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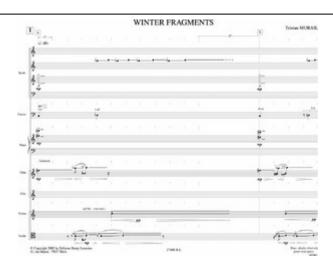
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Abstract and Keywords

This chapter examines Murail's music from his late 1960s student works to the highly sophisticated works of the 2000s through the notion of poetics. It draws on Paul Valéry's concept of poetics, which sought to address how the artist's aesthetic aims can require the consequent development of an appropriate technical compositional framework. Murail's musical poetics, as they developed, are shown to have at times a neo-Symbolist character. Through examination of Murail's music and thinking, the chapter identifies four stages in the development of his poetics: a first, apprentice stage moving away from serialism; a second stage corresponding to the initial emergence of French spectralism; a third stage taking advantage of computers to establish a quasi-systematic spectral harmonic framework; and a final (current) stage using the previous developments to reengage with classical tradition. The chapter concludes with a brief discussion of Murail's turn in his most recent music to the interrelation of sound, psyche, and the self.

Keywords: Tristan Murail, Paul Valéry, poetics, spectralism, Gérard Grisey, serialism

Tristan Murail's *Winter fragments* (2000) for chamber ensemble and electronics affords a useful view of his stylistic evolution between the 1970s and the 1990s. From a rhetorical standpoint *Winter fragments'* opening seems familiar from Murail's earlier works (Example 1). First there is a strike, then an echo; first, a percussive strike on piano, synthesizer, and flute (an F^{\sharp} octave), then, a dramatized 'echo' on flute, violin, cello, and synthesizer (an ascending semitone gesture from a quarter tone below B). In terms of concept this can be related to the opening of *Mémoire-érosion* (1976): an attack, then a resonance out of which the resultant music flows.



Example 1. Strike and echo figure in the opening section of Murail's Winter Fragments.

But behind that semblance lie differences. Whereas *Mémoire-érosion* opens with a single note that generates the subsequent music in a continuous stream, *Winter Fragments* in a more sophisticated way opens with a melodic cell that, across the length of the work, subsequently manifests various differentiated aspects. Whereas *Mémoire-érosion*'s form features a chronologically linear sequence of instances in which sound material accretes, building up to chaotic noise, *Winter fragments*' form presents the chronologically fragmented actualization of a virtual gesture, a gesture furnishing the piece with its material from the beginning.² More remarkably, that gesture—as is finally revealed in the closing bars—is in fact the naïve melody from Grisey's *Prologue* (1976) for solo viola. Grisey's *Prologue* melody here appears in a hauntingly distorted guise, the brief apparition of a phantasmal memory. Whereas *Mémoire-érosion* focuses on memory and forgetting in a formalistic way, *Winter Fragments*, moving beyond formalism, focuses on memory psychologically as pertaining to the subjectivity of the composer. The fragment from Grisey emerges as if recalled by Murail at a distance following the recent death back in France of Murail's old friend.

In these ways *Winter Fragments*, emblematic of Murail's third period works, has a neo-Symbolist aspect. The snow-covered winter landscape of Murail's adopted home in upstate New York suggests the composer's internal subjective state. The snow-covered landscape of *Winter Fragments* is as the rainy townscape of Verlaine's *Il pleure dans mon cœur*. Upon finally sounding the *Prologue* melody in full, the work fades out. One has the sense that nothing more need be said: everything has been said without saying anything.

This comparison of *Mémoire-érosion* and *Winter Fragments* broaches the general subject of Murail's style and how it has evolved. In this chapter I examine Murail's music from his late 1960s student works to the highly sophisticated works of the 2000s. I do so in terms of the notion of poetics.

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Poetics here does not simply mean the "poetic" content of a musical work—its programmatic imagery or aesthetic effect. Rather, poetics here, as per Paul Valéry's use of the term, is a way of thinking about artistic creation in terms of how the artist's initial expressive vision entails the consequent development of an appropriate technical compositional framework (from the Greek poiein, as per Stravinsky's consequent, less philosophical use of the term).³ An effective musical poetics facilitates that exacting control and definition that allows the creation, paradoxically, of the indefinable: "formal rules" that "sometimes excite [the artist] to discoveries to which complete freedom could never have led him."4 Murail's poetics show the elaboration of a precise technical basis for composition whose precision facilitates the expression within the finished artwork of sensations that could not be produced by any other means and in whose expression there resides, as well as the composer's intellectual manipulation of his means, the composer's intuitive relinquishing of those means before (as Valéry says) "the indefinable." In this way I deliberately seek to say more about Murail's art than is said by reducing it to the term spectralism. Whereas spectralism is general, poetics is artist-specific and covers the combination of personality, aesthetic, and technique. The active invention of a framework, as Murail and Grisey invented spectralism, assumes a prior aesthetic vision that drives the artist to express and to create.

In charting the development of Murail's musical poetics I divide Murail's oeuvre into four periods:

- 1) An apprentice period (1967–74) seeing a move away from academic serialism to develop a new technique that would facilitate Murail's desired aesthetic effect.
- **2)** A first period (1975–81) seeing the establishment of the basic principles of Murail's poetics.
- **3)** A second period (1982–94) seeing the refinement of the spectralist technique through an in-depth engagement with computers.
- **4)** A third period (1995–present) seeing the deeper development of Murail's poetics through the exploration of autobiographical images and an explicit engagement with tradition.

The goal of this article, then, is to provide a chronological overview of Murail's oeuvre to date and to suggest an interpretation of that oeuvre.

"L'Espace reproduit dans le pollen des lampes": Murail's Apprentice Period, 1967-74

From the fifteenth century *grands rhétoriqueurs* through Boileau's *Ars Poetica* to René Rapin's seventeenth century poetics and the nineteenth century Parnassians, French prosody has regularly seen the formulation of rules and strictures prescribing how one ought and ought not to compose poetry. [T]he idea of a sort of legality crept in," notes Valéry about the tradition, "and took the place of what had been, at first, recommenda-

tions of empirical origin." It is not a stretch to see in this prescription of artistic rules an historical tendency in common with musical composition in France.

In French new music in the late 1960s, the dominant compositional framework was serialism. However, while older serialists like Boulez and Barraqué had developed an open approach to serialism, creatively developing serialism according to their artistic aims, among apprentice composers at the Paris Conservatoire a closed, academic approach to serialism held sway, of the type Boulez had criticized in the music of René Leibowitz. Following serialism's introduction to the *écriture* syllabus, peer pressure existed to compose following this sanctioned avant-garde technique and idiom. For Murail, who joined Messiaen's composition class in 1967, over two decades this post-war compositional movement had declined into an arid doctrine that, rather than facilitating the creative impulse, served as a roadblock: "Fauré had been replaced by Boulez, but the academic spirit remained intact."



Example 2. Opening of the fifth movement of Couleur de mer. The static texture presages the direction Murail would take with Altitude 8000.

Murail's first commission, *Couleur de mer* (1969) for fifteen instruments, evinces the tension in Murail's early student works between the dominant serial paradigm and the music he wished to compose. Although *Couleur de mer*'s style is for the most part post-tonal and "serial" (the quotations warranted by the fact that the idiomatically "serial" sounds are not, in fact, composed serially) it is clear in places that Murail is pushing the available compositional framework in a different direction. In retrospect one can see in nascent form in this earliest of Murail's ensemble works some key features of his mature music:

- 1) A compositional focus on color, an intuitive sound category straddling harmony and timbre, in which Messiaen's influence is apparent, and which would later be formalised in the category of harmony-timbre.
- 2) The use of an electroacoustic component, in the form of a Hammond Organ part.
- **3)** A programmatic focus on natural imagery, here a maritime scene.
- **4)** A degree of autobiographical allusion, both in the programmatic focus—the maritime scene is that viewed from the port of Le Havre, where Murail grew up—and in the title and the epigraphs to each movement in the score, which are drawn from the poetry of Gérard Murail.¹²
- **5)** In the final movement (Example 2) the composition of slow-moving, static textures.

Couleur de mer is "written in a style that does not correspond to its musical and poetic ideas," Murail remarks. 13 "When I wanted to continue writing works with the same type of language, it didn't work. ... And I said to myself that it was necessary to find a technique for what I really wanted to express." 14

At the time, despite his not having initially undertaken the Conservatoire's écriture classes, Murail was recognized as one of the most talented students in Messiaen's composition class. The commission of Couleur de mer led him to postpone his Political Science exams at the Institut d'études politiques for a year, and in the end marked a definitive orientation towards a career in music. 15 Initially encouraged by his father to study not music but "a real subject," 16 Murail had by this stage already taken a *license* in Economics from the Sorbonne and a diploma in Classical and Maghreb Arabic at the École nationale des langues orientales vivantes. His interest in contemporary and electronic music having been piqued by hearing recordings of the music of Messiaen and Boulez, Murail had studied the organ before studying the ondes Martenot at the Schola Cantorum with Jeanne Loriod. When Murail visited the Paris Conservatoire to perform as accompanist at a concours, Messiaen, encouraging the young performer in whom he recognized talent, suggested that Murail should consider taking the concours d'entrée to join his composition class. The entrance exam for the Conservatoire's composition class comprised the writing of a fugue, an exercise lasting five hours, along with another day-long test wherein the candidate had to harmonize a chorale, write variations for string quartet on the chorale theme, and freely develop a given theme for the piano. To be able to choose which of the Conservatoire's three composition professors he would study with (Tony Aubin, André Jolivet, or Messiaen), Murail also had to submit an original composition. The piece in ques-

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tion, Comme un œil suspendu et poli par le songe (1967, Example 3) for solo piano, as well as displaying Murail's precocious talent and tendency to name works after lines from his father's poetry, in its occasional Messiaenesque phrases and chords displays Murail's brilliant aptitude for absorbing stylistic elements from others and reformulating them in his own voice.¹⁷



Example 3. Opening measures of Murail's Comme un œil suspendu et poli par le songe (1967). Note the Messiaenesque syncopation in the rhythm of the right hand at bar 3.

The challenge for Murail was to develop a personal compositional framework that corresponded to his aesthetic aims: to develop, that is, his own poetics. This desire is evident in the terms in which Murail described *Couleur de mer* to the audience during the premiere's pre-concert talk: "One shouldn't try to 'understand' the music of today," Murail said, "since it isn't charged with a 'message', even one of intellectual pretension." Murail stressed instead the freedom of the composer in his sound-associations and the necessity for the listener "to receive the work in a 'state of abandon,' without reference to the framework of previous centuries, the best recipe for welcoming it as an 'ear to the world' surrounding us." A review in the *Havre Press* pre-echoes the type of remark often made in relation to spectral music. "[T]he work possesses its unity in a great variety of invented timbres. ... Sonorous aggregates that are refined ..., complex and rigorous weave the fabric of a music that breathes in life." In this we can see how the desired aesthetic preceded that framework the development of which would enable its adequate expression.

A first step towards the development of a compositional framework amenable to his desired artistic expression came with a visit to Messiaen's class by Iannis Xenakis. "Xenakis had brought some of his big orchestra pieces—*Metastaseis*, *Pithoprakta*—and he explained them. I was quite impressed by his approach, which was very different from what you were taught at the conservatories. You were taught melody, harmony, counterpoint, etc.; while Xenakis thought of sound masses, in which individual lines—i.e., the notes played by the performers—were not necessarily that important. What was important was the structure of the mass of sounds." The influence on Murail of this sound mass conception resulted in *Altitude 8000* (1970) for small orchestra, premiered at the Conservatoire in January 1971 by a student orchestra. Departing from serialism and establishing a

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style Murail would pursue over the next few years, *Altitude 8000* features a continuous string surface with few distinct events; the percussion section is reduced to vibraphone; there are pentatonic harmonies and octaves; and the score calls for traditional articulation like vibrato. At first Murail's composition teacher was unconvinced. "When I showed Messiaen the score he didn't understand what I had been trying to do. ... I had removed all events, like percussion and even ... pizzicati. I had rubbed all that out, which made certain passages sound like electronic textures." After the premiere, however (which was booed by some of Murail's fellow students) Messiaen changed his mind. "He said to me: 'You have found your way, there it is—continue.' That was a decisive moment for me. If he hadn't said that to me, I would have been perhaps asking myself questions, if only for the diverse reaction which the piece aroused." Xenakis, too, was impressed: along with Messiaen he sat on the jury for the 1971 *prix de Rome*, when Murail's composition portfolio won him the prize and two years at the Villa Medici in Rome.²²

Clear in Altitude 8000 is not only Murail's penchant for vivid colors but, through this, to creating a sense of beauty. The opening chord on violins and violas is quasi-tonal (C, E, F, F#, G, colored by harmonics); in general the dynamic is soft and the harmonies not overly dissonant; on page 21, in contrast to the prevailing academic serialism, there is a direction to play legato; and on page 43—more contrary still—Murail tells the players to "[l]ook for the beauty and precision of the sound ('classical' sound, with vibrato for those instruments having vibrato)."²³ A similar vaunting of sonorous beauty appears in parts of Cosmos Privé (1973) for orchestra, wherein, Murail writes in the score, "generally speaking, the beauty of the sound should be sought after both individually and collectively, within the character of each instrument."24 In this manner, and through the technique of sound mass construction—a precursor of the eventual use of spectral models—Cosmos Privé aims not for clarity but in a quasi-Symbolist way for evanescence. "Often things are merely suggested, or at most, stated," Murail writes, "like an eroded bas relief seen through a curtain of fog" (calling to mind Mallarmé's "le sens trop précis rature / Ta vaque littérature"). ²⁵ This quasi-Symbolist ethos was also present in *Couleur de mer*; in the latter score one of the epigraphs taken from Gérard Murail's poetry reads:

...the space, reproduced in the lamp's pollen and decaying the azure windowpanes, I hold it in my sea-colored thought... 26

Quasi-Symbolist aesthetics are regularly present in Murail's oeuvre, fusing programmatic imagery, compositional material, and desired aesthetic effect.²⁷

Rome presented the final two impetuses in the development of Murail's mature compositional framework. The first was the meeting with Giacinto Scelsi, the encounter with whose music was less a case of decisive influence than of inspiration and emboldening to continue in a non-serial itinerary. That Murail should valorize Scelsi is little surprise, given the similarities between Scelsi's music and that of Ligeti and Xenakis, and a sort of pre-existing kinship between the ondist Murail's music and that of the ondiolinist Scelsi. Noteworthy in this regard is Murail's *Où tremblent les contours* (1970) for two violas, which, as well as having a faintly esoteric title, in a style not dissimilar to the Italian composer presents two violas blending in and out of each other, often orbiting the same pitch

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center while deviating from it through glissandi. Scelsi's music as Murail later will say combines an historical erasure of inherited post-tonal rhetoric with a relatively unique vision whereby music is organized in terms of the inherent dynamism of sound. 30 Whereas, from Bach to Boulez, the axiomatic basis of écriture was the progressive addition of note to note, in Scelsi's work—and subsequently that of Murail himself—écriture starts at a stage anterior to this, decomposing a given note and musically exploring its interior. In this poetics material is generated not through abstraction and construction but through sounding and deviation; form, not through development but through distortion; contrast, not through combination but through reciprocal interferences. Based as it is at this anterior level of sound, this poetics transgresses the boundaries between the traditional categories of harmony, noise, timbre, and rhythm, all of which become secondary to the primacy of sound's continual self-differentiating. "For centuries, different grids were placed on top of acoustical realities," Murail later wrote in a rhetorical register; "now we are in the processes of liberating ourselves from that approach. Once music has been unloosed from all those fetters, we will have returned once more to the very beginnings of music what vertigo!"31 Just as, for the serialists, works such as Webern's Symphony Op. 21 (1927-28) and Concerto for Nine Instruments Op. 24 (1934) represented a threshold into "a new mode of musical being," for Murail (and soon his L'Itinéraire colleagues) works such as Scelsi's Quattro Pezzi su una nota sola (1959) for chamber orchestra and Anahit, poème lyrique dédié à Vénus (1964) for violin and eighteen instruments similarly represented a threshold into a new mode of musical organization.³² It represented a newfound artistic freedom and validated his aesthetic instincts. Murail's works from this period evince a continuously flowing, "magma music" style not dissimilar to Scelsi: for example, Mach 2,5 (1971) for two ondes Martenots, Au-delà du mur du son (1972) for orchestra, and Les Nuages de Magellan (1973) for two ondes Martenot, electric guitar, and percussion.

A tentative step towards reintroducing harmonic hierarchy within this framework was taken with *La Dérive des continents* (1973) for viola and string orchestra. Composed for the Royan Festival a year before Murail began using spectral resonance models, *La Dérive des continents* opens with a long low pedal E on cellos and double basses over which a static minor chord gradually unfolds. As with Grisey's chronologically proximate *D'eau et de pierre* (premiered in November 1972), one reviewer compared it to "the Prélude to *Das Rheingold* to the extent that the entire work seems to flow from the harmonics of a fundamental." Nowadays Murail thinks little of the work. But as with *Couleur de mer, La Dérive des continents* from an historical point of view shows us how the desire for a different type of aesthetic preceded the development of the technical framework that allowed it to come into being.

The final step towards that framework arrived when Murail became friends at the Villa Medici with Gérard Grisey, his ex-classmate, who arrived in late 1972. "Grisey arrived the year after [me], and we had lots of conversations. We started seriously speaking at that time." These conversations, Murail says, "were more technical than theoretical." When the following year, having returned to Paris, Murail founded Ensemble l'Itinéraire along with Roger Tessier, the first commission Murail and Tessier arranged using the group's

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state subsidy was a new work by Grisey for small ensemble. Ensemble l'Itinéraire premiered the resulting work, Périodes (1974), at the Villa Medici in May 1974, with Murail and Scelsi among the audience. It seems fitting that French spectral music's beginning took place under the same roof, figuratively speaking, as Murail and Grisey's conversations; the two would be the leaders of the new movement. Shortly after this, Murail composed Tigres de verre (1974, Example 4) for ondes Martenot and piano. Although holding a relatively minor place in Murail's catalogue, Tigres de verre builds on previous works and is the first instance of Murail organizing harmonic material by way of the twin acoustical "poles" of harmonicity and periodicity. The opening of Tigres de verre presents a crescendo on a low A at the bottom of the ondes Martenot's range, which, upon reaching peak loudness, activates, as if by reaction, a G two octaves up on the same instrument, which sounds (says the score) "like a harmonic resonance of the A." This is followed by a loud cluster on the piano; then the sequence begins again. This figure repeats several times, with the pitch range of the rudimentary harmonic spectrum each time expanding; after this opening section the work's style reverts back to that of Murail's previous works such as Mach 2,5. "The resonances of the initial A diverge, then recompose other objects," Murail writes in his original program note. "After several avatars, the piece comes back almost to its point of departure. One could play it in a loop, eternally."³⁵ If there is some superficial similarity to *Périodes*, in Murail's subsequent 1970s music the principle of sequential repetition and deviation would assume a distinctive character within his developing poetics.



Example 4 First page of Murail's Tigres de verre (1974) for ondes Martenot and piano.

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With this, the basic elements of Murail's compositional framework were in place: harmonicity based on frequential relationships; periodicity; sequential repetition and deviation; refined color; and formal flux.

"Un coup de ton doigt sur le tambour décharge tous les sons et commence la nouvelle harmonie": Murail's First Period, 1975-81

Murail's apprentice period, departing from academic serialism, planted seeds for what was to come.³⁶ Murail's first period works embody the spectacular accomplishment of French spectral music's first flowering: Mémoire-érosion, Territoires d'oubli (1977) for piano; Ethers (1978) for flute and small ensemble; Treize couleurs du soleil couchant (1978) for small ensemble; Gondwana (1980) for orchestra: reformulating Messiaen's notion of color, reformulating Scelsi's deconstruction of sound, these musical canvases achieve a clarity, poise, and richness comparable to the late nineteenth century canvases of visual artists like Redon, Matisse, and Gaugin. They represent the discarding of an obsolete poetics in a surge of youthful vision and vitality. These first period works, based on the model of spectral resonance alongside signal processing models like Frequency Modulation (FM) Synthesis, echo, phasing, and reverberation,³⁷ tend formally to be through-composed, either from the beginning of a piece through to its end (as in *Mémoire-érosion*) or from the beginning of a section through to its end, with each section presenting a new process (as in Treize couleurs du soleil couchant). In such process music, once the work is up and running, one often has the impression that, like a plant moving in germination through several stages of bifurcation and offshoots, the innate logical implications of Murail's initial musical figure are auto-extrapolating as the internal force of sound courses through the laid out framework. This manner in which Murail's poetics facilitates sound's emergence suggests Heidegger's description of poiesis: "Every occasion for whatever passes beyond the nonpresent and goes forward into presencing is poiesis, bringing-forth [Her-vor-bringen]."38

Two world premieres performed in twenty-four hours by Ensemble l'Itinéraire in the spring of 1976 heralded the new musical current. On Thursday March 4, 1976, at Sylvia Monfort's Nouveau Carré in the Marais in Paris, Grisey's *Partiels* (1975) was premiered; the next day, Friday March 5, 1976, at Jean-Etienne Marie's Semaines Musicales Internationales festival in Orléans, Murail's *Mémoire-érosion* (1975–76) was premiered (under its initial name, *Feedback*). "It was never anything planned or conscious," Murail says of the common movement that was the *courant spectral*; "it just happened." "Mile there was undoubtedly an element of happenstance—Murail and Grisey, with similar interests, meeting in Messiaen's class; the Domaine Musical folding and Ensemble l'Itinéraire appearing at just the right moment to take over its State subsidy, and so on—nonetheless, the circumstances were ripe for such a movement. An important factor was the complex legacy of serialism: on the one hand, derided for how it tended to neutralize harmony and to encourage academic formalism over freer artistic imagination; on the other hand, in-

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stilling in Murail and others an insistence on high technical rigor in developing not simply a set of novel techniques and effects but an internally consistent *écriture*. "'Spectral' doesn't mean using the harmonic series," Murail says: "spectral means working on the sound, and frequencies, and techniques like frequency modulation [W]hen I have used the spectra in my music most of the time they were created by calculation, not by imitating any sound." This frequential conception of harmony, alongside periodic repetition, was the basis of Murail's first period compositional framework.

Sables is the transitional work into that period. Commissioned by Harry Halbreich for the 1975 Royan Festival (where it was performed by the Orchestre National de France), Sables, like earlier works, is based on a continuous texture without distinct sections; now, though, the texture is clarified in places through the use of a simple harmonic series. Sables opens with a long string crescendo, with divisi strings in thirty-six parts in a cluster moving by glissando; after two minutes the cluster clarifies into a spectral-harmonic chord on a low E fundamental in the double basses. After this spectral chord has been sounded for a minute or so, an ascending movement continues in much of the orchestra, and the spectral chord all but liquidates in a flurry of tremolo. "I attempted a global sound with the orchestra," Murail says. "The individuality of the instruments vanished completely into the fused sound of the orchestra. In a certain sense, this piece was made up of a single sound that lasted for the duration of the piece. Here, one can begin to see the connection with Scelsi's music."40 At Royan, responses as usual were various. Audience members lauded it as a new approach to orchestral composition (Michaël Levinas), 41 saw in it an overt association with the French tradition (Roger Tellart), 42 praised its "mysterious timbral variations" and "cosmic majesty" (Jacques Lonchampt), 43 bemoaned its lack of thematic material (Albin Jacquier), 44 considered it as a spiral that never returns exactly to where it began (Hugues Dufourt), 45 and seemed to suggest a stylistic similarity with Grisey (Pierre Petit). 46 Murail simply remarks that "as usual some people criticized the piece and others loved it. I think for lots of people this sort of music was shocking."⁴⁷ For the occasion Murail wrote a long program note, more manifesto than simple program. As Murail's first theoretical statement, it has value in displaying the development of Murail's thought. 48 The main tenets of spectral music are here in basic form: an audition-based compositional framework, replacing the idealist acoustical absolutes of pitch classes with the moment to moment relativity of perceptual material; a musical surface replacing motivic development with continuous differentiation; a music not analytic but synthetic in conception. In justifying the reintroduction within a posttonal framework of the regulative principle of harmonicity, Murail touches on the relation of this new harmonicity to common practice tonality:

This harmonic system uses the only reference points that are objective and "scientific": that is, natural resonances and white noise (symbolized by the cluster). The harmonic thread which results from this is itself also in permanent evolution: there is not at any given moment "a harmony" but rather a process of harmonic transformation always in progress. Of course, these processes sometimes allow "classified" chords to appear, with relations of an octave and so on; but this is not a return to the past! There's nothing to compare to Ravel, Debussy, or Rameau.

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Nevertheless, the same causes produce the same effects, and the same principles lead to sonorous results that sometimes might be neighbouring. 49

Murail here coyly implies the possibility of a new *écriture*: an open compositional system, facilitated by sound analysis tools and founded on the insights of contemporary acoustics. Murail would return to that prospect in the 1980s.

Mémoire-érosion is a prototype of these new principles. A quasi-étude dimension is even hinted at by the work's initially setting forth within a spectrum on C. Murail draws on his early experiences with electronics to simulate (or, as Éric Humbert-Claude says, to "transcribe")⁵⁰ the effect of an electronic echo unit applied to notes played sporadically by a horn. Each time the horn plays a note or brief figure, it echoes around the ensemble, at first in a simple way but gradually with chaotic, "erosive" elements creeping in that tend towards noise. 51 In terms of the logic or *écriture* it opens up, this simulation in *Mémoireérosion* and Murail's other first period works is the pretext for creating a process by which the musical canvas is filled by auto-generating, self-proliferating material (Example 5). Herein is evinced Murail's notion of a relativistic music, wherein, in the manner of a semiotic process, each sound image has inscribed within it the sound image that has gone immediately before. Mémoire-érosion's repetition is not simply the repetition, then, of a self-contained sound: it is the repetition of the very act of repetition, an operation whereby sound proliferates recursively. The music's wild expansiveness is, paradoxically, a consequence of drastically reducing the compositional parameters to the harmonic spectrum and periodicity. The auditory interest lies not in the literal repetition of the horn's material but in the way the processural writing generates the unforeseen: unfamiliar figures that could not have been reached other than by way of the ostensibly familiar (as per Valéry's description, guoted earlier, of formal rules that "excite [the artist] to discoveries to which complete freedom could never have led him").⁵²



Example 5. Sequential repetition with gradual deviation in Murail's *Mémoire-érosion*.

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Territoires de l'oubli, the first spectral work for solo piano, is similarly as much focused on the appearing and disappearing inherent to sound as on sound's spectral constitution.⁵³ Its opening follows Murail's familiar strategy: a sonic image (here, a repeated, accelerating B-C minor ninth gesture leading into a broken spectral chord) is presented several times in sequence, establishing a virtual image that enables the actual sound image each time to be slightly altered while retaining the same Gestalt; the process of change eventually forces a transition into a new section focused on a new sound image. This repetition of a well-defined sonic image creates an inertial frame of reference for the introduction of chaotic elements (such as at section E, where a chord based on a tritone is sounded repeatedly at length). In Territoires d'oubli, as well as with these echo effects, Murail worked with frequency calculations; Frequency Modulation (FM) harmonies feature prominently in *Ethers*, at certain points in which the amplified solo flute performer, singing and playing two different notes, creates complex harmonies which in turn "determine" the harmonic material played by the ensemble. The slowness and gradual unfolding of Murail's first period music—most overt, perhaps, in Treize couleurs du soleil couchant—allows the listener to "enter into the sound" (in the phrase used by La Monte Young and Scelsi) better to perceive the music's harmonic-timbral micro-fluctuations. The harmonic material of each of Treize couleurs's thirteen sections is determined by a specific dyad, which generates the rest of the pitch content through calculations using the ring modulation algorithm, gradually leading to the next dyad. The clarinet and flute play each section's two principles notes, while the strings, playing sum and difference tones, generate the drift towards the next section's basic material and the piano more freely ornaments the harmonic evolution.

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The resemblance of the title *Treize couleurs du soleil couchant* to that of Monet's series of paintings of the London parliament might lead some to consider it a neo-Impressionist work. Consistent with what was discussed earlier, Murail's view of his music's lineage is different:

Rather than impressionism I would more willingly speak here of symbolism. From the natural phenomenon of a sunset it is the structure, the temporal evolution that is retained: the way in which the colours and lights evolve and are transformed rapidly yet imperceptibly, imperceptible metamorphoses that lead into contrasting colours. 54

Murail's sympathy with Symbolism is evident not only in terms of programmatic imagery but in terms of form. François Sabatier's account of Symbolism suggests as much: "To those classical constructions demanding order and a progression leading eventually towards an anticipated term (... exposition/development/recapitulation) [Symbolist art] prefers structures that are free or founded on a principle of continuous metamorphosis."⁵⁵ Murail's music affirms flux; it does not simply comprise acoustic spectra but, more precisely, the auditory sensations that spectrally constructed sound images elicit. "It is not the colors that count," Murail has said, "but their coming together, and especially the aesthetic and psychological impact."56 This echoes a comment Mallarmé made on his poetics (with reference to the art of his friend Manet): "I am inventing a language which must necessarily issue from a very new poetics, which I would define in these two words: To paint not the thing but the effect that it produces. Verse must not, therefore, here be made from words but from intentions, and all the words efface themselves before sensation."⁵⁷ This is a point about Murail's music that is often overlooked. Given Murail's sympathy with Symbolism, it's worth looking closer at what, as Edmund Wilson writes, is a more complex artistic vision than its name might suggest:

The assumptions which underlay Symbolism lead us to formulate some such doctrine as the following: Every feeling or sensation we have, every moment of consciousness, is different from every other; and it is, in consequence, impossible to render our sensations as we actually experience them through the conventional and universal language of ordinary literature. Each poet has his unique personality; each of his moments has its special tone, its special combination of elements. And it is the poet's task to find, to invent, the special language which will alone be capable of expressing his personality and feelings. Such a language must make use of symbols: what is so special, so fleeting and so vague cannot be conveyed by direct statement or description, but only by a succession of words, of images, which will serve to suggest it to the reader. The Symbolists themselves, full of the idea of producing with poetry effects like those of music, tended to think of these images as possessing an abstract value like musical notes and chords. But the words of our speech are not musical notation, and what the symbols of Symbolism really were, were metaphors detached from their subjects. ⁵⁸

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Following this account, Murail's spectrally constructed synthetic sound images can be considered to correspond to symbols or figures. While seeking a point for point correspondence would be foolish, there is enough in common between Murail's poetics and those of, say, Mallarmé, to attest to a kinship. Might not the synthetic, free-floating sound images generated in Murail's works by spectral techniques—for example, in *Gondwana* an orchestral simulation of a bell peal—be considered musical cousins of Wilson's "metaphors detached from their subjects"?

At the 1980 Darmstadt Summer Courses (where *Treize couleurs* was performed twice), Murail gave the first full overview of his compositional framework. The theoretical backbone of Murail's lecture "The Revolution of Complex Sounds" is much the same as that of Dufourt's then-recent essay "Musique Spectrale" (1979). The revised view of sound afforded by contemporary science, Murail states, "necessitates a profound revision of traditional compositional techniques ... (by 'traditional' I include serialism, aleatoric composition, stochastic composition, etc.: techniques that continue to use antiquated grids of parameters) and of our very conception of the compositional act." Just as philosophers like Deleuze sought to reformulate the traditional concepts of metaphysics by facing them with the worldview of contemporary science, so Murail and his colleagues critiqued the inaccuracy of traditional music theoretical concepts like self-identical pitch when faced with the multiplicitous reality of sound on a small (spectral) scale as shown by contemporary acoustics:

a sound is not a stable and self-identical entity, as traditional notation might have us believe. Our entire musical tradition assumes a direct correspondence between the symbol and the thing. But sound is essentially variable—in the sense, of course, that a sound can never be repeated exactly, but variable also within its own unique lifespan. Rather than describe a sound by describing its "parameters" (timbre, register, volume, duration), it is more realistic, more in keeping with physical reality and perception, to consider a sound as a field of forces, each force pursuing its own particular evolution. ⁶⁰

The models and techniques Murail outlined in this lecture (echoes and loops, harmonic and inharmonic spectra, and so on) were not loose compositional ideas but organizational principles based on a consistent logic of sound and audition. These days, reflecting on his early writings, Murail says that he does not agree with all he said then. Nevertheless, alongside the performances at Darmstadt of *Gondwana* and *Treize couleurs du soleil couchant*, this lecture began to position Murail as a wider compositional figurehead, influencing a younger generation of composers like Kaija Saariaho (who attended Darmstadt in 1980), many of whom, like Murail, were associated with IRCAM in the 1980s. 62

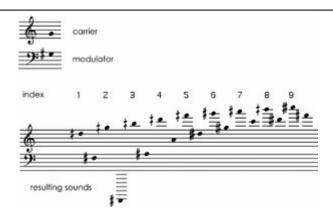


Figure 1. Frequency modulation synthesis material providing the pitch content for the opening chord of *Gondwana*.



Figure 2. Successive frequency modulation aggregates from the opening of *Gondwana*.



Figure 3. Successive harmonic envelopes of chords from the opening section of *Gondwana*, showing the gradual change from a bell shape to a trombone shape.

It was for Darmstadt in 1980 that *Gondwana* was commissioned. A period of compositional development that started in *Tigres de verre* with the simulation on the smallest scale of a resonant strike on the ondes Martenot, ended with the simulation on the largest scale of

a resonant strike by a whole orchestra in *Gondwana*. The culmination of Murail's first period, Gondwana opens with successive iterations of a synthetic chord modeled on the inharmonic spectrum of a bell, which gradually morphs into a chord modeled on the harmonic spectrum of a trombone. 63 Resonance, of course, has been a regular source of interest for French composers going back to Rameau, and resonant sonorities prominent in French new music from Varèse, Messiaen, Jolivet, Dutilleux, and Boulez down to Dufourt's Erewhon III (1972-76) and Risset's InHarmonique (1977) for soprano and tape (which latter work L'Itinéraire performed during its 1977-78 Paris season). 64 Gondwana, though, would prove iconic, and along with the opening of Grisey's Partiels its opening is the emblematic moment of early French spectralism. Practically all of Gondwana's harmonies were calculated according to the FM Synthesis algorithm (figures 1, 2 and 3), making it the clearest example up till this point of Murail's notion of frequential harmony, whereby organization according to pitch-class sets is wholesale replaced by modeling on specific frequential complexes, each frequency defined only in relation to the other present frequencies (rather than in relation to the ideal identity of the chromatic scale). As in Sables, the form of Gondwana is continuous with no silences and the transitions between sections imperceptible; as in Mémoire-érosion, iterative loops permeate Gondwana's texture, filling out the acoustic space (particularly in sections B, C, and E); as in La Dérive des continents, the titular imagery is of large-scale geological structures (though the title came only after the piece was finished).⁶⁵ While the world premiere at Darmstadt was not satisfactory, the French premiere a few months later by the Orchestre National de France at a Tristan Murail portrait concert (where it was programmed with Sibelius's Seventh Symphony and Murail's Les Courants de l'espace (1979) for ondes Martenot and orchestra) was much more successful. 66 One enthusiastic listener was Murail's old composition teacher, whose words must have been gratifying. "I believe you have realized what electronicism was for a long time searching for," Messiaen told Murail, "with a beauty of sonority rarely attained in contemporary music."67

The Use of New Computational Resources: Murail's Second Period, 1982-94

"IRCAM was exactly what we needed," Murail remarks. "Boulez didn't need IRCAM for his music, but we needed it." Starting with *Territoires de l'oubli*, Murail had been making tables of frequency calculations using a pocket calculator, and he had subsequently installed a personal computer in the office of his Bastille apartment to work more efficiently on the calculative dimension of his harmonic framework. At the same time, owing to the perceived threat it posed to L'Itinéraire's subsidized existence, Murail and some of his L'Itinéraire colleagues had avoided IRCAM's opening ("we were very frustrated by all that—we boycotted"). Nevertheless, it was the advent of Boulez's acoustical research centre in Beaubourg that led to the coining of the name *spectral music*, Dufourt having recognized the political necessity at that time for the young composers to coin a name for their distinctive musical current. Relations soon thawed, and following the preliminary gesture of Ensemble l'Itinéraire, from its 1978–79 season on, using IRCAM's *Espace de*

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projection as its regular Parisian concert venue, a rapprochement between the L'Itinéraire composers and IRCAM was broached, as Murail recalls:

I remember being at a soirée at the Goethe Institute. *Treize couleurs de soleil couchant* was commissioned by the Goethe Institute. And at the same concert, or same evening, Nicholas Snowman was there, who was at that time the artistic director of IRCAM. We started speaking, and I remember that it was a very "active" discussion.... After that I think he called me and I think he offered me a commission for Ensemble InterContemporain. I said, "Yeah, well, we could just do that." Then he said, "But maybe you would be more interested in doing something with computers." And this is how the idea came that we should organize a special "composer's session" for L'Itinéraire people.⁷⁰

Among the participants at this L'Itinéraire composer's *stage* at IRCAM were Murail, Grisey, Dufourt, and Pascal Dusapin. They did workshops and read workbooks by IRCAM members like Andrew Gerzso on the use of programs like 4X and Music X.⁷¹ While for some (notably Grisey) the experience of working with computer programming was unfulfilling, for Murail it was liberating, and it set the agenda for his subsequent working method and second period music. The compositional poetics he had established in the 1970s thrived when wedded to IRCAM's computational resources.

Whereas "The Revolution of Complex Sounds" delineates the compositional terms of his first period music, Murail's 1982 Darmstadt lecture, "Spectres et Lutins," delineates the basis in computer assisted composition of his second period music. The title of the essay —an untranslatable pun on the double sense of the words spectre (spectrum/spectre) and lutin (pixel/pixie)—indicates Murail's vision of the complicity of spectralism and computation: the effectiveness of computational analysis and synthesis when combined with the perceptivity-focused compositional framework Murail and Grisey developed in the 1970s. The essay opens with a summary of this new conceptual framework and the (psycho)acoustic ramifications of the Scelsean injunction that we move "beyond categories"; the stress here is on the micro-acoustic fluidity of harmony and timbre, better conceived via the single category of harmony-timbre. At times the tenor of Murail's statements on this immanent compositional organization is quasi-philosophical: "Frequency space is continuous and acoustical reality only has to define its own temperaments. If we push this reasoning to an extreme, the combination of pure frequencies could be used to explain all past categories of musical discourse and all future ones." 72 The shift is from the traditional essentialist view of pitch classes as having an identity separate from their realization to a new immanent view of frequencies as only ever defined through their actualization; that actualization pre-inscribes within frequencies' identity their relation to other actualized frequencies. Such philosophizing, generally not in Murail's character, 73 not only underpins Murail's argument for the organizational richness of the spectralist position but in a subtler way attests to Murail's inheriting the legacy of post-war serialism (as, indeed, was appropriate for a compositional movement now based at Boulez's

music research center). Political jostling notwithstanding, this was an immanent musical organization derived from the nature of sound, just as serialism had aimed to be.

2 3	1.0 0.2632	27 28	0.3454 0.34
4	0.5014	29	0.4836
5	0.5449	30	0.2855
6	0.5437	31	0.0524
7	0.9649		0.007
8	0.0044	32 33	0.0562
9	0.2341	34	0.0819
10	0.4108	35	0.168
11	0.8698	36	0.1121
12	0.7026	37	0.1963
13	0.7035	38	0.1002
14	0.0308	39	0.0435
15	0.2754	40	0.0132
16	0.0095	41	0.0319
17	0.2392	42	0.1195
18	0.1949	43	0.1208
19	0.3947	44	0.0266
20	0.2605	44 45	0.0502
21	0.6908	46	0.0198
22	0.1876	47	0.0298
23	0.3141	48	0.0066
		49	0.0108
24	0.0164	50	0.0245
25	0.0484		0.0012
26	0.0538		

Figure 4. Frequency analysis of a low C on a piano; formant zones are boxed and in bold.



Figure 5. Transposition of the low C spectrum onto an aggregate group on A^{\sharp} .

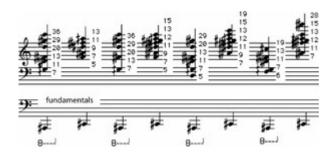


Figure 6. Alternating aggregates on A^{\sharp} and C^{\sharp} .

After outlining this theoretical matrix, Murail in the rest of the essay details the technical application of computation to spectral musical composition. His discussion is oriented around the example of *Désintegrations* (1982–83) for ensemble and tape, Murail's aforementioned first Ensemble InterContemporain commission. *Désintégrations* set a template not only for Murail's second period style but for French spectralism as a general move-

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ment. It is, in effect, a brief single movement symphony. That is not to say that it develops themes, that it is scored for a traditional orchestra, that it has a traditional sonata form, or that it expresses something on the part of its composer; rather, the symphonic designation owes to the fact that it is a unified, coherent, large-scale work in several sections, of high dramatic force, all of whose material derives from one germ, "the notion of the spectrum."⁷⁴ The spectrum creates material and formal coherence throughout; in this way, just as earlier twentieth century single movement symphonies like Sibelius's Seventh Symphony and Scriabin's *Prometheus or the Poem of Fire* express late tonality writ large, Désintégrations expresses spectralism writ large. The instrumental pitches and electronic frequencies are based alike on spectral analyses of specific instrumental sounds. The first section, for instance (see Figs. 4, 5 and 6), presents two aggregates (with fundamentals on A#0 and C#2; Murail uses the term "aggregate" rather than "chord" "because these combinations of sounds serve equally well in the synthesis of electronic sonorities as they do in writing instrumental parts"⁷⁵) based on the spectral analysis of a low piano note (C1); the material based on each of these notes processurally alternates before gradually, over successive iterations, converging. This section's formal arc describes a movement from relative harmonicity to relative inharmonicity, the eventual simultaneity of the two aggregates creating a complex, bell-like sonority. During this process, the two aggregates are augmented by the addition of further partials (some partials being transposed down an octave). In analyzing the piano note's frequency content, Murail observes the formant zones by which certain groups of partials stand out as relatively louder than others; he then uses this data to eliminate relatively insignificant partials from compositional consideration while selecting other partials—the more perceptually prominent ones—for transcription into instrumental pitches and thus musical notation (approximating to the nearest quarter tone). The initial instrumental iterations of the harmonic material in the woodwinds are sounded by relatively simple timbres (clarinet and flute in medium to low tessitura), while the later iterations introduce spectrally more complex instrumental timbres (oboe, bassoon, horn). To accentuate this increasing tension, the tape part begins to sound some of the partials of the double reed instruments' notes, sounding, in this way, "the harmonics of the harmonics" or secondary partials. Throughout Désintégrations, coherence between acoustic and electronic parts is ensured by the fact that pitch and frequency content are based on identical spectral material. In this way Désintégrations represents an unprecedentedly sophisticated realization of the Scelsean vision of a musical composition processurally based on sound's internal nature. At the time it was the most sophisticated production of Murail's poetics.

The 1980s saw Murail's spectralism and Boulez's IRCAM join forces. Murail regularly worked at the institution and instructed a new generation of composers, such as Marc-André Dalbavie and Philippe Hurel, in spectral techniques. It was at this point that Murail started writing programs to help create musical structures. Although his programming skills were initially relatively basic, he subsequently assisted in the development of IRCAM's *Patchwork* program; other computer programs Murail would go on regularly to use include OpenMusic and Max MSP. *Désintégrations* was premiered at IRCAM in March 1983; a couple of months later at IRCAM, as part of the week of events organized to cele-

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brate L'Itinéraire's tenth anniversary, Murail gave the first public lecture on spectralism, "Musique Spectrale, vers une nouvelle organisation sonore." In possibly the first published article by a critic to mention the term *musique spectrale*—"the notion developed first and foremost by Murail and Grisey, ... based on the exploration of resonances, inharmonic as well as harmonic"—Harry Halbreich, who had taken an interest in Murail's music since the early 1970s, described the compositional movement as "supported not only by works (sometimes masterpieces) but also by theoretical reflection of great novelty, without a doubt the first since the serialism of the 1950s to present a comparable coherence and robustness." Of that epithet that would become all but ubiquitous in the reception of his music, Murail wryly observes, "[y]ou cannot describe something with just one adjective". As a way of presenting one's music to the public, though, it was certainly expedient.

Murail's works of the subsequent decade stylistically by and large built on this basis.⁷⁸ The orchestral works Sillages (1985) and Time and Again (1985), commissioned for the Kyoto Symphony Orchestra and the City of Birmingham Symphony Orchestra respectively, evince the development of Murail's style since his last orchestral work Gondwana, a style based now not on radical continuity but on a multisectional form. ⁷⁹ On a smaller scale, Allégories (1990) for small ensemble and electronics fuses instrumental and electronic parts using a Yamaha TX-816 linked to an Apple Macintosh running Max MSP. La Barque Mystique (1993) in a programmatic way links spectralist color to the spectacularly variegated canvases of the Symbolist painter Redon; "the relations between colours are both complex and obvious," Murail writes, "since the matched colors are a priori incompatible."80 Serendib (1991-92) for ensemble and electronics, composed, like Désintégrations, for Ensemble InterContemporain, affords a clear view of how much Murail's poetics developed over the decade following that latter work. An intensely coloristic canvas, rife with ruptures and splinters (the serendipitous element Murail indicates in his title) Serendib came about through a composition process that would be next to impossible, Murail says, for the analyst to chart or rediscover without the composer's working notes and direct commentary.⁸¹ Its programmatic imagery of fantastical adventure (an allegory for the artistic process) also points ahead to Murail's third period music.

In regard to that poetics, Murail says spectralism is not simply a matter of creating aesthetically appealing harmonies: "Certainly some very beautiful sounds are found in spectral music, but also—essential corollary—some of the most horrible sounds produced in the history of music. It is not therein that the problem lies. The problem is to reintroduce within sound phenomena systems of hierarchy, magnetic attraction and directionality, allowing the creation of a musical rhetoric on new bases." The analytical exploitation of computational resources allowed progress in the deeper aim of establishing a new compositional system appropriate to contemporary science and technology, analogous in its operative logic and aesthetic malleability to common practice tonality but established on a more complex basis. Though Murail avoids the term "system" (probably owing to its connotative proximity to the stereotype of serialism as a systematic, and hence unartistic, approach to musical composition), "system" here need not be understood in terms of a closed, identity-based framework. 83 The conceptual replacement of essentialist pitch

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classes with immanent frequency complexes allows the emergence of an open system based not on pre-defined identities but on virtual potentialities regulated within any given composition according to the organizational principle of moment-to-moment harmonic distribution. Murail (who has on occasion gone so far as to state, provocatively, that "Harmony is music")⁸⁴ suggests as much in his 1980 and 1982 Darmstadt lectures:

Composers have often thrown themselves into the world of extended instrumental techniques with much abandon but little discernment. Rather than creating a coherent system for the integration of new instrumental sounds, extended techniques have been used as simple "sound effects," as exotic stunts, often inappropriate or casually tossed off. But if these sounds—their inner structures and the way they are produced—are studied with some scrutiny, more rational methods could be discovered that could well give rise to a new musical logic. This could lead to an ideal compositional method in which structures of sounds would correspond to musical forms. Both would adhere to the same criteria and follow the same principles of organization; there would be perfect reciprocity between the score's microcosm and macrocosm; the form-content distinction would be blurred and finally rendered meaningless, as one half of the opposition would be understood as a direct result of, and even identical to, the other.⁸⁵

Establishing links between these elements is a matter of conceiving "functions" in the mathematical sense. In principle it would suffice to describe the structure of durations and primary partials in order to describe *everything*. 86

Extending this, from the fact that harmonicity is an attribute shared by common practice tonality and spectralism it follows that some tonal forms might now be open to reinterpretation on a spectral basis. There is in principle no more reason to consider such art conservative than there is to consider Webern's use of sonata form, Cézanne's use of still life, or Mallarmé's use of the sonnet conservative. The lineage is the Modernist one of critical reinvention.

"Et le nuage est spectre, et le spectre est nuage": Murail's Third Period, 1995-present

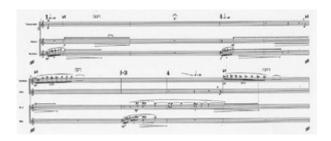
Having developed a compositional framework in accord with his artistic aims, and having subsequently refined that framework through computational resources, Murail in his third period began to engage in a more overt way with the longer Western art music tradition. ⁸⁷ General characteristics of Murail's third period music are autobiographical allusions; melodic elements; a reengagement with traditional forms; allusions to previous classical works, to literature, and to art; and favoring a psychological rather than a structural image of form. Murail's third period approach to musical form mirrors the process of psychic splicing—he balance within one's psyche of a multiplicity of heterogeneous ele-

ments (precedents for this subjective idea of musical form are to some degree Mahler and especially Debussy).⁸⁸

An early example of this allusive form, the reintroduction of melody and the partial re-embrace of tradition is L'Esprit des dunes (1993-94) for ensemble and electronics, commissioned by IRCAM for Ensemble InterContemporain. 89 L'Esprit des dunes opens with two woodwinds (oboe and flute) alternately sounding a repeated melodic phrase: a chromatic run of notes ascending and then descending, each statement of the phrase varying in pitch content while keeping a similar melodic contour, the different statements being separated by fermatas. Alongside these live woodwinds, the synthesizer at times responds with a ghostly, virtual version of the continuously varying woodwind phrase. On an overt level, the woodwind melody has a distinctly exotic air, accentuated by an evocative electronic simulation of desert winds. On a more subtle level, though, the woodwinds phrase perhaps bears a ghostly resemblance to the solo flute opening of Debussy's Prélude à l'après-midi d'un faune (1891-94), which similarly traces a chromatic contour, descending and then ascending rather than the other way round (Examples 6 and 7). Although the resemblance is in all likelihood coincidental, it is fitting, given that L'Esprit des dunes was premiered in the centenary year of Debussy's orchestral Prélude, and given that, from this time on, other of Murail's works contain explicit allusions to Debussy: for example, Feuilles à travers les cloches (1998) for flute, violin, cello, and piano and Réflets I. Spleen (2013) for orchestra. 90 In general Murail's third period works underline his connection to the longer French tradition (as with his colleague Grisey's Vortex Temporum).



Example 6. Opening flute phrase from Debussy's Prélude à l'après-midi d'un faune.



 ${\it Example~7.~Opening~of~Murail's~L'Esprit~de~dunes}.$

Like Debussy, Murail's attitude to tradition has been ambivalent. When learning the piano as a teenager he had little taste for the Haydn and Beethoven he was obliged to learn, finding only Chopin passable;⁹¹ and unusually for a student at the Paris Conservatoire in the 1960s, he passed straight into Messiaen's composition class without having to take the ordinarily mandatory courses in *écriture* or music history. "I never studied the history of music, nor musical analysis as such I was never inculcated with any tradition, so I

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don't feel burdened by it. I think things like musical analysis can be a danger for the composer, because they can drive your mind into pre-set paths, and one can end up being dependent upon them, however distantly. Conversely, it's also possible ... that the inculcating of tradition can lead to the opposite—i.e. an excessive reaction against it."⁹² In many of his third period works, such as the piano concerto *Le Désenchantement du monde* (2012) and *Lachrymae* (2011) for alto flute and string quintet, Murail has engaged with traditional forms. In the case of *Lachrymae*, an exquisite work written in a rondo form, the combination of spectral harmonies and traditional form creates a strange air of anachronism or hauntology, as if the music were at once archaic and contemporary, a simulacrum of the past. "When I compose I really want to discover new territory of some kind," Murail comments, "discover something of some kind, otherwise I'm not interested For me at the moment novelty is going back to old forms and seeing what else you can do with them. And I think that's quite interesting because I think it's not being exploited as far as it could be exploited." The reimagining of the old form is its absorption into Murail's system of poetics.

One of the first works from this period is Le Partage des Eaux (1995) for orchestra. Its compositional process involved analyzing the sound of waves breaking and tidal backwash (this analysis was done in Patchwork, a program allowing a temporally refined mode of spectral analysis). These maritime-themed spectral structures are orchestrated and, in a manner typical of Murail's music since Désintégrations, the acoustic instrumental textures are enriched with electronics (in the initial score, a Yamaha TX816). In addition to its technical sophistication and coloristic extravagance (the opening passage, for example, sees a Scelsean splitting of a single note on the strings into an ensemble harmonytimbre, an iridescent acoustic wash), Le Partage des Eaux features music-historical and autobiographical allusions. In his program note, Murail relates the orchestral score to those of the late nineteenth and early twentieth centuries, as a sort of update on that period's efforts towards maximal opulence (in this regard Murail cites the examples of Strauss, Debussy, and Ravel). More discreetly, the title of the work alludes to a key event from this time in Murail's life: the composer and his family's emigration across the ocean from France to the United States where Murail was to take up a position as Professor of Music at Columbia University. 94 The last section showed how spectral écriture establishes in principle the terms for a reengagement with classical forms and tropes. In expressing his recent attitude towards composing orchestral music, Murail indicates how he thinks spectralism might facilitate a renewal:

In this day and age, how do we make the orchestra really resound? Happily or not, one knows well enough how *not* to make it ring out. But how do we re-envisage the way the orchestra is heard today, just as Debussy or Richard Strauss managed to do in their time? How can we re-access the richness and ductility the orchestra possessed at the end of the nineteenth and beginning of the twentieth century, without at the same time resorting to outmoded formulas? These questions are ultimately similar to those that are raised in relation to harmony: how to recover the power of tonal harmony, but by other means. Spectral techniques are for me obviously part of the response. Gérard Grisey used to speak of "instrumental synthe-

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sis": that term can also be considered one possible definition of orchestration. Allied with the highest mobility of my formal and harmonic language, such techniques have, I believe, allowed me to approach a response with *Le Partage des Eaux*. The orchestration of this work is based on techniques of analysis and synthesis, which produce new sonorities, all while situating themselves in a certain way within the extension of that "grand orchestration" I have just mentioned.⁹⁵

Spectralism's modelling technique of instrumental synthesis is envisaged here as a new approach to orchestration. Murail's aim is not a retreat into the past but the wiping away of historically moribund material and rhetoric for a renewal of that force the historical material possessed in its original moment (which, despite their music's great difference, is something in common with Lachenmann's effect). In essence there is an attempt at a renewal of the tradition avoiding any rhetorical derivativeness: an echo of the dodecaphonic attempt to reinvest the language of Western classical composition with an internal logic and a corresponding affective force: a new poetics. "One composer told me in the past," Murail says, "about *Winter Fragments*, that it was a new form of symphonic poem. Why not?" ⁹⁶

Most recently these tendencies have been directed into the composition of two cycles, Portulan (1998-2011) for chamber ensemble and Reflections/Refléts (2013-present) for orchestra. The title of each cycle has multiple resonances, autobiographical being chief among them. The title Reflections, says Murail, is "mostly about memory"; although "here Reflections means also refléts: reflections like in a mirror, when you see an image. But with a mirror it always distorts; it could be stretched or it could be unclear, hazy. And these reflections can [also] be of different times." Each work in Reflections refers variously to a place, object, or time of personal significance to the composer. The first piece in the cycle, Reflets I. Spleen adapts a setting Murail composed when seventeen of a Baudelaire poem; the original piece was "for five instruments, so of course we can enlarge that to the orchestral dimensions [and] it becomes something else." As well as being a distorted reflection of this older piece, and as well as being a "symphonic poem" (Murail's term) on Baudelaire's poem—the different sections of the work reflect the different sections of the poem—Reflets I contains allusions to Debussy, both to Nuages, as Murail says, and to Jeux. The tolling bells of Baudelaire's poem ("Des cloches tout à coup sautent avec furie/ Et lancent vers le ciel un affreux hurlement") elicit a percussive orchestral counterpart; but they cannot help but suggest, too, the bell-modeled chords from throughout Murail's oeuvre (most famously, Gondwana). Aside from these identifiable references, other allusions in Murail's spliced forms are of more private significance. In the middle of Reflets II. High Voltage, for example, Murail generates harmonic spectra from two fundamentals —the frequency of electrical voltage in Europe and the United States respectively. "So there is a modulation from G to B-flat, which is in fact 250 Hertz and 60 Hertz." The work was composed around the time of Murail's return from the Unites States to live in Europe.

Reflections is ongoing at the time of writing, but Portulan is completed. A portulan is the name of "a map for seafaring used before the compass. Orientation was done by looking at signs on the coasts. That's why they are very beautiful, because they are full of details of the coasts—most of the time very distorted, of course. And there are lots of lines which details all you can detail with these landmarks. Quite often there is a lot of imagination: you can see sirens or dragons or whatever." Alongside this quasi-Rimbaudean realm of imaginary maps, creatures, and countries, the title "refers to travel, to having different experiences," which has been a prominent aspect of Murail's life in recent decades. The title, as in the earlier Serendib, presents journeying and adventure as an analogy for the artistic process. Perhaps more importantly than its other connotations, the title Portulan has private significance as the name of a collection of poetry by Murail's father Gérard Murail. "It was published when I was a teenager, so it's one of the first books of poetry of his that I could appreciate." Somewhat typical of Portulan is the brief Dernières nouvelles du vent d'ouest (2011) for viola, horn, piano, and percussion, which contains allusions to Messiaen and to Debussy's La Mer, while alluding at the same time to Murail's experience of living in the United States, a country the idea of which in his youthful minda dream"—was revealed by his adult experience to be "kind of a mirage". It is from Gérard Murail's Portulan, too, as the reader might recall, that Murail's first significant work, Couleur de mer, took its title and epigraphs. The Portulan cycle in this way also serves as an internal resonance spanning the extent of Murail's compositional oeuvre.

Conclusion: "A little bit of time in its pure state"

Murail's compositional development from the late 1960 to the 2010s has been presented herein as the development of a personal system of musical poetics. Poetics here does not mean "poetic content" as opposed to formal construction; it means a framework for artistic composition in which means and ends are in accordance. Murail's onus is not on the recreation of transient images but on the use of such images as sensations eliciting in the listener a deeper effect. As Guy Lelong has pointed out, the respective techniques of Mallarmé and of the spectralists are similarly concerned with simulacra and structural reflexivity. 97 Murail's conjuring of the simulacrum of a bell at the beginning of Gondwana can in this regard be seen as sympathetic with the continual imagistic metamorphoses of a poem such as Mallarmé's "Victorieusement fui le suicide beau...." Extending this—and integrating Murail's third period movement into an aesthetic probing past memories and symbols charged with autobiographical resonance—one might reflect on the post-Symbolist movement, whereby Mallarmé's apprehension through poetry of the Idea led eventually into the autobiographical recherche of Proust's great œuvre. Although he had been a critic of Mallarmé's obscurity, Proust fused the ideal realm of Symbolism with the novel form, creating a vast novel about the recovery, through art's aesthetic sensation, of the reality of time and the self (a herald of which is Proust's quasi-Symbolist description of the pre-sleep state in the first paragraph of Swann's Way). "The shifting images of the Symbolist poet, with their 'multiplied associations,' are here characters, situation, places,

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vivid moments, obsessive emotions, recurrent patterns of behavior."⁹⁸ One inspiration for Symbolism's approach to language was, of course, music (specifically, Wagner), and thereafter the Symbolist aesthetic of transience returned to music through Debussy. Loosening the fixation on formalism, one can see that it is this lineage that Murail's poetics inhabit. Murail's later music revisits this ground from a contemporary context defined by contemporary science and Information Technology's vast potential for sound analysis and manipulation. But at base it expresses the inner personality and vision of life of its composer.

Following his periods of establishment and development, Murail in his later music (which is, as he says, still preoccupied with research of the unexplored)⁹⁹ has turned to spliced forms, *reflections*, and the interrelation of sound, psyche, and the self. This was seen at the outset of this chapter in *Winter Fragments*. Sound as sensation—the ringing of a bell, the playing of a familiar musical motif—can awaken a heightened awareness of time and of the deeper self; even if, as the end of *Winter Fragments* seems to suggest, "this optical illusion which brought back to me a moment of the past incompatible with the present cannot last."¹⁰⁰ In the latter stages of Proust's *Recherche* (articulating a post-Symbolist position), the protagonist Marcel realizes that only art has that power, denied to everyday linguistic communication, of expressing the real being of that self that is singular yet multiple. Marcel's realization comes while listening to an unpublished Septet by the fictional composer Vinteuil:

But is it not the case that these elements, this final residue which we are obliged to keep to ourselves, which speech cannot convey even from friend to friend, from master to pupil, from lover to mistress, that this inexpressible thing which reveals the qualitative difference between what each of us has felt and has had to leave on the threshold of the phrases which he uses to communicate with others, something he can do only by dwelling on points of experience common to all and consequently of no interest to any, can be expressed through art, the art of a Vinteuil or an Elstir, which makes manifest in the colors of the spectrum the intimate make-up of those worlds we call individuals, and which without art we should never know?¹⁰¹

In Murail's oeuvre, the harmonic spectrum, channelled effectively into a personal poetics and style, conjures no less a texture of the self.¹⁰²

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Notes:

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- (2) There are some similarities between Murail's use of varied cellular fragments in his third period music and Boulez's technique of heterophony. See Edward Campbell, *Boulez, Music and Philosophy* (Cambridge: Cambridge University Press, 2014), 209–18.
- (3) Igor Stravinsky, *Poetics of Music in the Form of Six Lessons*, trans. Arthur Knodel and Ingolf Dahl (Cambridge, MA: Harvard University Press, 1947).
- (4) Paul Valéry, "The Course in Poetics: First Lesson," in Brewster Ghiselin, ed., *The Creative Process: A Symposium*, 92–106 (Berkeley/Los Angeles: University of California Press, 1954), p.92.
- (5) Valéry sets out his notion of poetics in a schematic way: "All may be summed up in this formula: that in the making of a work, an act comes in contact with the indefinable. A voluntary act, which in every one of the arts is very complex, often requiring long labor, the most absorbed attention, and very precise knowledge, must adapt itself, in the making of art, to a state of being in itself quite irreducible to a kind of definite expression, which does not refer to any localizable object, but which may itself be determined, and achieved by a system of uniformly determined acts; all this resulting in a work whose effect must be to set up an analogous state of being in someone else—I do not say a similar state (since we shall never know about that)—but one analogous to the initial state of the producer." Paul Valéry, "The Course in Poetics," 104–5. This final remark, as will be seen, is close to Murail's stated aesthetic position with regard to his aims for his music.
- (6) From a poem by Gérard Murail, quoted in Tristan Murail, "Couleur de mer," Personal Website of Tristan Murail, accessed September 1, 2017, http://www.tristanmurail.com/fr/oeuvre-fiche.php?cotage=TR1344.
- (7) Given its relevance, the passage is worth quoting in full: "[G]radually, and on the authority of very great men, the idea of a sort of legality crept in and took the place of what had been, at first, recommendations of empirical origin. Reason put rigor into the rules. They were expressed in precise formulas; the critic armed himself with them; and this paradoxical result followed, that an artistic discipline which set up reasoned difficulties in the way of the artist's impulses came into great and lasting favor because of the extreme facility it offered in judging and classifying works, by simple reference to a code or well defined canon. These formal rules offered a further facility to those who wish to produce works. Very strict and even very severe conditions relieve the artist of a number of the most delicate decisions and of many responsibilities in the matter of form while they sometimes excite him to discoveries to which complete freedom could never have led him." Valéry, "The Course in Poetics," 92. A similar sentiment is expressed in Boileau's lines, "Aimez donc la raison; que toujours vos écrits / Empruntent d'elle seule et leur lustre et leur prix." Boileau, "Ars Poetica," trans. Sir William Soame, in The Art of Poetry: The Poetical Treatises of Horace, Vida, and Boileau, ed. Albert Stanburrough Cook (Boston: Ginn and Company, 1892), 159-222, p.161.

- (8) Of Leibowitz, whom he characterised as an exemplar of this negative tendency, Boulez said: "imprisoned by academic techniques ... he could see no further than the numbers in a tone row." Quoted in Joan Peyser, *Pierre Boulez: Composer, Conductor, Enigma* (London: Palgrave Macmillan, 1976), 39 and 44.
- (9) "Around 1967-68, it was the serialist atmosphere that prevailed within the Conservatoire. ... The academic mind-set in the end took over serial music. ... It was a case of a type of peer pressure students exercised on each other." Tristan Murail quoted in Boivin, La Classe de Messiaen (Paris: Christian Bourgeois, 1995), 164. The French musical term écriture has no direct equivalent in English. On a basic level it reflects the division in conservatoire education between interpretation, studied by performers, and écriture, studied by composers. On a deeper level écriture doesn't just have the mundane sense of setting ink to paper but signifies the music-compositional rationale harnessed within and through notation (thus in tonal music écriture covers the rules of harmony, voice leading, and counterpoint).
- (10) Quoted in Eric Dahan, "Tristan Murail, maître spectral `a Marseille," *Libération*, May 22, 2002. Accessed May 4, 2017, http://next.liberation.fr/culture/2002/05/22/tristan-murail-maitre-spectral-a-marseille 404345.
- (11) "Couleur de Mer recuperates the stylistic elements of that epoch (12 tone scales, fragmentation, certain abuse of the percussion instruments...) but recycles and subverts them for other purposes." "Couleur de mer," Tristan Murail, Personal Website of Tristan Murail, accessed September 1, 2017, http://www.tristanmurail.com/en/oeuvre-fiche.php? cotage=TR1344.
- (12) Like Ravel's *Gaspard de la nuit* (1908) and Dutilleux's *Tout un monde lointain* (1967–70), each movement in *Couleur de mer* uses a line of poetry as an epigraph.
- (13) "Couleur de mer," Tristan Murail, Personal Website of Tristan Murail.
- (14) Tristan Murail, "Entretien avec Tristan Murail: propos recueillis par Pierre Michel," in *Tristan Murail, Compositeurs d'aujoud'hui*, ed. Peter Szendy, 29–58 (Paris: L'Harmattan/IRCAM, 2002), 32.
- (15) Murail's works at this stage, says his class-mate Georges Couroupos, "already appeared very highly developed, and the first who was interested by them was Messiaen himself." This was in part due, Couroupos says, to Murail being "much more productive" than his classmates. Georges Couroupos, email to the author, April 16, 2013. *Couleur de mer* was commissioned by the Maison de la Culture in Le Havre, whose president from 1964 to 1968 was the composer and pedagogue Max Pinchard (1928–2009), a friend of Murail's father Gérard Murail and an ex-teacher of Murail's at the Lycée du Havre. The concert, performed by Diego Masson's Ensemble Musique Vivante, was Murail's first premiere in a place other than the Conservatoire de Paris, and was filmed by the ORTF for a future episode of the program *Écran musical* (though in the end the broadcast did not happen).

- (16) This and other biographical details in this section are from Thierry Alla, *Tristan Murail*, *la couleur sonore* (Paris: Éditions Michel de Maule, 2008).
- (17) Jean Boivin, leaving his source anonymous, writes that on Murail's entry to Messiaen's class the young composer "composed in style we are told, very close to that of Messiaen, which bothered the latter quite a bit. 'I cannot say to him that he writes badly, since he writes my music!' [Messiaen] supposedly declared one day to a student in private." Though we may doubt the veracity of this recorded speech (Murail's being the top student doubtless elicited competitiveness), Murail readily admits the similarity of his first official composition and Messiaen's style. Boivin, *La Classe de Messiaen*, 387. Raymond Gayneux mentions arriving late one day for Aubin's Composition class and hearing through the door of Messiaen's class a piano work by Messiaen. Later, he says, he realised that it was not a work by Messiaen but by one of his pupils. Gagneux, "PODCAST: le Mai 68 de Raymond Gagneux," Qobuz, accessed September 1, 2017: http://www.qobuz.com/fr-fr/info/Qobuz-info/Rencontres/PODCAST-le-Mai-68-de-Renaud12948.
- (18) Tristan Murail, quoted in 'Répétition publique et débat autour de "Couleur de mer" de Tristan Murail, 'Havre presse, May 14, 1969.
- (19) "Semaine musicale O.R.T.F., Concert de musique contemporaine à la Maison de la Culture Havre: Diégo Masson crée une œuvre du Havrais Tristan Murail," in *Havre Press*, Unknown date (photocopy held at the Centre de la documentation de la musique contemporaine (CDMC) in Paris). *Couleur de mer* was Murail's first work to be performed in the United States, in April 1978 by the soloists of the New York Philharmonic conducted by Gunther Schuller, on which occasion it received high praise in the *New York Times*: "Perhaps the most important [work] was 'Couleur de mer' for 15 instruments by Tristan Murail, a 31-year-old Frenchman who composed this atmospheric study in shifting timbres and harmonies nine years ago. It is typically French in its primary concern for sensual effect and in the calculated precision of its gestures. The score is also an extraordinary technical accomplishment for such a young composer, who obviously possesses a highly-refined sense of instrumental colour." Peter G. Davies, "Music: The Perspective Encounter," *The New York Times*, May 1, 1978.
- (20) Tristan Murail, "Lecture at Ostrava Days Festival (excerpt)." Accessed January 1, 2015 (no longer online at the time of writing, September 1, 2017), http://www.ocnmh.cz/days2003 lectures murail.htm
- (21) This quotation and the next, Boivin, La Classe de Messiaen 386-87.
- (22) The 1971 jury comprised Messiaen and Xenakis. "[W]e submitted a file with several pieces. And I think I won because of *Altitude 8000*. I remember Xenakis was very positive about it." Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (23) Tristan Murail, Altitude 8000 (Paris: Editions Transatlantiques, 1970).,

- (24) This quotation and the next, Tristan Murail, *Cosmos Privé* (Paris: Éditions Rideau Rouge) (since withdrawn). The work was premiered on June 30, 1973, Rome, by the RAI Symphony Orchestra conducted by Boris de Vinogradov.
- (25) "sense too definite cancels your / indistinct literature." Stéphane Mallarmé, "Toute l'âme résumée," in *Collected Poems and Other Verse*, trans. E.H. and A.M. Blackmore (Oxford: Oxford University Press, 2006), 211.
- (26) Reproduced in Tristan Murail, "Couleur de mer," Personal Website of Tristan Murail.
- (27) The program note of *Le Lac* (2001) for ensemble, for example—a work the harmonic content of which is based on spectral analysis of sounds associated with a lake—states: "Every day, every hour, the lake has a different light, a new mood. It is ever present but ever changing, reflecting and magnifying the incessant movement of the seasons and climates. It is a geometric place for thoughts and looks, a modest symbol of the universe." Tristan Murail, "*Le Lac*," Personal Website of Tristan Murail. Accessed September 1, 2017, http://www.tristanmurail.com/en/oeuvre-fiche.php?cotage=27680.
- (28) Murail first met Scelsi when Murail wrote and performed a piece for ondes Martenot for the well-known French-American dancer Muriel Jaër (born 1930); during the same program she danced to another piece which piqued Murail's interest, *Xynobis* (1964) for solo violin by Scelsi, who was in attendance. Alla, *Tristan Murai*, *la couleur sonore*, 20. See also Muriel Jaër, "Entendre la danse avec Giacinto Scelsi Au cœur du mouvement," in *Giacinto Scelsi aujourd'hui*, ed. Pierre Albert Castanet (Paris: CDMC, 2008), 8.
- (29) The sketches for Ligeti's Cello Concerto (1966)—a work whose opening, in orbiting around one sustained pitch, sets a template for Lontano and Lux Aeterna—show that the concept for that work's first movement was, in part at least, inspired by Scelsi's Quattro Pezzi su una nota sola. See Richard Steinitz, "Genesis of the Piano Concerto and Horn Trio," in György Ligeti: Of Foreign Lands and Strange Sounds, ed. Louise Duchesneau and Wolfgang Marx, 174-75 (London: Edition Peters, 1966), and Matthew Mendez, "Ligeti Contra Scelsi," Soundproof Room (Paris: Éditions Salabert, 1983), last updated January 21, 2015, http://soundproofedblog.blogspot.ie/2015/01/ligeti-contra-scelsi.html. Among his musical peers, Scelsi felt himself closest to Xenakis: "The music of Xenakis is currently the most powerful music I know," he said, "but in a direction opposed to my own". Giacinto Scelsi, Les Anges sont ailleurs..., ed. Sharon Kanach (Arles: Actes Sud, 2006), 145. Makis Solomos has outlined various parallels in the respective careers of Scelsi and Xenakis; for example, Xenakis dedicated the score for Metastaseis (Boosey & Hawkes, 1967) to Maurice le Roux, who in 1959 in Paris also conducted the world premiere of Scelsi's Quattro pezzi (su una nota sola). See Makis Solomos, "Deux visions de la 'vie intérieure du son': Scelsi et Xenakis," in "Scelsi incombustible," special issue, Filigrane. Musique, esthétique, sciences, société (June 28, 2012), accessed August 18, 2014, http:// revues.mshparisnord.org/filigrane/index.php?id=504.
- (30) Tristan Murail, "Scelsi, De-composer", trans. Robert Hasegawa, in *Contemporary Music Review*, vol. 24, no. 2/3 (2005):173–180.

- (31) Tristan Murail, quoted in Georges de Saint Vulfran, "Tristan Murail: Perspectives du 20e siècle," *Panorama Musique*, no. 38 (November-December 1986): 13.
- (32) See Pierre Boulez, "Possibily...," in *Stocktakings from an Apprenticeship* (Oxford: Clarendon Press, 1991), 135, and Pierre Boulez, "Incipit," in *Stocktakings from an Apprenticeship*, 215. Robert Piencikowski suggests that Scelsi played the same role for the composers of the *courant spectral* as Webern played for the serialists (private conversation with the author).
- (33) "Musique d'aujourd'hui au Festival de Royan," *Le Guide Musical*, April 27, 1974. The program further indicates the tentative orientation towards spectralist process: "The viola is like a skin, a bark on the outside of the orchestral mass. To the movements the orchestra sets into motion, it first opposes its inertia, then reacts at a delay, reproducing the orchestra's subterranean tremors and develops them, sometimes amplifying them up to a paroxysm." Quoted in Alla, *Tristan Murail*, 79.
- (34) This quote and the next, Tristan Murail, in conversation with the author, Salzburg, January 16, 2014. Although Murail dos not elaborate, the tenor of these conversations might be gauged by some remarks by Grisey and Murail's classmate Georges Couroupos. Courourpos recalls how Grisey spoke "of the interest that composers like Xenakis and Risset held for him; he involved me in his researches on the harmonic spectrum and how it could be exploited for a new conception of composition." Georges Couroupos, email to the author, April 16, 2013.
- (35) Quoted in Alla, Tristan Murail, 81.
- (36) Arthur Rimbaud, "A une Raison," in *Collected Poems*, trans. Martin Sorrell (Oxford: Oxford University Press, 2001), 270.
- (37) For an extended analytical overview of these works see Dominic Garant, *Tristan Murail: une expression musicale modélisée* (Paris: L'Harmattan, 2001).
- (38) Discussing the nature of technology, Heidegger links *physis* and *poiēsis*. "Not only handicraft manufacture, not only artistic and poetical bringing into appearance and concrete imagery, is a bringing-forth, *poiēsis*. *Physis*, also, the arising of something from out of itself, is a bringing-forth, *poiēsis*. *Physis* is indeed *poiēsis* in the highest sense." Heidegger's discussion is suggestive for spectralism's mimesis-based compositional framework. Martin Heidegger, "The Question Concerning Technology," trans. William Lovitt, in *Martin Heidegger: Basic Writings from "Being and Time"* (1927) to "The Task of Thinking" (1964), ed. David Farrell Krell, revised and expanded edition, 311–41 (London and New York: Routledge, 1993), 317.
- (39) This quotation and the next two, Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (40) Tristan Murail, "Scelsi and L'Itinéraire: The Exploration of Sound," *Contemporary Music Review* 24, no. 2–3 (April–June 2005): 182.

- (41) "I remember about *Sables* [Levinas] said, 'It's a very new thing,' you know, 'It's a new way of orchestration,' or whatever; which I thought was a bit exaggerated." Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (42) While generally praising *Sables*, Tellart gave "a warning nevertheless: while Murail is perfectly right to refuse a certain laboratory aesthetic and to want to take up again the Ariadne's thread of the French tradition, he sometimes seems to go round in circles in this composition." Roger Tellart, "Festival de Royan: Mais où est la fête d'antàn [sic]?" La Croix, April 7, 1975.
- (43) Jacques Lonchampt, "Festival de musique contemporaine: Quarante-deux créations à Royan," *Le Monde*, March 25, 1975.
- (44) Albin Jacquier, "Un départ sans bousculade," La Suisse, March 27, 1975.
- (45) Hugues Dufourt, in conversation with the author, Paris, February 20, 2014.
- (46) Petit writes that while Murail's work was pretty, sensitively and finely composed, these touches were wasted on a "demented immobility"; he ends his review by saying that "one might be inclined to attribute this music to a Tristan Grisail [sic]...." Grisaille in French means "grey" or "colorless"; the ellipsis suggests he is associating Murail and Grisey. Grisey's orchestral work Dérives was a high-profile premiere at Paris's Festival d'Automne six months earlier, performed by the same orchestra; the opening section of Sables and the closing section of Dérives, each based on the spectrum of a low E, sound similar.
- (47) Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (48) During the festival Murail and Levinas were also interviewed on *France Culture* by Claude Samuel ("we explained our ideas"). Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (49) Tristan Murail, "Note for *Sables*," Festival d'art contemporain de Royan 1975 program booklet. Murail also states in this program note that he has begun work on a cycle, a triptych comprising *Torrents*, *Sables*, and *Désirs*. *Torrents* was to be scored for orchestral brass and a piano with electronic echo effects; *Désirs* was to be scored for orchestra and a separate percussion section; and *Torrents*, Murail writes, "will be a fanfare (a call [appel])." Murail may have been sufficiently impressed by Levinas's recent *Appels* (1974) to consider writing his own *appel*. (As indeed Grisey may have been: the Gérard Grisey Collection at the Paul Sacher Foundation contains sketches for a work under the heading *Atelier I Appel*, similar in conception to *Mémoire-érosion*, which was never completed.) This projected cycle of works was never composed.
- (50) See Éric Humbert Claude, "Les Modèles perceptuels par simulation instrumentale dans les œuvres de Tristan Murail," in *Vingt-cinq ans de création musicale contempo-*

raine: l'Itinéraire en temps réel, ed. Danielle Cohen-Levinas (Paris: L'Itinéraire/L'Harmattan, 1998), 111-21.

- (51) Murail says he was aware of minimalist music since the beginning of the 1970s. "I was interested by the fact that these people were making a completely different music from serialism and all these things, that they were using triads.... But I was not so impressed by the music itself. I was more interested, not necessarily by the pieces, but by the concepts of Steve Reich. He wrote things about transformations, processes, which were quite close to things I was doing at the time." Tristan Murail, in conversation with the author, Salzburg, January 16, 2014. A French composition analogous in conception is Luc Ferrari's mixed electroacoustic work *Tautologos 3* (1970), a repetitive work based on the simulation of echoes. For a description see Luc Ferrari, "Program note for *Tautologos 3*," reproduced in *Encyclopedie Nouveaux Medias*, accessed July 1, 2017, http://www.newmedia-art.org/cgi-bin/show-oeu.asp?ID=150000000083489&lg=FRA.
- (52) Grisey writes: "It is the process that is first; the process that manages the mutation of the sonorous figures and which leads to the ceaseless creation of new ones. Even I am astonished to discover at what point the sounds engendered by the process exceed, and by far, those that one could imagine *a priori*, abstractly and outside of time." Gérard Grisey, "Devenir du son," in *Écrits ou l'invention de la musique spectrale*, ed. Guy Lelong and Anne-Marie Réby (Paris: MF, 2008), 27.
- (53) For a detailed examination of the work, see Marilyn Nonken, *The Spectral Piano:* From Liszt, Scriabin, and Debussy to the Digital Age (Cambridge: Cambridge University Press, 2014), 75–85.
- (54) Tristan Murail, "Treize Couleurs du soleil couchant," Personal Website of Tristan Murail, accessed September 1, 2017, http://www.tristanmurail.com/fr/oeuvre-fiche.php? cotage=TR1505.
- (55) François Sabatier, La musique dans la prose française. Evocations musicales dans la littérature d'idée, la nouvelle, le conte ou le roman français des Lumières à Marcel Proust (Paris: Fayard, 2004), 414.
- (56) Pierre Rigaudière, "Tristan Murail, Retour aux sources," *Diapason*, June 2010, 12-13. The passage is worth quoting in full:

Rigaudière: Is [your work] not the definition of an Impressionist approach [demarche]?

Murail: Not particularly. If you look at a canvas by Poussin, Watteau, or Rembrandt, the representation can influence the way in which you will look at it. But the fact that Poussin uses quite lively colors is much less important than the global effect. It is not the colors that count but their comings-together [rapprochements], and especially the aesthetic and psychological impact. Music is not only its composition [l'écriture]; it is perceived

- (57) Quoted in Jean-Michel Nectoux, *Mallarmé*, peinture, musique poésie. Un clair regard dans les ténèbres (Paris: Adam Biro, 1998), 188.
- (58) Edmund Wilson, Axel's Castle: A Study of the Imaginative Literature of 1870-1930 (New York: Charles Scribner's Sons, 1931), 21. See also my endnote xxvi.
- (59) Tristan Murail, "The Revolution of Complex Sounds," *Contemporary Music Review* 24, no. 2-3 (April-June 2005): 121.
- (60) Tristan Murail, "The Revolution of Complex Sounds," 122. Much of the early spectralist discourse, with its terminology of forces, becomings, the virtual and actual, and immanence, has a Deleuzean air. That Dufourt's "Musique Spectrale" in places is redolent of Deleuzean metaphysics is unsurprising given that Dufourt was Deleuze's pupil (though Dufourt told me he favors the epistemological perspective of these insights over their metaphysical dimension). When asked about his former teacher, Dufourt said that Deleuze's thought did not influence his own. His memories of Deleuze as an aggregation supervisor in Lyon are not fond ones; Deleuze, he says, was a negligent supervisor of his students. Hugues Dufourt, in conversation with the author, Paris, February 20, 2014. Grisey had been reading Deleuze since at least the beginning of the 1970s; his teacher Jean-Étienne Marie frequently cites Difference et Répétition and probably introduced Deleuze to Grisey. See Pierre Rigaudiere, "De l'esprit au spectre: mysticisme et spiritualité chez les compositeurs du courant spectral," Circuit: musiques contemporaines 21, no. 1 (2011), and Jean-Étienne Marie, L'Homme Musical, (Paris: Librarie Arthaud, 1976).
- (61) "Writings are always dated; one must take them as the state of a reflection or an attitude at a certain moment in time. Nothing is fixed: there are lots of things I would say and that, besides, I do say differently today." Quoted in Rigaudière, "Tristan Murail, Retour aux sources."
- (62) A contemporary report of Murail and Grisey's 1980 Darmstadt lectures can be found in Roger Heaton, "30th International Ferienkurse für Neue Musik, Darmstadt, July 10 to August 5, 1980," *Contact: A journal of contemporary music*, no.22 (Summer 1981): 33–36.
- (63) Murail gives a detailed analysis of *Gondwana* in Tristan Murail, "Villeneuve-lès-Avignon Conferences, Centre Acanthes, 9-11 and 13 July 1992," *Contemporary Music Review* 24, no. 2-3 (April–June 2005): 187–267, see esp. 205–11.
- (64) See Gérard Mannoni, "'L'Itinéraire' à la recherche d'un second souffle," *Le Quotidien de Paris*, December 8, 1977. The affinity of Risset's and Murail's methods is suggested by Risset's program note: "[T]he adventure in sound suggests a metaphorical scenario with the notions of emergence, life, and death. ... *InHarmonique* exploits certain possibilities the computer offers to apply compositional control down to the level of the sound: to compose the sound itself. ... The tape part introduces imaginary bells, composed like chords, which are then diffracted in fluid textures (by transforming the temporal profile of the inharmonic components, without modifying their frequencies)." Jean-Claude Risset, "Program note for *Inharmonique* (1977) for soprano and tape," *Brahms Ircam*, accessed July

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- 10, 2017, http://brahms.ircam.fr/works/work/11499/. In the post-war years, resonance chords began to feature more in French music following the 1954 premiere of Varese's *Déserts* (1950-54) for fourteen brass and woodwinds and tape. Two composers seemingly influenced by *Désert*'s beautiful resonant sound blocks were Boulez, who wrote the program note for the premiere and whose *Poésie pour pouvoir* (1958) and *Don* (1960-1962, rev. 1989) suggest some influence, and Dutilleux, who visited Varèse at Radio France while the latter worked on the tape parts with Schaeffer and whose *Métaboles* features a recurring, decidedly Varèsean (and, Julian Anderson has argued, proto-spectral) resonance chord (Julian Anderson, "Timbre, Process and *accords fixes*: Dutilleux and his Younger French Contemporaries," *Contemporary Music Review* 29, no. 5 (October 2010)).
- (65) Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (66) "I wasn't very happy after the Darmstadt performance, it wasn't very good. But then a few months later it was played at this concert in Paris, and it was excellent; the recording is on the CDs which are still now for sale are from this concert." Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (67) Messiaen's full letter is as follows: "Dear friend, allow me to congratulate you with all my heart on your works, *Gondwana* for orchestra and *Les Courants de l'espace* for ondes Martenot transformed by the ring modulation of a synthesizer, and in dialogue with an orchestra. These are two truly astonishing works, to which I listened with joy and admiration. Not only does one hear all of the changes which you wished, which contribute to the originality of the form, but especially harmony and timbre are together reconceived, and reconceived by a true musician. I believe you have realized what electronicism was for a long time searching for, with a beauty of sonority rarely attained in contemporary music. An immense *bravo* for this magnificent music!" Olivier Messiaen, Letter to Tristan Murail, December 22, 1980, photocopy stored at the Centre de documentation de la musique contemporain (CDMC), reproduced in Alla, *Tristan Murail, la couleur sonore*, 19.
- (68) This quotation and the next two, Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (69) "I would say from a political-aesthetic point of view, L'Itinéraire had an image that was still vague [when I arrived]," Dufourt says. "It was not well defined. …Along with the political, it was necessary [for L'Itinéraire] to specify its aesthetic …, and in this sense—with IRCAM, with InterContemporain—to *radicalise*." Hugues Dufourt, in conversation with the author, Paris, February 20, 2014.
- (70) Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (71) Some notes from this stage are held in the Gérard Grisey Collection at the Paul Sacher Foundation, Basel, Switzerland.
- (72) Tristan Murail, "Spectra and Sprites," *Contemporary Music Review* 24, No. 2-3 (April–June 2005): 138.

- (73) On Bergson Murail has "memories from my philosophy class when I was at high school. My teacher of philosophy was a big fan of Henri Bergson; his classes were very boring!" He finds phenomenology more relevant with regard to his music: "I've read a little bit of Merleau-Ponty There's a book called *Phénoménologie de la perception* where there are some ideas or suggestions that correspond to some experiences I had, especially about memory, anticipation, the perception of present; all these things." Tristan Murail, in conversation with the author, Salzburg, January 15, 2014.
- (74) Tristan Murail, "Program note for *Désintégrations*," in Alla, *Tristan Murail*, pp.149-51, 149.
- (75) Murail, "Villeneuve-lès-Avignon Conferences, Centre Acanthes, 9–11 and 13 July 1992," 213. Murail gives a detailed analysis of *Désintégrations* in this lecture transcript, pp.211–32.
- (76) Harry Halbreich, "1973–1983: 10 ans de l'Itinéraire: l'aventureux groupe des musiciens de l'Itinéraire fêtait son dixième anniversaire," *La Croix*, May 27, 1983.
- (77) Tristan Murail, in conversation with the author, Salzburg, January 16, 2014.
- (78) With the exception of the since-withdrawn cycle *Random Access Memoires* (1984–87) for a small live electronics-based ensemble of electric guitar, drums, percussion, synthesizer, and computer an intriguing, evening-long work that, in seeking to fuse elements of notated composition with electronic rock, developed on some of Murail's 1970s work in compositions like *Les Nuages de Magellan* (1973) and L'Itinéraire's sub-group Ensemble d'Instruments Électroniques de l'Itinéraire (EIEI). Julian Anderson mentions *Random Access Memories* in his first published article in spectralism (Julian Anderson, "New Music Spectrum: Julian Anderson Reports on Recent Events in the French Capital," *Music and Musicians International* 36, no. 4 (December 1987)); see also Alla, *Tristan Murail*, 152–57.
- (79) *Time and Again* also features Murail's first explicit allusion to another composition from the Western tradition (something that would become more important in his third period) with a quotation of the female motif from Messiaen's *Turangalîla-Symphonie*, which, as Julian Anderson notes, gives the subjective impression of "distorted memories of half-remembered music". Julian Anderson, "*Time and Again* Note," Official website of Tristan Murail, accessed July 1, 2017, http://www.tristanmurail.com/en/oeuvre-fiche.php?cotage=28240.
- (80) Tristan Murail, "La Barque Mystique Note," Official website of Tristan Murail, accessed July 1, 2017, http://www.tristanmurail.com/en/oeuvre-fiche.php?cotage=27530.
- (81) See Edward Perraud, "Approche de la personnalité musicale de Tristan Murail, et analyse de la modélisation fractale de sa pièce SERENDIB" (DEA thesis, IRCAM/École des Hautes Études en Sciences Sociales, Paris, 1995).
- (82) Quoted in Thierry Alla, "From the construction of timbre to the disintegration of sound," trans. John Tyler Tuttle, sleevenotes of *Tristan Murail* Accord CD 472 511-2, p.5.

- (83) In *Penser la musique aujourd'hui*, Boulez refers to his aim as the elaboration of a compositional system: "I proceeded from the elementary to the most general level in order to stress that this was not a catalogue of more or less useful procedures, but an attempt to construct a coherent system by means of a methodical investigation of the musical world, deducing multiple consequences from a certain number of rational points of departure. I consider that methodical investigation and the search for a coherent system are the indispensable basis for all creation, more so than the actual attainments which are the source or the consequence of this investigation. ... This is certainly not an original thought on my part, for the claim that intelligence must participate in elaboration was formulated long ago in the field of poetry." Pierre Boulez, *Boulez on Music Today*, trans. Susan Bradshaw and Richard Rodney Bennett (London: Faber, 1975), 142–3.
- (84) Quoted in Jérôme Baillet, "L'esthétique musicale de Tristan Murail," in *Tristan Murail*, Compositeurs d'aujourd'hui, ed. Peter Szendy (Paris: L'Harmattan/IRCAM, 2002), 7.
- (85) Tristan Murail, "The Revolution of Complex Sounds," 132.
- (86) Tristan Murail, "Spectra and Sprites," *Contemporary Music Review* 24, no. 2–3 (2005): 137–47. On the idea of the open system Deleuze says: "systems have not strictly lost any of their living forces. There is today, in the sciences or in logic, the beginning of a theory of systems said to be open, systems founded upon interactions, that refuse linear causation and transform the notion of time. ... What Guattari and I call rhizome is precisely the case of an open system." Gilles Deleuze, "On A Thousand Plateaus," in *Negotiations*, 1972–1990, trans. Martin Joughin (New York: Columbia University Press, 1995), 32.
- (87) Victor Hugo, "La Trompette du Jugement," in Anthony Hartley, *The Penguin Book of French Verse 3: The Nineteenth Century*, 74–83 (Harmondsworth, Baltimore, and Ringwood: Penguin Book Ltd, 1968), 75.
- (88) The multiplicity of reference in Murail's third period musical images recalls Ezra Pound's description of the image in Imagistic poetry: "The image is more than an idea. It is a vortex or cluster of fused ideas and is endowed with energy." Quoted in Demetres P. Tryphonopoulos and Stephen J. Adams, eds., *The Ezra Pound Encyclopedia* (Westport/London: Greenwood Press, 2005), 124. The similarity between Murail and Debussy's approach to titles is clear from Jean-Michel Nectoux's account of titles in Debussy's music:

In Debussy's work titles have a dual role. They are for themselves the poetic memory of a moment or of a visual impression that sparked off his imagination; but they can be read also as the sign of his emotion, indicating in an elliptical way this or that register of his views, with the secret intention of orienting the listener in his imagination. His illustrative titles refer to art works he liked (*Danseuses de Delphes, Canopes, Poissons d'or*), if it is not simply a matter of simple illustrations (*Les Fées sont d'exquises danseuses, Ondine*) or even of a simple postcard (*La Puerta del vino*); more often still they refer to sights from nature: *Ce qu'a vu le vent d'Ouest, Brouillards, Feuilles mortes, Bruyères, Le Vent dans la plaine*; these are quite explicit, but many other titles are—deliberately—ambiguous: does the

Prélude *Voiles* evoke a canvas by Monet, Whistler or Manet, or the memory of real regattas, or, as has been claimed, the veils of Loïe Fuller whirling in the light of colored projections? Are the *Reflets dans l'eau* the memory of a moment of pure contemplativeness or an homage to Monet's *Water Lilies*? Such ambiguity seems to be deliberate, and Symbolist *par excellence*: "Let us insist that the beauty of an art work," Debussy wrote, "will remain always mysterious; that is, that one will never be able to confirm exactly 'how it is made.'"

Jean-Michel Nectoux, *Harmonie en bleu et or. Debussy, la musique et les arts* (Paris: Fayard, 2005), 224. With minor variations one could make the same comments of many of Murail's third period works.

- (89) L'Esprit des dunes is analyzed in detail in Dominic Garant, Tristan Murail, Les objets sonores complexes. Analyse de L'Esprit des dunes (Paris: L'Harmattan, 2011). Claude Ledoux makes some remarks about Murail and the poetic in regard to L'Esprit des dunes in Claude Ledoux, "From the philosophical to the Practical: An Imaginary Proposition Concerning the Music of Tristan Murail," trans. Joshua Fineberg, Contemporary Music Review 19, no.3 (2000): 41-65.
- (90) On Debussy Murail says: "I'm not sure he's that important for me, but sometimes we are—this is a very ambitious way to say things—we are working with the same kind of approaches to music. Sometimes I feel closer to Ravel than to Debussy in terms of, for instance, harmony and orchestration; maybe not form." Tristan Murail, in conversation with the author, Salzburg, January 15, 2014.
- (91) Dahan, "Tristan Murail, maître spectral à Marseille."
- (92) Murail, "Entretien avec Tristan Murail," 46-47.
- (93) Tristan Murail, in conversation with the author, Salzburg, January 15, 2014.
- (94) Grisey, who had already taught in the US academic system, wrote Murail a glowing letter of reference, praising Murail as "a true and authentic musical creator" with "an extremely attentive ear and an extraordinary harmonic science." Gérard Grisey, letter to David H. Cohen, July 7, 1998, in the Gérard Grisey Collection, Paul Sacher Foundation.
- (95) Tristan Murail, "Entretien avec Tristan Murail" 54-55.
- (96) This quotation and all those in the next two paragraphs, Tristan Murail, in conversation with the author, Salzburg, January 15, 2014.
- (97) See Guy Lelong, "L'Astreinte Sonore," *Entretemps*, no. 8 (1989): 5–12, and *Révolutions sonores: de Mallarmé à la musique spectral* (Paris: Éditions MF, 2010).
- (98) Wilson, Axel's Castle, 132.

(99) "Only now have I begun to feel as if I have obtained the technical means to carry out my dreams of adolescence: I imagined certain ambitious works, but lacked the capacity to realize them. With a piece like *L'Esprit des dunes* (1994), for ensemble and electronics, I feel that I have succeeded in doing something that I could have easily dreamed of doing when I was 20 or even younger. In a piece like that, there is research on the level of pure technology, but there is also musical research into the combination of sounds; this may not be immediately apparent, but so much the better. And while the 'poetic' side of the piece probably has an even greater impact than the spectral contents, the 'poetry' depends utterly on their careful construction. Creating this sense of research, newness, and 'avant-garde' while still maintaining a coherent and comprehensible musical discourse is my real goal." Tristan Murail, "After-thoughts," *Contemporary Music Review* 24, no. 2–3 (April–June 2005): 272.

(100) Marcel Proust, "Search of Lost Time: Finding Time Again," trans. Ian Patterson (London: Penguin, 2003), p. 181.

(101) Marcel Proust, "Search of Lost Time: The Prisoner and the Fugitive," trans. Carol Clark (London: Penguin, 2003), p. 236.

(102) The colour spectrum is also used by Bergson (Proust's cousin) to elaborate a concrete as opposed to an abstract concept of difference. Deleuze writes: "In those crucial pages devoted to Ravaisson, Bergson explains that there are two ways of determining what colors have in common. Either we extract the abstract and general idea of color, and we do so by 'effacing from red what makes it red, from blue what makes it blue, and from green what makes it green': then we are left with a concept which is a genre, and many objects for one concept. The concept and the object are two things, and the relation of the object to the concept is one of subsumption. Thus we get no farther than spatial distinctions, a state of difference that is external to the thing. Or we send the colors through a convergent lense [sic] that concentrates them on the same point: what we have then is 'pure white light,' the very light that 'makes the differences come out between the shades.' So, the different colors are no longer objects under a concept, but nuances or degrees of the concept itself. Degrees of difference itself, and not differences of degree." Gilles Deleuze, "Bergson's Conception of Difference" in Desert Islands and Other Texts, 1953-1974, ed. David Lapoujade, trans. Michael Taormina (Los Angeles/New York: Semiotexte(e), 2004), 43.

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