. His own immersion in the fiction is the prerequisite for the audience's immersion to take place, for Homer is not simply the poet, but also the first receiver of his work. What happens to him happens to everyone. He is certainly a privileged reader, but he is also, in a sense, like everyone else. What Homer feels, above all, is the trigger for the feelings that the audience will experience when they read the Iliad.[25]

Here we glimpse the essence of artistic activity: to be able to move insensibly from a metaphor to a personification, from a conscious and voluntary sense of representation to an unconscious and involuntary sense of appropriation, from a gnostic moment where it is possible to separate subject and object (in the example, the storyteller and the story) to a pathic moment where both are melted.

This displacement of meaning finds its epistemological foundation in children's play across cultures. In a transfer of meaning, necessary for the development of their adult life, children learn to represent and invent situations, producing a split between what they are in reality and what they pretend to be through their play. In principle they are perfectly aware of the boundaries that separate the two worlds. But any emotional situation can trigger immersion and make them slip into the virtual world, where fiction becomes real. In other words, the effect that Plato discovered and criticised in Homer as an act of imitation that falsifies the truth, implies, for both children and adults, a moment where the boundaries of reality and fiction become blurred: feeling overlaps the two levels. What begins as a simulacrum or a representation can quickly become real -

[24] « (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* […].
Globalement, c'est dans ce second style que se sont développées les aventures ayant pour théâtre Ilion, ou Ithaque, l'Odyssée tout entière." »
PLATON, *La république*, French translation by Jacques Cazeaux, le Livre de Poche, Librairie Générale Française, 1995 for the translation, p. 105.

[25] In the *Poetics*, Aristotle will also highlight the effect of mimetic immersion on the audience, the so-called *catharsis*, the purgation of the passions: the feelings of fear, pity or anger that the representation of tragedy provokes.

what happens in children's games of wrestling and competition, for example.

Immersive and Non-Immersive Fictions

In relation to the psychic development of children, the English psychologist Donald Winnicott developed the theory of the *transitional object*.[26] This is an object that belongs neither to psychic reality nor to the reality of the world separately, but to both at the same time. The transitional object is a replacement figure that the child needs in order to move away from the original fusion with the mother and to gradually develop his or her adult personality. Winnicott carried out his research by distinguishing two different functions in transitional objects: (a) that of replacing the mother as a person, where the child distinguishes perfectly between the two and facilitates in the future the development of symbolic and representative thought; (b) that of replacing what the mother gives him, the feeling of security, the comfort of being in her arms, the pleasure of breastfeeding... With the transitional object the child plunges inside these pleasurable sensations and lets himself be possessed by them, thus slipping into a world of well-being inseparable from himself.

We affirm that Winnicott's theory is the epistemological basis of two types of fictions: a) non-immersive fictions, those in which the reference plays a metaphorical or allusive role, but in which it is always possible to have the limits of reality and fiction defined; and b) immersive fictions, in which the subject slips into a virtual world of meanings that will be superimposed on reality, and, although he can leave this world at any time, he feels, suffers, cries, laughs, behaves and acts according to the fictional world, always keeping a diffuse background of reality. These two modalities are not stable; there may be passages from one to the other, situations or objects that facilitate immersion - which we call with Jean-Marie Schaeffer 'immersion vectors' - and others that return the subject to the reality of the allusive and metaphorical representation. In non-immersive fictions, the feeling of self-criticism or the analysis of the situation prevents the dynamics of subject/object fusion (gnostic moment). The boundaries between subject and object are maintained. In immersive fictions, an identification takes place in which the subject and the object are one (the pathic moment); it is at first impossible to determine where one begins and where the other ends.

Application to Art

At the beginning of the creative process, we find a fusional identity between the artist and his work. The finished work, for its part, consummates its separation from the creator. Between these two moments there is an evolution of gradual distancing, which is neither pure external reality nor pure subjectivity, and which develops as the work is realised.

As in the development of children's personalities, the artist's individuation produces a movement between absolute identity and distancing. There is necessarily a gradual separation between the artist and his work, and to achieve this, creators do what children do with their play: they involuntarily and unconsciously experience a split in their personality. They often come to resent an external presence controlling the operations to be carried out; it is as if the work in gestation were controlling its own evolution, independently of them as creators.

The appropriation and internalisation of the materials with which the work will be made results in the appearance of a virtual reality, which, like children's games, overlaps and interacts with the outside world.

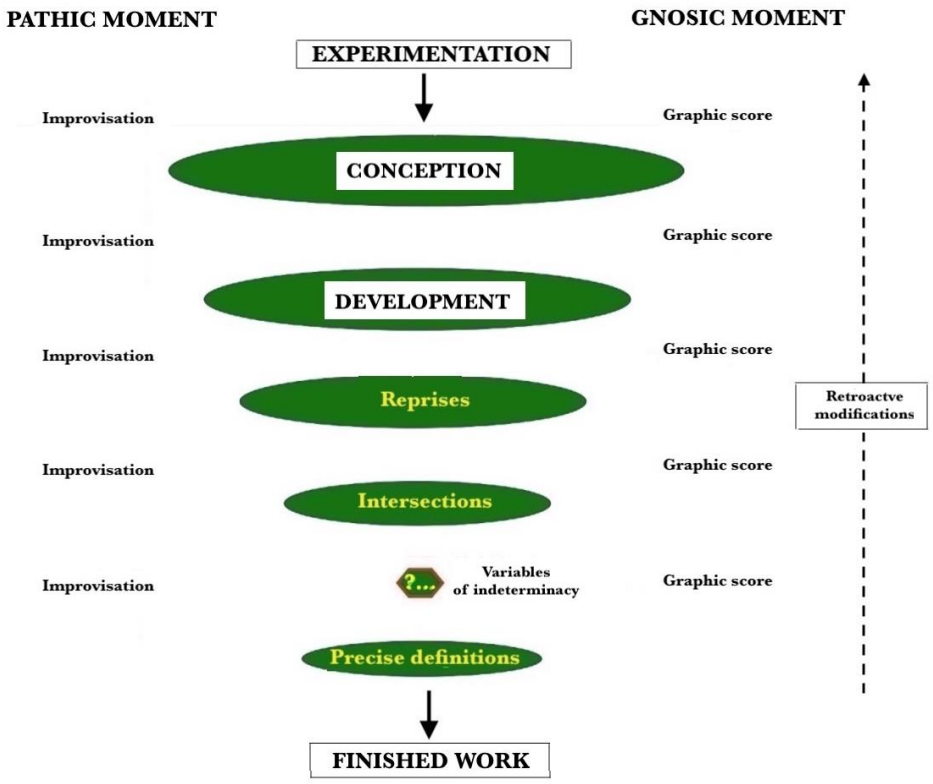
Application of the Developed Model to Musical Improvisation[27]

In a situation of improvisation, Straus' pathic and gnostic moments constitute the two poles of the work to be done. Knowledge is represented through an evolving semiotic, in which the information coming from the emergence of improvisation is added. This is an action, a feeling; improvisation is delineated as a path that makes us progress towards the determination of the events involved. The symbols also evolve until they crystallise in the final score of the work.

There is then a movement of circulation between improvisation and graphic presentation, which is exactly what our current research has just revealed: between improvisation and its symbols, the topological circularity between feeling and knowing which we have already postulated is produced.

[26] WINNICOTT, Donald, *Jeu et réalité*, (*Playing and Reality*) French translation by Claude Monod et Jean-Bertrand Pontalis, Paris : Gallimard, 1975 for the translation.

[27] In the second part of our article '"A musical composition based on improvisation", already mentioned (see quote n° 1) we give an example of the evolutionary development of an improvisation on the way to the composition of a work. It is important for the reader to consult the log of this improvisation, to which we refer.



This evolutionary diagram explains the different moments of musical improvisation in the process of composing a work.

At first, experimentation with the materials to be used in the improvisation takes place, until what the improvisers feel as the beginning is determined. The conception of the future work is produced as an epiphany, a magical encounter with the germ that will give rise to the piece. This is the moment of what we have called *the global intuition of the form*.

This is the starting point for the development of the improvisation work, including questions related to the repositioning of events, to the possible intersections between the thematic situations that arise and to the emergence of precise determinations of materials and actions. A separate place deserves what we can call the variables of indeterminacy, represented in the diagram by a question mark. It should be borne in mind that improvisation does not necessarily follow the diagram systematically: moreover, not all the thematic situations that emerge from the work evolve at the same time. It may happen that the work evolves into a game, and then the development will be the determination of its rules, (statistics or determined). Furthermore, the question of the musical symbolism used is open: it may happen that some passages continue to be described by means of graphic notation, while others may be written in traditional notation, depending on the nature of the ideas and the resulting actions.

It can be seen that the different levels proposed follow an order in the form of an inverted pyramid, which clearly indicates how the process of identification of the improvisers with their actions and materials delimits and defines the future result.

The diagram also indicates that there are retroactive modifications that can take place, without altering the regular unfolding of the work. This prevents the process from being considered as a hard dialectic, polarised in the result as a synthesis. [28]

The end of the process is the finished work, the score for the written works

or the statistical or deterministic mnemonic fixation for unwritten works.

CONCLUSION

The title of this article “Creative complexity” alludes to Edgar Morin's philosophy of complexity. Indeed, another way of arriving at the same conclusions regarding the circularity between Straus’s concepts of feeling and knowing that we have developed here would have been to analyse these two categories as entertaining a dialogic, that is to say, a difference that is never resolved but which contributes to producing, and explaining,

[28] On the critique of the dialectics of composition, see MANDOLINI, Ricardo, ‘Adorno and avant-garde music’. International Journal of Multidisciplinary Research and Analysis (IJMRA)Volume 4 Issue 3 - March 20

the process of creation.

We hope that our hermeneutical incursions into the living process of musical creation have made possible the construction of a dynamic tool that can contribute to the intelligibility of creative complexity, shedding new light on the process of composing a work

BIBLIOGRAPHY

Arnheim, Rudolf, *La pensée visuelle*, French translation by Claude Noël et Marc Le Cannu. Paris : Flammarion, 1976 for the translation.

Boulez, Pierre, *Penser la musique aujourd'hui.* París : coll. Tel, Gallimard, 1963, p. 31.

--------, *Relevés d'apprenti*. París : Seuil, 1966.

Cockayne D.G., Ruez D., Secor A.J., *Thinking space differently: Deleuze's Möbius topology for a theorisation of the encounter*. Translation by Br. Geogr. 2019;00:1–14,
https://doi.org/10.1111/tran.12311

Deleuze, Gilles, *Logique de sens*, Paris: Les éditions de Minuit, 1969.

Eco, Humberto, *La estructura ausente, introducción a la semiótica*, Spanish translation by Francisco Serra Cantarell. Barcelona: Editorial Lumen S.A., cuarta edición, 1989.

Ehrenfels , Christian von, « Sur les qualités de la forme », French translation by Denis Fisette, en *L'école de Brentano. De Würzburg à Vienne*, París : Librairie Philosophique J. Vrin, « Bibliothèque des Textes Philosophiques », 2007 for the translation.

Kant, Immanuel, *Kritik der Urteilskraft*, (*Crítica del Juicio*) SuhrkampTaschenbuch Wissenschaft, 14. Aulage, 1996.

--------, *Kritik der reinen Vernunft*, Hamburg: Felix Meiner Editions, 1976.

Maldiney, Henri, « Le dévoilement de la dimension esthétique dans la phénoménologie d'Erwin Straus » ("The Discovery of esthetic Dimension in the phenomenology of Erwin Straus)") in *Regard, Parole, Espace*. París : Les Éditions du Cerf, 2012.

MandolinI, Ricardo, "Una composición musical a partir de una improvisación : Fundamentación hermenéutica - Experiencia heurística de creación" in *Itamar, revista de investigación musical : territorios para el arte*, n° 8, 2022, Universidad de Valencia,
https://ojs.uv.es/index.php/ITAMAR/article/view/24823

-------,"A musical composition based on improvisation", in *The American Journal of Humanities and Social Sciences Research (*the AJHSSR*)*, Volume 5 Issue 5 (September-October 2022)
http://www.theajhssr.com/current_issue.html

-------, "Music, Musical Semiology, Musicology: Contribution of the Philosophy of Complexity and Musical Heuristics", in *Journal of fine Arts*, Volumen 3, n° I ,2020.
https://www.sryahwapublications.com/journal-of-fine-arts/volume-3-issue-1/?fbclid=IwAR24uh-qo2ptfERJ7zKJa7-ZJf3i9B4no2IaKIEZ_So35Ewx1BAakzUIzs8

--------, "Adorno and avant-garde music",
International Journal of Multidisciplinary Research and Analysis
(IJMRA) –Volumen 4 n°3 – Marzo 2021
http://ijmra.in/v4i3/10.php

Merleau-Ponty, Maurice, *Fenomenología de la percepción*, Spanish translation by Jem Cabanes, Buenos Aires: Editorial Planeta – De Agostini, S.A., 1984 por la traducción en castellano.

Morin, Edgar, *La méthode de la Méthode, le manuscrit perdu*. Paris : Actes Sud, 2024.

Platon, *La république*, French translation by Jacques Cazeaux. Paris : le Livre de Poche, Librairie Générale Française, 1995 for the translation.

Schopenhauer, Arthur, *Le monde comme volonté et représentation (The World as Will and Representation)*, French translation by Christian Sommer, Vincent Stanek y Marianne Dautrey. Notes by Vincent Stanek, Ugo Batini et Christian Sommer. Paris: Gallimard, 2009 for the translation.

Schaeffer, Jean-Marie, *Pourquoi la fiction ?* París: Éditions du Seuil, 1999.

Straus, Erwin, *Du sens des sens – Contribution à l'étude des fondements de la psychologie*, (*On the Meaning of Sense - A Contribution to the Study of the Foundations of Psychology)* French translation by G. Thines et J.-P. Legrand, París : Ediciones Jérôme Million, 2000 for the translation.

Varela Francisco, Thompson Evan y Rosch Eleanor, *De cuerpo presente, Las ciencias cognitivas y la experiencia humana (Embodied Mind: Cognitive Science and Human Experience),* Spanish translation by Carlos Gardini. Barcelona: Gedisa Editorial, 1992.

Webern, Anton, lecture "The way to the Twelve-tone

composition", 26. February 1932, in the cycle *The Path of the new Music*. Paris: Jean-Claude Lattès editions, French translation by Anne Servant, Didier Alluard et Cyril Huvé, 1980 for the translation.`

Winnicott, Donald, *Jeu et réalité*, French translation by Claude Monod et Jean-Bertrand Pontalis, Paris : Gallimard, 1975 for the translation.