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SENSORIAL AESTHETICS IN MUSIC PRACTICES

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Editor
Kathleen Coessens

Authors
Kathleen Coessens
Tim Ingold
Michaël Levinas
Fabien Lévy
Lasse Thoresen
Vanessa Tomlinson
Salomé Voegelin

Production manager
Heike Vermeire

Managing editor
Edward Crooks

Series editor
William Brooks

Lay-out
Studio Luc Derycke

Cover design
Studio Luc Derycke

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Sense versus Sensitivity in Composition

A Phoney Debate?

Fabien Lévy

Hochschule für Musik und Theater "Felix Mendelssohn Bartholdy" Leipzig

INTRODUCTION

As a composer and professor in composition, I find myself, like many colleagues, in a schizophrenic situation while composing: alternating between moments of reflection and moments of pure intuition, pure avoidance of a world of reason and verbalisation. As my students in composition face the same problem, it is a great challenge to teach and advise them. Roland Barthes (1972, xvii–xviii) accurately writes, “We often hear it said that it is the task of art to *express the inexpressible*: it is the contrary which must be said (with no intention of paradox): the whole task of art is to *unexpress the expressible*, to kidnap from the world’s language, which is the poor and powerful language of the passions, another speech, an exact speech.”

Starting from this situation and the experiential position that a composer is her or his first listener, that she or he composes not merely according to rules but by making decisions, that there is no absolute spontaneity in creativity, and that even music that is not notated contains an arche-writing (*archi-écriture*, in Derrida’s sense), I will first challenge the conventional dichotomies between intuition versus reason, improvised versus written music, and inspiration versus formalism.

Following this, I will question the logocentrism of Western music, which is at the heart of this debate in composition. Indeed, so-called Western art music has since Greek antiquity enjoyed a unique status among the arts: it is written; it is both art and science; it is logocentric. Through an enumeration of different problematics, such as the relationship between analytical and perceptual complexity, the issue of what a rhythm is, the dichotomy between form and structure, and the question of compositions that are primarily concerned with “secondary qualities” such as timbre, space, or cognitive ambiguity, I will attempt to demonstrate that a fetishisation of signs may come at the expense of musical meaning.

Finally, I will try to demonstrate that functional languages in music are valid not when they offer clear functions but, on the contrary, when they offer possibilities for an ambiguity that opposes them to the logocentric attitude that for

a long time has been applied by music theory, creation, and analysis in the West in analogy with semantic and scientific structures.

SENSE VERSUS SENSITIVITY IN THE COMPOSITION PROCESS:
A PHONEY DEBATE?

In our postmodern world and our real lives as artists, we must accept, despite the weight of Western logocentrism in music, that art music can't be reduced to written music. Inversely, we must also accept that intelligence within a piece of music can't be linked to the intelligence of its writing but can, in a pinch, be linked to the intelligence of the mental representations that the composer composes and that the listener listens to.

On the *emic* side (the side of perception), I slightly disagree with the spectral paradigm of "natural perception," which was directly influenced by questionable psychophysical justifications of Western culture that relied on nature—a practice born at the end of the nineteenth century in Germany, when *Naturwissenschaft* and *Vergleichsgeistwissenschaft* were considered two sides of the same scientific approach to nature and culture. An example of this is the Helmholtz curve of consonances built on natural beating between partials. Rather, I strongly believe that we perceive with our brains and not with our ears: this means that our perception is cognitive (from both a cultural and an interpretative point of view). Leibniz, who disagreed with Descartes's mechanist explanation of perception, therefore used the concept of *apperception*.¹ For Leibniz, apperception emerges from the representation of an object via the *cogito* through the presence of the subject.² In borrowing a more semiotic or cognitivist vocabulary, I maintain that we listen to signs³ and not to signals. Piaget (1975) called this cognitive reception and recognition of combinations of such signs a *scheme*.⁴ For instance, if we perceive two notes (G and C), we

-
- 1 "It must be confessed that *perception* and that which depends upon it are *inexplicable on mechanical grounds*, that is to say, by means of figures and motions" (*Monadology* 17, as translated in Leibniz 1898, 227–28).
 - 2 Kant categorises the different apperceptions according to their proximity to the sensitive by distinguishing them from conscious thought: "The *I think* must be able to accompany all my representations; for otherwise something would be represented in me that could not be thought at all, which is as much as to say that the representation would either be impossible or else at least would be nothing for me. That representation that can be given prior to all thinking is called intuition. Thus all manifold of intuition has a necessary relation to the *I think* in the same subject in which this manifold is to be encountered. But this representation is an act of spontaneity, i.e., it cannot be regarded as belonging to sensibility. I call it the pure apperception, in order to distinguish it from the empirical one, or also the original apperception, since it is that self-consciousness which, because it produces the representation *I think*, which must be able to accompany all others and which in all consciousness is one and the same, cannot be accompanied by any further representation" (*Critique of Pure Reason* B132/§16, as translated in Kant 1998, 246–47, emphasis adjusted).
 - 3 In Charles W. Morris's sense (1946). See also the scholastic definition, which quotes Augustine's dictum "aliquid stat pro aliquo" (as translated in Meier-Oeser 2011; something stands for something), or Charles S. Peirce.
 - 4 Following Piaget (1975), an individual perceiving an object or a concept tries to assimilate it. Schemes are thus the ensemble or the set of actions or receptions that the child, and later on the adult, acquires and develops through interaction with the environment. Music psychologist Robert Francès (1958) applied the same idea to the acquisition and creation of music.

won't perceive this as a signal but rather as notes or musical sounds involving a cognitive abstraction—and thus as signs. Moreover, in a certain context, G and C could be perceived as a perfect cadence—another level of abstraction—even if in reality we heard not a chord but only two pitches. More generally, in a tonal functional repertoire, the unconscious perception of pitches, degrees, modulations, or cadences leads to a reception of *cognitive signs*. This is the case too, I believe, in most music with functions (for instance, we can refer in North Indian music to the perception of the position of the *Sam*—the first beat of the cycle—or to the perception of the *kaida*—rules for generating rhythm) and even in cultures that don't have any explicit musical rules. For teaching purposes, I call these schemes *receptive cognitive signs*, stressing that listening is not just hearing. In consequence, we can also speak of a certain perceptive intelligence of music, an intelligence that doesn't connect automatically to more logocentric, or verbalised, analytical intelligences.

No matter whether the music is written, pre-composed, or improvised, composers are composers of cognitive semiosis, not of acoustic signals or of notation. In the logocentric Western world, there is a lot of confusion about the status and understanding of cognitive semiosis. First, it is not automatically explicable by way of semantic words. As a professor of composition, I am often confronted with students who know exactly what they want, but can't verbalise it. I therefore differentiate, in regard to composers and for teaching purposes, between the “prospective cognitive semiosis” (*sémioses prospectives cognitives*) that artists use to compose—which are clear schemes in the head, but are not automatically explicit—and the “prospective representable semiosis” (*sémioses prospectives représentables*) that composers use to explicitly describe objects for personal use (i.e., sketches) or public use (teaching, scores, etc.).

Many kinds of music around the world, whether categorised into art music or popular music,⁵ are not notated. However, most music seems to be composed on the basis of systems of prospective semiosis, which have to be perceived as receptive semiosis, as cognitive schemata. Still, representable prospective semiosis systems often betray the existence of aspects of cognitive prospective semiosis, particularly in social systems where certain stylistic characteristics are transmitted from master to pupil, whether verbally, gesturally, or musically. Thus, most repertoires based mainly on pitch systems have a vocabulary that allows them to be described: for example, the *i, ro, ha, ni, ho, he, to* system in Japan, the Chinese *gongche* system, *Devanagari* solmisation in North Indian music, the Tamil or Telugu solmisation system in South India, the syllabic *titi-*

⁵ The rather unclear distinction between popular music and art music points to different interpretations and meanings: it can relate to a social differentiation between audiences; it can also relate to a distinction in the use of the work, depending on whether its function is to entertain or to accompany other social or artistic events—dance, sung or clamoured words, images, the atmosphere of a location, and so on—or not. It can also relate to the deepness of reflection of the person who conceived it (the composer). Indeed, even when its role is chiefly entertainment, the music itself may be the product of deep reflection and art. Conversely, some “pure” music may be conceived without any depth or “thought” concerning its creation and the intentions of its creator, which adds to this confusion. The distinction, I believe, ultimately rests more in the work itself and in how its creator views it. “The price of being an artist is that one feels what all non-artists call ‘form’ to be content, to be ‘the material itself’” wrote Friedrich Nietzsche (2003, 207).

laras kepathan system in Java, and so on (see Bent et al. 2014). Similarly, different repertoires mainly structured around rhythmic systems often contain vocabularies for description and transmission: for example, the syllable system in the *tablā* repertoires of Carnatic music, or the system of sentence construction in Nigerian Yoruba percussion music. In addition, music repertoires in which playing techniques form an essential part of musical significance likewise possess representable prospective semioses that are used in the teaching of the instrument or in the transmission of a “score”: for example, the use of onomatopoeic sounds by Ewe percussionists in Ghana, vowels for the Japanese *nohkan* flute, consonants for the *shamisen* lute, or *jianzipu* characters for the Chinese *guzhō* zither.

“Actually, the peoples said to be ‘without writing’ lack only a certain type of writing,” writes Jacques Derrida (1997, 83), who uses the term “arche-writing” (*archi-écriture*) to refer first to “the possibility of the spoken word” and then to “the ‘graphie’ [writing itself] in the narrow sense” (ibid., 70). Whether written or arche-written (non-written or differently written), the symbolic representation of a piece of information (in this case, music) allows its abstraction, the distancing of the producing subject from his or her subjectivity, and finally, through this distance, the possibility of composing the cognitive sign. For Derrida, an arche-writing is a trace of speech without the presence of the subject, a set of autonomous elements inscribed in a network of signification, beyond a simple representation of speech: each signifying element is constituted from the trace of the elements of the system to which it belongs, a trace that clarifies its difference from the other elements—what Derrida names a *differance* (with an *a*, both from *defer* and *differ*). Arche-writing suppresses metaphysical aspects related to the producer and receiver; it conceals the problem of the absence or presence of a producer in the reception of the object (e.g., the presence of an interpreter, the presence of a body, questions of performance). It offers its user, here the composer, the possibility of concealment, of space, and of distantiation, “which would not appear without the grammè, without differance as temporalization” (Derrida 1997, 71). Arche-writing is a condition of composition, no matter whether the music is written⁶ or improvised.

The notion of arche-writing—in contrast to that of *writing*—offers the possibility of reconsidering notions in traditional debates on the creation and reception of art: intuition versus formalisation, the value of verbalisation and of the analytical intelligence of a work, improvisation versus composition, written music versus unwritten music. There is indeed no reason to oppose sens-

6 Many music-ethnological studies demonstrate the existence of “composition systems” in music without verbalised systems: Constantin Brăiloiu (1973) has described the modal and rhythmical principles of music in Central Europe; Simha Arom (1985) has explained many non-verbalised but strictly organised rules in the vocal and instrumental music of Central African pygmies; François Pachet (2000) has formalised a generic system of rules for almost every piece of blues. Finally, the invention of recording has deeply changed the practice of so-called improvised music, which often uses this transcription tool as a distancing tool, allowing the possibility of composing real, complex non-written musical categories. Ross Russell shows for instance that Charlie Parker invented bebop through listening to loops of Lester Young’s phonographic recordings. And free jazz, which appeared one decade later, was also the fruit of both the recording and the composition of sound not reduced to a note, concomitant to similar musical movements in “written” music—spectralism, saturation, *musique concrète instrumentale*, New Complexity.

ibility and reason, formalisation and intuition. As Adorno argued through his concept of *informal music*,⁷ formalisation alone cannot justify a work's value; conversely, if composers rely only on intuition for their creative impulses, they deprive themselves of the tools that would enable them to distance their own subjectivity and thereby risk remaining a prisoner of their own cultural clichés. While intuition is certainly a faster choice than more “formal” and distanced tools, it is also a choice based on learning and other experiences, on long-term gains that are in continuous evolution and development—as the cognitive sciences state. It is only logocentric ideology that tends to confuse intuitive choice with choices without alternative or reflection (the terms themselves are confusing). It is logocentrism that tends to confuse conscious choice and verbalisable choice, or that associates intuition with deficient self-control or mastery. We still lack a vocabulary to describe the different nuances involved in notions like *intuitive*, *unconscious*, *conscious*, *reflective*, and *logico-textual*. In mathematics, for example, sleep often offers openings and solutions to problems that conscious work could not unravel. The resulting outcome is no less irrevocable, creative, and well-worked. Similarly, improvisers also work ahead of time, developing beforehand an unwritten arche-writing. Composition is a continuous balance between intuition, reflection, and epiphany, and whatever the method, the composer is above all his or her first listener. Choices rather than constraints affect the composition.⁸

A final nuance between reflection and intuition concerns the non-verbalised intelligence of cognitive perception. We perceive the world through patterns that are very close to the explicit signs that describe it. “The question ‘How does something become conscious?’ can thus be more pertinently formulated as follows: ‘How does something become pre-conscious?’ And the answer would be: ‘By being connected to the corresponding word-notions,’” wrote Freud (2003, 111). So-called idealist thinkers even propose that signs themselves give existence to things.⁹ Thus, both artists and listeners perceive the world (and music) in the biased cultural way in which they think about it; and they think about the world (or the music) in the (cultural) way they understand it. One way to understand our unconscious perception of music is, then, following a deconstructiv-

7 “What is meant [by *an informal music*] is a type of music which has discarded all forms which are external or abstract or which confront it in an inflexible way. At the same time, although such music should be completely free of anything irreducibly alien to itself or superimposed on it, it should nevertheless constitute itself in an objectively compelling way, in the musical substance itself, and not in terms of external laws” (Adorno 1992, 272).

8 In this sense, I strongly encourage my student composers to follow a basic method valid for all aspects of the work, from the conception of the project itself to the details of the realisation, which I call “step 1, step 2, step 3.” Step 1 corresponds to the original idea, whether global or local (the choice of a project, an orchestration, notes, timbres, etc.). The second step is a reflective one: not to be satisfied with this choice, but to look for other answers, including those that do not correspond to one's own tastes but remain prospective possibilities. The third step leads to an irrevocable choice: a choice one might not have thought about initially, a choice that questions, advances, and offers insights into one's own tastes, one's own style. In a sense, it is a question of working through one's intuitions and diverting them from one's first instincts. These steps help force oneself to make decisions, avoid laziness, and discover one's own personality and one's own style by opening up one's choices.

9 Known as the Sapir–Whorf hypothesis, this theory was originally developed by the linguists Edward Sapir (1884–1939) and Benjamin Lee Whorf (1897–1941); it states that the world is constructed following the prevailing model of language.

ist method, to study how we explicitly represent music: For example by dividing music in Western culture into independent parameters of rhythm, pitch, and dynamics, which in itself remains an acoustic aberration but conforms to the second Cartesian method.¹⁰ Or, for instance, the way Western music then further defines ordinal or cardinal discrete alphabets for each of these parameters, then creates abstractions (notes, chords, sequence, for instance), defines a hierarchy of parameters, defines a very limited concept of pitch-consonance (even claiming universalism of consonance, unlike other cultures), and so on.¹¹ By deconstructing our representations of music and their limits, we can partly understand how our perception has remained deaf.

WHEN SIGNS OBSCURE MEANING

The “art music” or “classical music” (*musique savante*) of the West, in contrast to Western popular music, has a unique status among the other arts and in comparison with the musics of other areas of the world: it is distinguished by the use of a complete notation, which is autonomous and specific to this geographical area. Its system of writing is sufficiently developed to fulfil two functions: a transcription function, called *graphemological*, and a function that reflects prospectively on itself, called *grammatological*, which allows the creator to sketch, to self-distance, and finally to compose. There is already a clear difference from Laban dance notation, for example, which is mainly a notation of transcription and memory, not of creation.

Once the principles of Western musical notation were established—which happened between the ninth and thirteenth century—the composers of the *Ars Nova* claimed them as imaginative tools to play with permutations of signs: inversions, retrogrades, the separation of *talea* from *color*, isometric rhythms, and so on. From the fourteenth century on, these combinatorial games, which used the signs of a singular notation that separates its various parameters and builds discreet alphabets from it, allowed the development of Western polyphony, which is unique in the world. This combinatorial approach remained valid from the fourteenth to the twentieth centuries; it became especially vivid when the development and spread of generalised serialism updated games invented six centuries before.¹² Thanks to the efficiency and autonomy of this system of musical representation, the graphemology of the writing principles led to a type of grammatology whose aesthetic consequences have remained of utmost significance. A similarly significant development took place in the twenti-

¹⁰ “The second was to divide all the difficulties under examination into as many parts as possible, and as many as were required to solve them in the best way. The third was to conduct my thoughts in a given order, beginning with the *simplest* and most easily understood objects, and gradually ascending, as it were step by step, to the knowledge of the most *complex*; and *positing* an order even on those which do not have a natural order of precedence. The last was to undertake such complete enumerations and such general surveys that I would be sure to have left nothing out” (*Discourse on the Method*, as translated in Descartes 1996, 17).

¹¹ These questions are addressed in Lévy (2013).

¹² It was probably Anton Webern, who wrote his PhD on the music of the Flemish-German composer Heinrich Isaac (1450–1517), who influenced his teacher Arnold Schoenberg and his colleague Alban Berg to adopt the serialism of pitches in order to better structure free atonality.

eth century, when the graphemology represented by audio transcription (the phonographic record) invented by Edison induced the grammatology of concrete music fifty years later: playing tape backwards, filtering, or changing playback speed. A graphemology therefore implies a grammatology; as such, the act of composition is also a composition of the means of transcription, inducing a specific reflection and development of these means—moving between grammatology and graphemology. The principles of total writing represented by music notation in the West thus provided Western musical art with a unique status among the other arts and among the musics of other geographical areas. Both the status and the totality of the Western musical writing system strongly induced the conditions of its logocentrism (separation of parameters, ordinal or cardinal discretisation of descriptors, abstractions, hierarchies, consonance, etc.).

From Pythagoras's discovery of the harmony of frequency ratios to the quadrivium, from Jean-Philippe Rameau's correspondence with the mathematician Daniel Bernoulli, to Iannis Xenakis,¹³ or to spectralism, Western music has always held a special position, uniquely situated between art and science, and just as unique among other cultures of music and among other arts. In this position it is both written art and art-science, which are in fact related. In antiquity, certainly not all parameters of music were written down, but the notation system already possessed ordinal descriptors (pitches, denoted by letters) and cardinal descriptors (rhythm, backed by the metric of poetry) that gave it a scientific status, despite some difficulties (for example the problem of the *dimidiation* of the octave). The anthropologist Jack Goody (1977, 37–59) has demonstrated how all writing allows the “scientification” of a domain by promoting and allowing the accumulation and manipulation of knowledge, including abstract knowledge, and by reinforcing the possibilities and modalities of criticism, scepticism, reproducibility, and verification of authenticity. As Goody shows, notions of tree diagrams and complex taxonomies are, for example, difficult to transmit in a society of oral tradition (*ibid.*, 105); such a society will also have much more difficulty in distinguishing the scientific from the magical (Goody 1987, 66–72). In a written society however, data are preserved, transmitted and transmissible; they are analysable and manipulable a posteriori. The evidence is fixed materially in space and over history, recorded, refutable. Goody links, for example, the appearance of writing in 750 BCE in Greece to the emergence of science (*ibid.*, 41, 54).

The fact that logic and abstract grammatology are peculiar to writing has, however, been disputed,¹⁴ as we have seen with the notion of arche-writing. According to Udo Will (1999, 21), for example, an absence of analytical categories generally encourages non-written cultures to conceptualise and verbalise their knowledge in other ways, for example by referring to the world of nature.

13 “We are all Pythagoreans,” wrote Iannis Xenakis (1968, 174, my translation; nous sommes tous des Pythagoriciens).

14 See Jack Goody's answer on this subject (1987, 219). At the start of the twentieth century, Lévy-Bruhl (1910, 111) described the “prelogical mentality” (*mentalité prélogique*) of so-called “primitive societies,” mentioning the coexistence of both logical and prelogical elements in cultures and mentalities that are essentially synthetic and non-analytic.

This supports the position of many anthropologists who insist on the existence of other forms of logic in societies of oral tradition; and it relates to more general Derridean notions of arche-writing and traces (*mise en trace*) left by a producer without the explicit need for or use of writing. In other words, writing involves only a certain kind of science, and vice versa.

Furthermore, the logocentrism of Western art music has encouraged an inversion between the signified and the signifying, creating a confusion of roles between the artist as the manipulator of meaning and the composer as the organiser of signs and ideas. This has led, for instance, to an excessively positive value judgement being attributed, in all periods, to composition techniques, as well as to an exaggerated presence of logocentric disciplines such as music analysis and music theory, unlike in other arts. The logocentrism of Western art music has also enclosed perception and related issues by normalising them inside these developed systems. My attempts to deconstruct these imposed frameworks—which, from Pythagoras to Zarlino, have universally standardised art music using symbolic, acoustic, or psychoacoustic explanations, depending on epoch, to mystically-numerically justify pitch consonance—aim to generate a better understanding of logocentrism in music and avoid its effects and pitfalls (see Lévy 2014, 171–200). Cartesian logocentrism (separation into independent parameters, into finite alphabets, etc.), has finally led to a general reduction of music representation, whether written or perceptual, and has given greater importance to certain specific representations—especially pitch and polyphony, or combinations of its simple elements—at the expense of other interesting musical possibilities, such as transparametric elements, glissandi, timbre, rhythmic polyphony, spectral evolution, complex changes of dynamics, and so on. It should be noted that the music of other cultures is much more advanced in this field (especially concerning timbre, noise sound, and rhythm).

In recent years, post-structuralist artists have increasingly investigated these previously little-explored places, and have drawn attention to these “secondary” and less quantifiable qualities of music; they have started to deconstruct the norms of Western art music, from timbre to concert practice and to the work concept. However, an immense amount of work is still needed.

Alongside these efforts, the previously mentioned difficulties and themes can be found throughout my compositions as well as in my theoretical work: questioning the notion of the final work, the orchestra, analytic complexity, form versus structure, texture, unity, and timbre.

Next, I will offer some theoretical examples developed from these reflections.

COMPOSING COGNITIVE AMBIGUITY

Music, it seems to me, is not a “what” but a “how”: even when a composer invents new techniques, they are always tools at the service of a formal dramaturgy; otherwise music risks becoming a catalogue of effects or an academic conundrum (destined only for specialists and theorists of musical techniques).

Introduzione
Adagio molto

Figure 3.1.

In the example above, Beethoven, from the first measure, confounds the establishment of the tonality of F major by way of a sequence that uses augmented sixths and a chromatic bass line. This process of intended tonal confusion is continued in the fifth and sixth bars by a classic strategy, in which the surprise is itself surprising.¹⁵ In a few measures, Beethoven has brought together numerous devices from the tonal music of his time that allow him to misdirect a listener: shifts from major to minor that lead to a change in tonal function, augmented sixths, harmonic sequences, ambiguities in harmony and counterpoint created through voice-leading, in particular by conjunct moves, silences on strong beats and syncopation, and so on.

This example could certainly have been replaced by any other significant work from the tonal repertoire: whether they employ modulation, counterpoint, or suspension, these different tonal techniques have above all, it seems to me, been procedures that allow composers to equivocate playfully and to slip between meanings rather than embrace an unequivocal functionality, with double articulation.¹⁶ Western musical theories, too heavily imbued with logocentrism and linguistic comparisons, are often inclined to believe these techniques are functionally unambiguous. But it is really ambiguity and inventiveness that are served by classic practices like major–minor linkage, augmented sixths, diminished chords, or Neapolitan sixths.

¹⁵ This technique, essential for a formal development of the discourse, is studied and described in detail in Lévy (2014, 210).

¹⁶ Double articulation in the definition of André Martinet (1960). Moreover, in the arts, the plane of content and the plane of expression are often irreducible (with the exception of conceptual artworks): we can paraphrase a speech, but we cannot paraphrase a poem, where form and content are consubstantial.

Mehr langsam, oft zurückhaltend. M.M. $\text{♩} = 100$.

Figure 3.2.

Consider the tonal ambiguities in the music of Schumann (figure 3.2), or in Brahms, or in bossa nova (the harmonisation in F and not in C in Antônio Carlos Jobim’s *The Girl from Ipanema*, and more generally the ingenious harmonisation of melodies), or the ambiguities in counterpoint and harmony in Wagner’s music. Such playfulness by composers of musical amphibologies (referring to the potential of ambiguity) is present from the seventeenth century to the emancipation of dissonance and is also evident in non-Western cultures, and more generally, in all music that allows apperception. And, in contrast to semantic languages, music essentially finds its meaning, or more generally its expression, by means implying double- and counter-sense. The use of such means are, let us repeat, at the service of the emergence and formal expressiveness of music.

Musical ambiguity entails several aesthetic consequences:

- The first consequence that seems to me essential is that we need to take into account cognitive aspects of music, which seem to have been largely ignored by many composers of “contemporary music.” This constitutes a central question in my work as a composer, as I’m convinced that, without cognition, a creation can end up as a gestural work, offering the listener no possibility of *cognitive compression*¹⁷ or understanding, anticipation, or surprise. Moreover, we must understand the notion of cognitivity not as an effort to give “meaning” to music, but to arrive at a “counter-meaning.”
- A second consequence is that to examine musical cognitivity does not imply that we must reach back to techniques already proven to allow ambiguity—to return, for example, to the functional harmon-

¹⁷ I use the term *cognitive compression* in the sense of information theory and of Kolmogorov–Chaitin theories of complexity (see Lévy 2014, 129).

ies of tonal music. After all, sensible equivocality emerges precisely at the border between the known and the unheard, by shifts or displacements of this border (remember the *Tristan* chord). In other words, a consonance is learning a dissonance that could make sense.

- Third, a composer preoccupied with cognitive ambiguity is always forced to take a narrow path, both aesthetically and sociologically, since he or she seeks to take risks, including the risk that it could be heard/understood. Such a composer will therefore satisfy neither those who derive their sensible experience from endlessly rehearsing with admiration masterworks of the past that sounded ambiguous in their time, nor those who, by way of sociological distinction or by obliviousness embracing tolerance and progress, remain hostile to any perceptual scheme that could be partially understood, and who abandon them to turn towards chaos, towards the perceptively irreducible, as an unconscious norm—that which some young American composers call “negative aesthetics” and which some composers adopt as a posture, if not an imposture.

These principles of cognitive ambivalence and perceptual risk have long accompanied my work as a composer. For example, I have developed techniques of “transparametric inflection,” where a change affects different musical parameters in similar ways, so that listeners perceive changes without being able to discern the parameter to which they apply. My works also playfully subvert different musical categories: for example, a quartet that is not written for four voices but for virtual voices passing from one instrument to another. Listeners cannot grasp whether certain surfaces are textures or if they need to discern certain lines and highlights in it. In *Hérédo-Ribotes* (2001), for solo viola and fifty-one orchestral musicians, the violist is at times a soloist and at other times an acoustic contributor to a timbre, an effect achieved by inserting the player among other musicians; at other moments, the viola is part of a set of small elementary instruments that are dislocated and transmitted from the soloist to the other musicians, changing in size and identity. In *Soliloque sur [x, x, x], commentaire par un ordinateur d'un concert mal compris de lui* (2002), a computer listens to the other works on a concert programme and creates a piece from what has been performed: is this a new composition, a meta-work, or just a comment? In *Als Gregor & Griselda* (2015), each voice of a perfect vocal canon paradoxically interlaces with the others to create a monody with a risqué meaning.

Since 2003, I have been combining different techniques of cognitive ambivalence with the procedure of “generalised cross-rhythm” (an inappropriate term that needs to be changed). In African pygmy music, one device for exchange and ambiguity operates by passing rhythmic cells from one voice to another, so that the sum of the voices remains the same but the listener is disoriented by the transfers (figure 3.3).

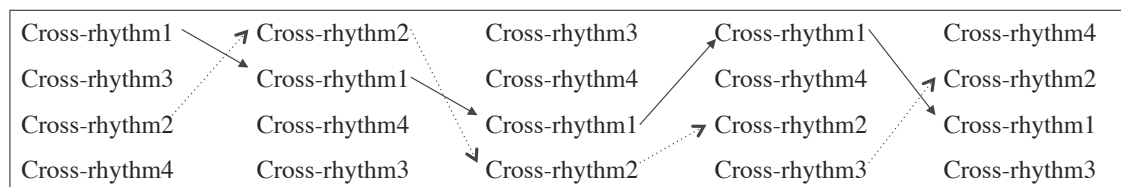


Figure 3.3.

In the generalised cross-rhythms shown in figure 3.4, the technique is extended to other parameters such as rhythmical patterns, instrumentation, morphology, pitch in a given harmonic field, and possibly space; furthermore, the exchanges between voices, although following distinct paths, are such that the listener perceives global patterns and isotopes, without being able to follow the voices or perceive any exact repetition.

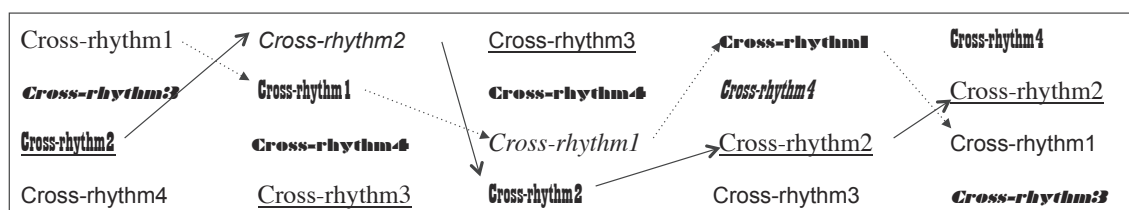


Figure 3.4.

Three parameters are particularly well suited to cognitive ambivalence:

- (a) The first parameter is the notion and experience of space, because spatial distribution allows exchanges between virtual instruments, which decentres the listening experience and removes geographical references. I have used space-ambiguities in several different works: *À tue-tête*, for nine spatialised instruments (2014), *Hérédo-Ribotes*, for solo viola and fifty-one orchestral musicians (2001), *Soliloque sur [x, x, x], commentaire par un ordinateur d'un concert mal compris de lui* (2002), and *Les sonneries de Cantenac* (2008), for example.
- (b) The second parameter is timbre: using advanced playing techniques, various methods of orchestration, and hybrid sounds to create extraordinary colours, well beyond mere notes.
- (c) The third parameter is rhythm.

Rhythm is certainly a highly cognitive parameter. At the start, let me be clear: rhythm is not reducible to strings of rhythmic symbols, a confusion resulting from Western culture's focus on writing and its aim to separate musical phenomena into independent parameters and to assign each of them a distinct set of symbols. In this sense, the rhythm of Stravinsky's "Augurs of Spring" from *The Rite of Spring* is not a succession of quarter notes, but a cognitive grid characterised by an irregular succession of orchestrated accents, its meaning

Figure 3.3. Cross-rhythm techniques.

Figure 3.4. Generalised cross-rhythm technique, formal scheme (the different fonts, tones, and forms symbolically represent the different parameters that cross voices in different directions).

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derives from changes of timbre and dynamics, within a single, regular pulsation. Similarly, quintuplets imposed inside triplets, themselves included in septuplets, as we see in some New Complexity works, are not to be considered as “rhythm” but rather as gestures, because they remain cognitively incompressible, unable to be a perceptually grasped. I consider a rhythm, above all, to be a mental construction of a temporal tree structure, of which only certain elements are played, thereby revealing implicit cognitive structures. These can be realised through playing with various strata of pulses (minimal, nominal, metric) and through syncopation, by way of metric displacements, changes of micro-pulse, and so on. Rhythm is thus expression and non-expression, contained within a cognitive grid of several dimensions. This is, for example, the role played by metre signatures as felt in Western music (figure 3.5).

Rhythm is therefore an ideal parameter with which to thwart cognitive expectations—by imposing and then counterposing micro-pulses, whether unitary or metric (see Lévy 2014, 234), by playing with diverse polymetres and polyrhythms, by creating syncopations, and so on.

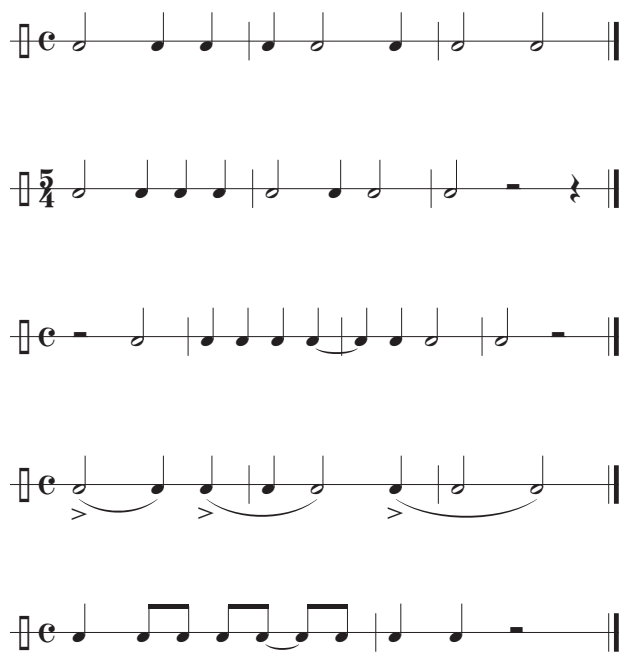


Figure 3.5.

CONCLUSION: MOVING MUSIC BEYOND LOGOCENTRISM

Thinking about paradox and deconstruction (in Derrida's sense) offers my work effective and inspiring methods of moving beyond understanding and logocentrism in order to approach and surpass the limits of Western art music. This implies not only going between and beyond existing signs, finding new grammatologies by developing new graphemologies, but also committing oneself to rethink categories that have been taken for granted: the Western representations of music, such as notes, rhythms, pitches, and their respective symbols; and the use of instruments, ensemble formations, and musical categories too strongly shaped by two centuries of pure music. While these centuries certainly were a unique period for Western music, I believe they have led to stagnation and even today hinder possibilities for musical performance and creation and for confronting or interacting with other cultures, whether institutional (concert, orchestra, and opera organisations and conservatories) or musical (concepts of timbre, work, instrument, virtuosity, or intelligence in music).

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