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ENCOUNTER WITH THE OTHER: THE SERIALISTS AND THE SPECTRALISTS

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ABSTRAK

Musik kontemporer di Paris pada tahun 1970an didominasi oleh musik serial, dan spektralisme hadir memberi alternatif. Di tulisan ini, saya berargumen bahwa fenomena naiknya musik spektral ini bukan hanya sekedar masalah domestik musik kontemporer Eropa, tetapi fenomena ini berkaitan erat dengan masalah hubungan dengan yang “Liyen”, termasuk dengan budaya musik non-Barat. Dalam analisis saya, saya menemukan tendensi pada komposer musik serial untuk menjadi eksklusif melalui apa yang saya sebut mekanisme Othering, yang muncul pada tulisan-tulisan Schoenberg dan Boulez. Sebaliknya, komposer spektral menunjukkan sikap yang lebih inklusif terhadap musik di luar musik kontemporer Eropa. Musik spektral menawarkan terobosan dalam cara pandang terhadap musik, baik dalam ranah teknis mau pun kultural. Sebagai contoh, menggunakan spektrum inharmonik untuk basis komposisi daripada spektrum harmonik—spektrum harmonik sering digunakan sebagai landasan teori untuk membingkai musik non-Barat sebagai “alami” dan “belum tersentuh”. Contoh lain adalah memblurkan perbedaan antara warnanada dan harmoni, di mana konsep ini memperluas konsep harmoni, hingga tidak terbatas pada definisi harmoni klasik Eropa. Musik spektral membuka jalan baru untuk menghadapi pertanyaan-pertanyaan tentang inklusivitas.

Kata kunci: *musikologi, komposisi, serialism, spectralism, liyen, kontemporer, non-Barat*

ABSTRACT

The Parisian contemporary music scene was dominated by serial music in the 1970s, and spectral music came to provide a musical alternative. In this essay, I argue that the rise of spectral music is not merely a domestic phenomenon within the European contemporary music scene, but that it is deeply tied with the issues of Othering, including the relationship with non-Western musical cultures. My analysis points out the tendency of exclusivity of the serialists via what I call mechanisms of Othering, as appears in the writings of Schoenberg and Boulez. On the contrary, the view and approach of the spectral composers tend to be more inclusive towards various musical system. Spectral music proposes viewpoints that are groundbreaking on the technical and cultural level. For example, putting the focus on the inharmonic spectra as a compositional basis, which negates the obsession towards the harmonic spectra, as it is often used as a theoretical justification to frame non-Western music as being “natural” and “untouched”. Another example, blurring the distinction between timbre

and harmony, creating a more inclusive definition of harmony, not limited to the classical European sense of the word—decentering harmony from Europe. Spectral music opens a fresh avenue in facing the question of inclusivity.

Keywords: musicology, composition, serialism, spectralism, othering, contemporary, non-Western

INTRODUCTION

The rise of spectral music provided a musical alternative to the serial-dominated Parisian contemporary music scene during the mid-1970s. Tristan Murail mentioned this dominance in an interview with Ronald Bruce Smith, where he said that serialism was the establishment in the mid-1970s, following the return of Boulez in Paris to establish IRCAM and the Ensemble Intercontemporain. “He was ‘establishment,’ as he was heavily supported by the government. It seemed that there was little room for anything else” (Smith 2000: 1), Murail stated in the interview.

During this time, aesthetic disagreements emerged between Boulez and the spectral composers—I am using the term “spectral composers” not to depict them as an ideological monolith, but rather as a group of composers whose approach and thinking are closely linked to spectral composition techniques. In their commentaries, Boulez and the spectral composers demonstrated opposing ideas in approaching composition. However, this is not to say that the two were polar opposites, in fact, their relationship was more complex. This is shown, for example, with Boulez’s explanation of his Third Piano Sonata, where he divided it not into ‘movements’, but ‘formants’—an amplified region of frequencies within

a sound spectrum—as a metaphor of the density in each section of the piece. The usage of the term formant evokes a link with spectral music, showing an influence of spectral thinking on Boulez’s own composition (Goldman 2010: 218-219). However, in explicit commentaries, Boulez mainly made skeptical and dismissive comments towards spectral composers. In a 2003 interview with Phillippe Albéra, Boulez stated his skepticism of the spectral techniques, pointing out the impossibility of reconstructing spectra with musical instruments since the instruments will add the spectra of their own. He then expressed a point with a dismissive tone in his essay, *Le Système et l’idée*, when commenting about the usage of spectra as a compositional framework, “...In most rudimentary cases, you end up with dominant seventh and ninth chords...” (qtd. in Goldman 220), depicting spectral approach as a limited musical resource.

Further exploring Boulez’s commentaries, his statement in the essay *Possibly...*, 1952, shows a dismissive attitude towards non-serial music in general, “Any musician who has not experienced -- I do not say understood, but truly experienced -- the necessity of the dodecaphonic language is USELESS. For his entire work brings him up short of the needs of his time” (qtd. in Goldman

214). In 1982, Gérard Grisey made a comment which could be understood as an opposition to Boulez: “We are musicians and our model is sound, not literature. Sound, not mathematics; sound, not theatre, visual arts, quantum physics, geology, astrology or acupuncture” (qtd. in Goldman 210). When reading Grisey’s statement and relating it to Boulez’s, it could be understood that Grisey tried to state that the ideal compositional model, for him, is sound, not series, going against Boulez’s argument about the necessity of dodecaphonic language. Tristan Murail shows a similar attitude towards sound, opposing it with Schoenberg’s compositional approach, “Schoenberg, in the final analysis, will have changed nothing: his compositional technique is nothing more than a negative image of the academic tradition. The real revolutionaries are those who have fundamentally changed our relationship to sound” (Murail 2007: 174). A more vocal statement opposing the serial approach was expressed by Hugues Dufourt, “Serial composition is based on a fundamental violence because it must reduce and mix systems which are concurrent and constraining...” (qtd. in Goldman 215).

There is a general tendency here, in which serial and spectral approach to composition oppose each other, at least in the level of explicit commentaries. In this essay, I intend to explore the further cultural implications that emerge from these musical disagreements. An important element of disagreement from these two camps, I argue, cannot be

divorced from the issue of the encounter with the Other. Texts produced by both schools show a different attitude in encountering the Other; the serialists show to be more exclusive, and the spectralists more inclusive. The Other could take various forms, and here, I am focusing mainly on non-Western musical culture as the Other. The Other is a negative space, it is not a stable position, and it functions as a mirror that creates a contrasting identity. I am here taking a cue from Said on defining the Other, on his view of the Orient as a contrast of Europe, “..the Orient has helped to define Europe (or the West) as its contrasting image, idea, personality, experience” (Said 1978/1979: 1). I am interested in exploring how the serial and spectral composers depict, treat, and complexify their relationship with non-Western musical culture, with various mechanisms of Othering. I define mechanisms of Othering as a set of strategies that enable the act of Othering to happen; it could be a very subtle proposition, yet it proves to be fundamental that it enables the act of Othering in the first place. It is a kind of epistemological presupposition, a lens that distorts information, turning it into the creation of the image of the Other. I will explore this relationship historically from Schoenberg to the spectral composers, to give a sense of the shift in how non-Western musical culture is depicted and treated. Problematic depictions of non-Western musical culture, of course, have started long before Schoenberg. However, my essay here is limited in

exploring the discourse produced by the serialists and the spectralists, so that an in-depth analysis of their relationship is possible. To explore this relationship in-depth, I attempt to interpret and identify the mechanisms of Othering in the discourse of serial music; either generic or specifically related to serial musical thinking; mechanisms that I would even say *enable* the emergence of serial music in the first place. Then, this interpretative analysis will be compared to the discourse of spectral music to show the tendency I mentioned earlier: the exclusivity of the serialists and the inclusivity of the spectralists.

DISCUSSION

Schoenberg and the Other

The mechanisms of Othering I mentioned appear in Schoenberg's musical treatise, *The Theory of Harmony*. Schoenberg's premise is that all music is based on the harmonic series, and as music evolves, it will include more parts from the more remote areas of the harmonic series. Schoenberg himself wrote, "What today is remote can tomorrow be close at hand; it is all a matter of whether one can get closer. And the evolution of music has followed this course: it has drawn into the stock of artistic resources more and more of the harmonic possibilities inherent in the tone" (Schoenberg 1948/1978: 21). On consonance and dissonance, he wrote, "It all simply depends on the growing ability of the analyzing ear to familiarize itself with the remote overtones, thereby expanding the conception of what is euphonious,

suitable for art, so that it embraces the whole natural phenomenon" (Schoenberg 21). These statements imply that music that incorporates remote overtones is more developed and sophisticated. By approaching the musical issue from this angle, non-Western music that is often not based on the chromatic scale is then understood to be a defective and inferior product of history. Schoenberg thought that non-Western music was incomplete and inferior:

The discovery of our scale was a stroke of luck in the development of our music, not only with regard to its success, but also in the sense that we could just as well have found a different scale, as did for example the Arabs, the Chinese and Japanese, or the gypsies. That their music has not evolved to such heights as ours does not necessarily follow from their imperfect scales, but can also have to do with their imperfect instruments or with some other circumstance which cannot be investigated here. (Schoenberg 25)

Through this logic, serial approach is justified as an effort to include more remote overtones, hence advancing the history of music. This demonstrates what I call the mechanisms of Othering. It is tied to serial musical thinking since one of the main premises of serial music is to include the upper remote overtones into a composition. Without the theoretical reliance on the harmonic series, it would not be possible for this thinking to emerge in the first place. The harmonic series is the presupposition, the epistemological lens, that made this conclusion possible. It functions as a mechanism that ensures

the superiority of Western music while rendering the Other invisible. As we can see from this passage, to justify the superiority of Western music, Schoenberg needs to create an image of the Other. The superiority of “our scale,” would not be possible without the inferiority of “the Arabs, the Chinese and Japanese, or the gypsies.” The Arab, Chinese, Japanese, and Gypsies; all function as a contrast that made the superiority of Western music, specifically the serial approach, possible.

Schoenberg’s mechanism of Othering gives rise to the exclusive tendencies in serial thinking since as I showed here, a part of serial thinking is built upon the exclusion of the Other. I will further expand my analysis of the mechanisms of Othering embedded in serial thinking by looking at the writings of Boulez. Identifying these mechanisms will enable a comparison with the spectral composers, who as I argued earlier, shows a more inclusive attitude.

Boulez and the Other

In 1971, Boulez wrote an essay titled “Oriental Music: A Lost Paradise?” which exposes his complex relationship with the Other. It was first published as “*Musique traditionnelle – un paradis perdu?*” translated as “Traditional Music – A Lost Paradise?” (isn’t it interesting that traditional equals oriental?) Then, it was later published as part of his collections of essays titled *Orientalisms*. This is a complex essay; it contains many problematic statements that claim the superiority of the West over another

musical culture, but at the same time it shows some progressive views on how Western composers should relate with the Other—in this case, non-Western musical cultures. I am choosing to explore this essay because it shows various dimensions of Boulez’s thinking—the problematic and the progressive—for later comparing it with the spectralists’ thinking.

He opens the essay with a rather progressive idea,

I find that people form a too sentimental and emotional idea of Oriental music. They now dive into it like tourists setting off to visit a landscape that is about to vanish.... There is a great foolishness in the Westerner that goes to India, and I detest this idea of a ‘lost paradise’. It is one of the most odious forms of affectation. (Boulez 1986/1990: 421)

Boulez opposes exoticism that fetishizes non-Western culture as a “lost paradise”, as if non-Western culture is remote and far away, a place to seek for “wisdom and contemplation” (Boulez 421). This exoticism creates a cultural barrier, depicting non-Western culture as an object of wisdom to be subtracted by the West as an active subject. Boulez does not specify his criticism in detail; it is still a progressive attitude nevertheless.

Boulez also shows some other progressive attitude by expressing admiration of specific techniques from non-Western musical culture. First, he showed a critical attitude towards the standardization of Western instruments in opposition to the tuning relativity of non-Western musical instruments.

Second, he referred to Noh and its relation with *Sprechgesang*. Boulez mentioned the problem of *Sprechgesang* faced by Schoenberg: the different tessitura when combining speech and singing. Boulez mentioned that Noh has managed to solve this problem. Here, Boulez showed a huge interest in learning the musical culture in-depth, "If I have the time -- and that is always the difficulty -- I would like to investigate all the Noh schools, to make a thorough study in Japan of the techniques, and to take lessons long enough to discover the secret of the Japanese, the ease with which they pass from speech to singing." Boulez shows a progressive attitude by expressing his openness and curiosity of non-Western music.

However, he also made a lot of problematic points about non-Western musical culture. After opening the essay with a rather progressive statement, he abruptly shifted,

The music of Asia and India is to be admired because it has reached a stage of perfection, and it is this perfection that interests me. But otherwise the music is dead....The musical art of the Orient that has attained perfection is now frozen, and if there is no modern Oriental music it is because those peoples have lost their vigour. (Boulez 421)

Here, he relies on a problematic trope, depicting non-Western culture as static and unchanging. Boulez states this trope with subtlety since initially, the statement seems to be a genuine admiration. The trope is expressed by the statement, "it has reached a stage of

perfection." Reaching that stage implies the idea that the culture could no longer develop, putting a boundary with the idea of "progressing" Western culture. Then, his statement "the music is dead" shows that the admiration he expressed was not genuine.

The term "Orient" that Boulez used was not specific, it refers to an all-encompassing definition of non-Western culture. When he used that term, he suddenly referred to people of the Andean region and Africa. This is a classic move, a mechanism of Othering by generalizing a large group of different cultures under one umbrella: the "Orient". The "Orient", the Other, here becomes a contrast that defines the identity of the West. In the same paragraph, he stated "...and if there is no modern Oriental music it is because those peoples have lost their vigour." This statement reveals a paradox about modernity: it often takes elements of non-Western culture, but then frames it as singular progress of European civilization. Boulez's statement that there is no "modern Oriental music" becomes even more paradoxical, if it is related to Boulez's liner note to his composition *Le Marteau Sans Maître* (1955), claiming to derive inspiration from non-Western sources.

This paradox is emphasized even more by Boulez, reducing the influence of non-Western music into his compositional thinking.

I have carefully studied and also transcribed Indian music, but if knowledge and study of these civilizations have influenced me they have done so only on the spiritual

level. I have found an ethics of existence rather than an aesthetics of enjoyment. The influence is on my spirit and not on my work. The main points are as follows: the time structure, the conception of time being different; the idea of anonymity; the idea of a work of art not being admired as a masterpiece but as an element of spiritual life. (Boulez 421)

When relating this particular passage with the liner note of *Le Marteau Sans Maître*¹, it is obvious that Boulez attempted to downplay the influence of non-Western culture in his work. It is reminiscent of Stravinsky's relation with Russian folk tunes², an attempt to diminish external influence into one's composition to claim that the composition is purely based on one's personal inspiration. The fact that this essay was written 26 years after *Le Marteau Sans Maître* seems to be Boulez's way of erasing the trace of non-Western influence.

There is also a problem related to this when he mentioned spirituality. He relied on the trope that non-Western music is "spiritual", and that Boulez, a participant in Western modern music, is in contrast, "rational". By writing such a statement, Boulez undermined the technical complexity of non-Western music. He goes further: "The technical aspects, which are always analyzed and regarded as being of primary importance when a contemporary European score is studied, are here a completely secondary matter" (Boulez 422). Here, Boulez attempted to emphasize the complexity of modern European music and claim its superiority. It is interesting to see

this attitude, especially the fact that earlier he emphasized his transcription and study of Indian music; and that Messiaen, his teacher, had an opposite view from Boulez about Indian music. Messiaen was fascinated by Indian rhythmic concept (*tala*), and that opened an avenue for him to write rhythmically complicated pieces. Having this context in mind, it is improbable that Boulez had not learned Messiaen's rhythmic concept, and so his statement can be read as an empty dismissal. This dismissal is then continued with attaching the trope of Asian music being melodic, "We are well aware that Asia has attributed the utmost significance to the organization of intervals, and with a unique sensitivity" (Boulez 422)

Interestingly, after his own dismissal, Boulez showed a quite progressive view.

But there is no sense in trying to build specimens of Oriental music into contemporary music; no influence is good except when it is transcended. There are no exact illustrations in contemporary music of which one can say that they are derived from this or that raga. This would be folklore. To transfer such elements -- as is done by some -- is completely mistaken; it is the quest for the lost paradise of which I have already spoken. (Boulez 422)

This statement resonates with composers who take inspiration from non-Western musical culture, for example, Steve Reich. Reich stated that he was more interested in borrowing the structural aspect of other musical cultures, which he regarded as ideologically neutral. One could argue that Reich was also

taking sound, not just the structural model, as Reich often uses vibraphone that is often associated with gamelan; and marimba that is often associated with balafon. However, there is an intention to transcend exoticization. Reich approaches the issue of cultural borrowings by giving more emphasis on deriving a structural model.

In Boulez's case, his position on how one should relate to non-Western musical culture is ambiguous. He cited Debussy as a model for cross-cultural influence, "The composer who received this influence at the deepest level and transcended it in the most marvellous way was Debussy." Boulez referred to the piece titled *Et la lune descend sur le temple qui fut*, stating "...the concepts of time and sonority are clearly determined" (Boulez 422) Is Boulez trying to say that time and sonority is the most important concept to take from non-Western musical culture? He continued with his commentary on Claudel, "It is not a matter of a purely musical influence but rather an influence in the realm of thought" (Boulez 422). Isn't time and sonority musical concepts? Why does he seem to emphasize that influence in the realm of thought is more important? Boulez contradicts himself, even more, stating that "...just beating gongs and using a gamelan orchestra signifies nothing" (Boulez 423). Why does he use gong ostinato in *Rituel "In Memoriam Bruno Maderna"* then? Boulez does not describe a clear approach of what he meant by "transcending" non-Western influence.

The ambiguity of Boulez's position is further amplified by the constant contradiction that Boulez made, between statements based on a sense of sameness *and* a sense of difference³, both stated at the same time. He violently created a sense of difference in one sentence, "I would regard it a pity if the Oriental influence became a refuge for young musicians in a world allegedly threatened but which is our living and real world" (Boulez 423), Boulez implies that the West is the "living and real world", creating a strong sense of difference with non-Western culture (particularly Asian in this case, as he referred to Indian music). The depiction of non-Western culture as the "non-real" is the way to further create cultural distance. Meanwhile, the sense of sameness is shown by Boulez's commentary on raga, drawing similarities between the formalism in ragas in regards to the different times of the day, with the formalism in Western music. He mentioned this issue with an ironic tone, "Do not forget that this formalism also exists in our own music. We do not play a cha-cha-cha in a church." Boulez seems to create a sense of difference, Othering; but at the same time critically comparing similarities. This approach amplifies the complexity and ambiguity of Boulez's position.

From these examples, I sum up Boulez's mechanisms of Othering as follows; depicting non-Western culture as static, overgeneralizing the "Orient", and the erasure of influence. Slightly different from Schoenberg's mechanisms of Othering, Boulez's seems to be more generic, relying on circulated tropes, and

not necessarily linked to serial thinking. It is interesting, however, to see the difference between Boulez's attitude in comparison to the spectral composers. It is not only in the area of aesthetics that Boulez and the spectralists show contrasting ideas, they also demonstrate different attitudes on how one should perceive the Other. There is a general tendency, as I mentioned earlier, that the serial composers show a more exclusive attitude, and the spectralists more inclusive.

The Spectralists and the Other

The difference in how the two schools relate to the Other could be summed up as follows: Serial music claims superiority and excludes music that does not fit into their system; spectral music, built from sound as the fundamental building block, includes sounds from any culture and any moment of history. This inclusive attitude already appears in the so-called "proto-spectral" composers, meaning composers whose ideas fundamentally influenced the emergence of spectral music. One of these composers that Murail mentioned quite often is Giacinto Scelsi. In his essay, *Scelsi, de-Composer*, Murail mentioned how fundamental the influence of non-Western musical cultures are to Scelsi's works,

If there is an underlying model in Scelsi's work, it does not come from the Western tradition of form, the observation of nature or the construction of an original theory, but rather from elsewhere . . . or perhaps 'Elsewhere.' (Murail 180)

One could argue that there is a degree of exoticism in Scelsi's work, which is often surrounded with a mystical atmosphere juxtaposed with words from non-Western language. However, Scelsi's attitude towards music and sound, in general, opens a potential for a productive conversation with the Other, in this case, non-Western musical culture.

Murail is arguably continuing Scelsi's inclusive attitude. In his writing, Murail showed a great deal of interest in non-Western culture, which comes across especially in his writing on Scelsi. In explaining the non-Western influence, Murail intends to abstract the musical elements so that it does not become a superficial imitation. In a commentary, he explained how the focus on timbre brought by the spectral approach builds a bridge with non-European music.

The increasing focus on timbre also connects to non-European music, where melodic or timbral ornaments are often considered an integral part of the discourse, or even an element of the modal system (as in Vietnam). In the Indian classical tradition, one could even say that the musical substance of a piece is nothing but the elaborate ornamentation of an underlying structure: the raga. (Murail 176)

Murail also points out that abstracting non-Western musical forms is a way to create an alternative from the conventional concept of musical development in Western music:

Not the concept of development or motivic cells, of superimposing structures (or in fact of structures at all), not 'com-position' (to return

to our introduction), but a global approach, drawing closer to the object in ever-narrower concentric circles. Once again, this approach recalls the East, and the aesthetic of the Zen calligrapher or painter. (Murail 179)

In approaching non-Western musical sounds, Murail shows an interest in the spectra of the instruments or the sound, rather than trying to evoke it. This tendency comes across most clearly in his work, *L'esprit des dunes*, where he utilized the spectra of Mongolian overtone singing, Tibetan horn, and Tibetan monks' chant as the harmonic model, and inevitably using the sound also as a structural model. I will explain later in this essay on how Murail used sound not as an evocation but more as a compositional model.

Expanding on the definition of the Other; jazz, rock, and popular music also can be included as the "Other" of contemporary classical circles. Murail and Grisey showed an interesting move to deconstruct this distinction. Murail expressed an interest in rock, for example. He explained the importance of timbre in a rock context and how it is often dismissed by the classical contemporary circles:

For us ('serious' musicians), all rock is terribly alike and monotonous (4/4 time, electric guitars, pentatonic melodies, E minor -- because it is easier for the guitarists -- etc.). For rock listeners, however, there is no doubt about the identity of the band or the song, after hearing only a few seconds. What they are hearing is not what we hear: they listen to the sound before anything

else; they see the differences and subtleties that will go unnoticed by the musically educated -- and thus compartmentalized and conditioned -- ear. (Murail 122)

In his composition, Murail also employed rock elements directly. The clearest example is in *Vampyr!* for solo electric guitar. The incorporation of electric guitar, usually used in pop-rock context, is also prominent in later Murail's oeuvre, *Contes Cruels* for two electric guitars and small orchestra. The electric guitars function both as soloists and a timbral model for the orchestra.

G rard Grisey mentions jazz as a source of inspiration. The influence of the rhythmic aspect shows mainly in his work *Vortex Temporum*. In this piece, Grisey repeats a rhythmic gesture and shifts it as the piece progresses. He mentioned an enlightening moment in 1984 while attending the rehearsal of Murail's *D sint gration*:

Despite the extreme rigor of thought and the completely new treatment of sound that Murail puts forth so abundantly, I am discovering to what extent it is time for me to add rupture and rapidity to the obsession with continuity and slowness of process. Is this the influence of African music, or of the jazz I discovered during my stay in California? Is it the discovery of Conlon Nancarrow -- the greatest rhythmic composer since Stravinsky...? (qtd. in Lehman 2012: 11)⁴

What these statements show is the high degree of inclusivity from the composers working in this circle. It is not only the personal attitude, but the spectral

approach itself is inclusive and has the potency for synthesis with other musical contexts. An example is the work of Steve Lehman, an American jazz saxophonist and composer, who combines spectral techniques in a jazz improvisational context. His composition that shows this influence most clearly is *Echoes*, where he employed spectral harmony as the harmonic framework of the piece.

Harmonic vs Inharmonic Spectra: A Cultural Battleground?

A particularly radical aspect of the French spectral school is the inclusion of the “defect” harmonic spectra, often named inharmonic spectra. Harmonic spectra, or the harmonic series, carries a lot of cultural connotation and is often used to justify many things. As I explained at the beginning of the essay, Schoenberg used it to justify serial approach. It is used to criticize the 12-tone equal temperament in favor of just intonation. Lou Harrison used the discourse of just intonation to tune his gamelan⁵. Murail pointed out the problem with the harmonic series obsession:

If harmonic spectra have often been invoked to justify this or that theory of music, a systematic study and conscious use of their characteristics is a recent development.... Nature, traditional instruments, and synthesizers all offer examples of defective spectra: spectra composed of odd-numbered partials (roughly corresponding to the clarinet’s spectrum--or a pure square wave, to be precise); harmonic series missing one out of every three partials; etc. (Murail 2005: 126)

He also mentioned this point in an interview with Rozalie Hirs:

Now if you look at the real harmonic spectra —because all of these attempts, like the ‘just intonation’ approach, are based on the theoretical harmonic resonance, which doesn’t really happen that way with real instruments— very often you have slight deviations from the pure harmonic series. This is what’s most interesting when you look at real spectra: the deviations. (Hirs 2009: 13)

Murail’s focus on the inharmonic spectra implied a subtle criticism towards the “idealized” harmonic series. The idealization of the harmonic series is often tied to a “Western discourse of great antiquity”, such is the case with Lou Harrison. Marc Perlman explained elegantly in “American Gamelan in the Garden of Eden: Intonation in a Cross-Cultural Encounter” the underlying idea and problem of Harrison’s theory. The harmonic series is tied with the idealization of Nature, and by assuming that the harmonic series is the basis of Javanese gamelan tuning, it is an attachment of the label “natural” towards the Javanese culture. This is a mechanism of Othering, putting a fictional distinction between the “modernized and industrialized West” with the “natural and untouched East”. An aspect that Murail successfully emphasized with spectral methods is to show that most sound sources show a degree of inharmonicity or missing notes, “defective” spectra. In a way, this is showing the absurdity of the obsession with the harmonic series.

The implied criticism of the usage of harmonic series also implied a criticism towards Schoenberg's ideological basis. Understanding that harmonic series is a theoretical construct, the concept imposes what *sound should be* rather than *sound as it is*. Murail's approach is closer to the latter. In *Désintégrations*, one of Murail's major oeuvre, he based the composition on the analysis of instrumental spectra, which shows the inharmonic aspect of the instruments:

In section VIII of *Désintégrations*, an incomplete harmonic spectrum with fundamental c-sharp (34.7 Hz) is subjected to a progressive distortion process moving from harmonic to inharmonic. This transformational process is modeled after the natural distortion present in the spectrum of the piano. Timbre analysis of various piano registers does not result in harmonic spectra. The high partials reveal frequencies that are higher than

their respective harmonic reference value (the respective integer multiple of the fundamental frequency). The deviation between the observed value and the theoretical harmonic value appears to be a function of the involved partial. (Hirs 104)

This inharmonic model is then modeled to create the composition material. Below is Hirs' transcription in a program for computer-aided composition, *OpenMusic*, to approximate the way Murail generated his harmony.

Murail's approach was more "ecological", and in this approach lies a critique of the harmonic series' usage. Murail showed a way to approach any sound, including from non-Western culture, *as it is*. This means that non-Western musical culture could not be idealized—and in idealization lies exoticization—via absurd notions such as the harmonic series. In the context of

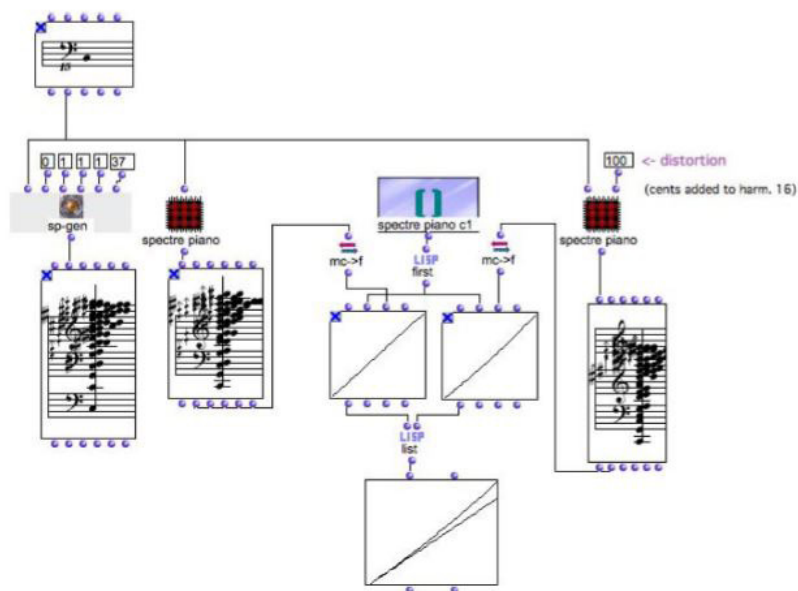


Figure 15. Distortion modeled after the piano timbre; the increasing deviations with increasing partial rank are made visible in a graph (a bpf object)

Fig. 1: Rozalie Hirs' emulation of *Désintégrations* compositional sketches in *OpenMusic*.

classical Western musical discourse, the study of inharmonic spectra questions the theoretical foundations that claim the superiority of using the harmonic series as a musical justification.

Decentering Harmony from Europe

A major groundbreaking concept that spectral music brought to the table is the delineation between timbre and harmony. In a basic sense, harmony is a collection of notes played together. When sound is analyzed through a spectrogram, it will appear that the timbre of a specific sound could be broken down into its arrangement of overtones, which is a collection of notes. In this sense, timbre and harmony are two sides of the same coin.

“Harmony” is a term that is often used to create a sense of between Western and non-Western musical culture. Kofi Agawu touched upon this theme in his essay “The Invention of “African Rhythm”” on how “harmony” is used as a way to establish European identity and “othering” African music by overemphasizing its rhythmic aspect -- as if “harmony” belongs to Europe, and “rhythm” belongs to Africa (Agawu, 1995). In Boulez’s essay which I discussed earlier, “Oriental Music: A Lost Paradise?”, he touches on the stereotype of Asian music being “melodic”⁶. One can see that these distinctions are based on the effort to establish a European identity.

However, the concept of timbre/harmony shakes up these distinctions. The concept could include any kind of sound, hence opening a new space

in approaching harmony. Music that does not make use of “harmony” in the classical European sense now could be categorized as harmony since its sound could be broken down into its essential components. An example of Murail composition that directly makes use of non-Western sound as the basis of harmony is *L’Esprit des dunes*. There are three models that Murail utilized: Mongolian overtone singing; Tibetan horn; and the chant of Tibetan monks. The material that is used directly to create vertical harmony is the Tibetan monks’ chant.

This approach opens a fresh new avenue for composers. When looking at this case politically, the spectral approach successfully deconstructs the Eurocentric concept of harmony. All music now can be said to contain harmonic structure; hence decentering harmony from Europe.

Furthermore, the concepts offered by spectral music blurs the distinction between pitch and rhythm. As Philip Singleton explained in his analysis:

...the horn and the trombone play a C natural (65.41 Hz) and a D flat (69.3 Hz) respectively. When the lower frequency is subtracted from the higher, a difference tone of 3.89 Hz is obtained, which is well below the human threshold of hearing.... Therefore, to obtain the required frequency, Grisey asks the double bass to play a series of repeated notes; 33 eleven in the time of four crotchets, which works out at one note every 0.2479 seconds – which is to say a pulsation very close to 3.89 notes per second, or 3.89 Hz. (Singleton 2016: 27-28)

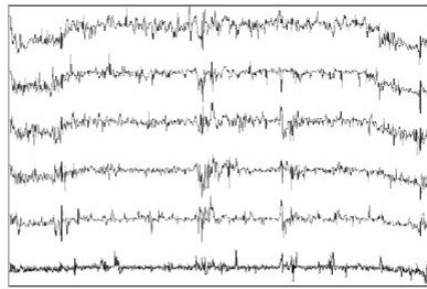


Figure 93. Tibetan monks' chant: evolution of the six lowest partials

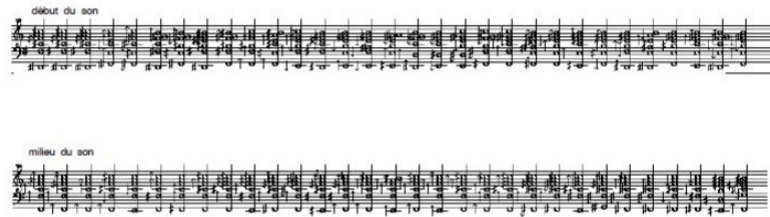


Figure 94. Tibetan monks' chant: two transcriptions into staff notation (of the beginning and the middle of the sound sample)

Fig. 2: Rozalie Hirs' emulation of *L'Esprit des dunes* compositional sketches for Tibetan monks' chant partials in *OpenMusic*.



Figure 96. Page 36 of the *L'Esprit des dunes* score with annotations: introducing the TIBETAN MONKS' CHANT object at rehearsal marking D © Editions Henry Lemoine - by courtesy of the publisher

Fig. 3: Rozalie Hirs' analysis of vertical harmony based on Tibetan monk's spectra in *L'Esprit des dunes*.

Grisey evokes a difference tone caused by pitches put together, and turning it into rhythm because it is below the threshold of human hearing. In

general, humans can hear approximately between 20 Hz to 20,000 Hz. Below 20 Hz, pitch is perceived as rhythm. This approach negated the exoticization of

rhythm since Grisey blurs the distinction between harmony (because it is generated by an aggregate of pitches) and rhythm.

A Liberation from Exoticism

The spectral approach opens an alternative on how to take models from non-Western musical cultures without turning them into a mere exotica. Reich talks about taking structural models rather than sound; evaluating this statement, now sound from non-Western musical culture could be incorporated, treated with rigor, and serves as a harmonic model -- using it as a harmonic model means that inevitably it also serves as a structural model. Spectral techniques creates a method for the incorporation of these sounds.

Spectral techniques could break down the components of sound into its fundamental elements. When this technique is applied to non-Western sound materials, the sound is then “divorced” from its cultural reference⁷. Sound is not understood as a reference to the culture where it came from, but purely as an arrangement of spectra. This arrangement of spectra is ultimately neutral, as it only serves as a model, not an attempt to evoke a certain place or time—denying any chance of exoticism. When Reich talked about structural models being a neutral element that could travel across culture, now sound can also be a neutral element. Hence, spectral techniques open a new discourse on how to ethically incorporate non-Western sounds.

CONCLUSION

The opposition between the serialists and the spectralists is related to the question of encountering the Other. The emergence of spectral music is not merely a stylistic opposition towards serial music, but it is also an opposition to the exclusive tendency among the serialists. Historically, spectral approach shows an inclusive approach, different from serial composition that excludes many other approaches towards music, whose thinking also contains a lot of mechanisms of Othering. From the technical aspect, spectral approach complicates, and even delineates cultural borders. The inclusive concept of harmony/timbre decentered harmony from Europe; and managed to bridge contemporary classical with musical genres that are often considered ‘lower’, such as rock and jazz. The focus on inharmonic spectra also decenters the overused concept of harmonic series that is often used to justify all sorts of theoretical premises, including those that are problematic.

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Endnotes

- 1 Boulez wrote in his liner note, "I must admit that I chose this instrumental "corpus" under the influences of non-European civilisations: the xylophone is a transposition of the African balaphone, the vibraphone refers to the Balinese gender, the guitar reminds one of the Japanese koto" (Boulez 1995: 2)
- 2 Richard Taruskin extensively elaborated Stravinsky's shifting attitude towards Russian folk music in his paper, *Russian Folk Melodies in "The Rite of Spring"* (Taruskin 1980)
- 3 Referring to Kofi Agawu's concept in *The 'Invention' of African Rhythm* on methods in comparing between different cultures and how musical studies of African music is often based on the ideology of difference to distant

- Africa from Europe, emphasizing Africa as the “Other” (Agawu, 1995).
- 4 “Malgré l’extreme rigueur de la pensée et l’aspect a proprement parler inoui du traitement des sons que Murail dispense a profusion, je decouvre a quel point il est temps pour moi d’ajouter rupture et rapidité l’obsession de la continuité et a la lenteur du processus. Est-ce l’influence de la musique africaine ou du jazz découvert lors de mon séjour en Californie? Est-ce la découverte de Conlon Nancarrow – le plus grand rythmicien depuis Stravinsky...?” Translation by Stephen H. Lehman (Lehman 2011: 11).
 - 5 The logic is based on the idea that the harmonic series is the source of a “pure” sound, which then is corrupted by the usage of equal temperament. The building of gamelan based on just intonation is then linked to the depiction of javanese culture as “pure” and “natural.”
 - 6 “...Asia has attributed the utmost significance to the organization of intervals, and with a unique sensitivity” (Boulez 422).
 - 7 In a way, this is quite similar to the acousmatic approach, where the focus is shifted to the sound rather than the source of the sound. However, spectral techniques answer further the question of inclusivity by blurring the lines between disparate concepts such as harmony/timbre and pitch/rhythm.