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Tristan Murail's Tellur

A Piece of Spectral Music and an Exploration of Compositional Possibilities for the Classical Guitar

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It would be easy for the music of Spectralist composers to be misinterpreted on account of the name given to their school of composition. The title "Spectralist" could bring to mind images of acoustic scientists peering at spectrograph read-outs of the harmonic spectra of different instruments, and then transcribing these spectra literally into the scores of their music, juxtaposing one aggregate of partials with another. This idea certainly captures an element of the Spectralist compositional process; nevertheless, to best understand the character of this branch of contemporary music, one must consider the larger developments in both twentieth-century compositional practices and acoustic technology which conceived it.

One of the major innovations which fuelled the development of "modernist" music in the twentieth century was the re-examination of the role of "color"—whether harmonic or timbral—in the compositional process. In "Prélude à l'apres-midi d'un faune," Claude Debussy used the distinct tone color of the

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¹ Viviana Moscovich, "French Spectral Music, An Introduction." Tempo, New Series, No. 200 (Apr. 1997): 21.

flute as a musical "topic" in its own right, an aspect of the music inextricably bound up with the notes on the page, and crucial to the overall effect of the music.² Later, Arnold Schoenberg implementing his principle of Klangfarbenmelodie—often distributed individual notes of a melodic line or gesture among different instruments (hence contrasting tone colors) in an effort to create melodic shapes that emphasized variation in timbre as well as variation in pitch.³ The use of harmony purely for its coloristic properties was also present in the music of Debussy, whose treatment of traditional triadic harmonies and rich seventh chords as distinct sound-objects helped to free harmony from its conventionally functional role. ⁴ This tendency to compose music with non-functional harmonic colors continued through the twentieth century, especially with French composers such as Erik Satie and Olivier Messiaen, described by Tristan Murail as a composer who likes to "color' time as it passes." 5

As this rising interest in both harmonic and timbral color took hold in Western art music, new technologies and techniques for acoustic analysis began to emerge. The invention of magnetic tape gave composers a new tool to explore, and early pioneers such as Pierre Schaeffer began exploiting the possibilities of the medium, cutting and recombining recordings of sounds from

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²David J. Code, "Hearing Debussy Reading Mallarmé: Music 'après Wagner' in the 'Prélude à l'après-midi d'un faune," *Journal of the American Musicological Society* 54, No. 3 (Autumn 2001), 509.

³ Alfred Cramer, "Schoenberg's 'Klangfarbenmelodie:' A Principle of Early Romantic Harmony," *Music Theory Spectrum* 24, No. 1 (Spring 2002), 3.

⁴ Roland Nadeau, "Debussy and the Crisis of Tonality," *Music Educators Journal* 66, No. 1 (September 1979), 73.

⁵ Tristan Murail, lecture from "The Ostrava Days 2003 Report," Ostrava Days Institute and Festival (August 18, 2003), available from:

http://www.ocnmh.cz/days2003_lectures_murail.htm, Internet, accessed 1 December 2008.

everyday life to form collages called *musique concrète.*" A handful of German composers, theorists, and mathematicians, working in the NWDR electronic music studio in Cologne, were more interested in new ways of producing sound. The composers working in this studio, including Robert Beyer and Herbert Eimert, created compositions purely made up of electronically generated impulses and sine waves, developing an approach called *Electronische Musik.* Additionally, some composers assembled tape pieces which borrowed from both schools—one of the masterpieces of this period, Stockhausen's *Gesange der Jünglinge*, mediates between the complex sound quality of recorded human speech and the pure sound of artificially generated sine tones, manipulating both the sound of the voice and the sine tones to create sounds that fall somewhere in between the two extremes.⁸

Against this historical background of technical innovation and the establishment of timbre as a compositional parameter came the Spectralist composers. Such composers as Hugues Dufourt, Jean-Claude Risset, Gérard Grisey, and Tristan Murail inherited the notion of "sound as an object" both from the work of early twentieth-century composers in timbral composition and from the "Musique Concrète" aesthetic of manipulating the sounds themselves, rather than working with the more abstract phenomena of notes on a page. Murail, like others of this school, was a composer interested in both of these lineages, and wished to use the technology available to him to further investigate the world of timbre as well as to explore methods of generating new

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⁶ Carlos Palombini, "Machine Songs V: Pierre Schaeffer: From Research into Noises to Experimental Music." *Computer Music Journal* 17, No. 3 (Autumn 1993), 15.

⁷ Lowell Cross, "Electronic Music, 1948-1953," Perspectives of New Music 7, No. 1 (Autumn-Winter 1968), 46.

⁸ Günter Peters, Mark Schreiber, "…How Creation is Composed:' Spirituality in the Music of Karlheinz Stockhausen," *Perspectives of New Music* 37, No. 1 (Winter 1999), 101.

sounds. In his piece Mémoire/Erosion, written in 1976, Murail imitates a feedback loop, a procedure where a sound is recorded onto tape and then subjected to a process of repeated playback and recording between two tape machines, so that the original sound eventually degrades into chaos and noise. 9 He divides his ensemble into a group of nine instruments (imitating the feedback loop apparatus) and a solo French horn (serving as the original sound source), and proceeds to develop the idea of this studio process into a musical structure. In Ethers, written in 1978, Murail applies the process of ring modulation—used in electronic signal processing to create additional overtones by combining two sine waves—to his treatment of the flute. 10 By instructing the flutist to sing a C#4 while playing a Bb5, Murail creates two additional pitches—an E5 and a D6—from the modulation process. In the case of Murail, then, it becomes clear that Spectral composition is not merely limited to representing harmonic spectra on manuscript paper. Spectral composers instead adopt a general approach to sound shaped by the new technology available to them, and use the analytical and generative processes made possible by these instruments as the formal and structural basis for their music.

TELLUR

In *Tellur*—written for classical guitar in 1977, after *Memoire/Erosion* and before *Ethers*—Murail exemplifies many of these processes using an instrument somewhat on the fringe of the classical tradition. Murail even indicates in his performance notes to the score that he wants the overall sound of the instrument to resemble, not the classical guitar popularized in concert halls by the likes of Andrés Segovia, but the *flamenco*

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⁹ Murail, Lecture from "The Ostrava Days 2003 Report." ¹⁰ Ibid.

guitar, a particular build of instrument belonging to an idiomatic "folk" genre with roots in the Gypsy culture of southern Spain. The flamenco guitar employs many "noisy" techniques in addition to those of the classical guitar, such as a vigorous strumming technique ("rasgueado") and a method of tapping the body of the guitar with the fingers or hand ("golpe")—explorations of the percussive possibilities and bright, harsh timbres of the instrument. At the surface level of the piece, many flamenco hallmarks are easily recognizable to those familiar with the art form, yet it is Murail's systematic treatment of these techniques and timbral colors, as well as his interpretation of their hidden potential, that takes this piece in an entirely new direction from the flamenco idiom.

Murail's chosen title serves as an accurate embodiment of the processes involved in the piece and helps explain its overall form. "Tellur" is the grammatical stem of the Latin word for "earth," yet it is also used today, in certain areas, as the name for the natural element Tellurium. Tellurium is "a semi-metallic element that occurs in a silvery-white brittle crystalline form of metallic lustre, in a dark amorphous form, or combined with metals and that is used especially in alloys and catalysts." By naming his piece after an element with the potential to assume highly dissimilar forms, Murail prepares the listener for the experience of hearing music which is consistent and continuous, yet which gradually arrives at opposite extremes of timbre, texture, rhythm, and dynamics. In composing spectral pieces such as Tellur, Murail imagines himself as a "sculptor in front of a large stone block which conceals a hidden form; a spectrum will thus be able to conceal forms of different dimensions which we can reveal according to certain criteria...this composition

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¹¹ Merriam-Webster Online Dictionary, s/v "Tellurium," http://www.merriam-webster.com/dictionary/tellurium, Internet, accessed 9 December 2008.

technique, from the whole to the unit, is opposed to the classical cellular construction technique." ¹¹² In this sense, one can gather that Murail thinks of both the composition and audition of a spectral piece such as *Tellur* as a study of one single, complex object, which, through varying treatments, can present a wide array of musical materials. The related mental image that Murail provides us—of achieving a wide range of forms and textures through the treatment of a single basic element, Tellurium—fits the piece nicely.

RHYTHM AND FORM

In terms of the general structure of the piece, Murail uses the letters A through G to designate important shifts in the work's developmental trajectory. As a composer who works "from the whole to the unit," however, Murail does not wish for these structural signposts to serve as formal divisions that break the piece into smaller sections. Instead, he informs the performer, in his preface to the score, that "a 'smooth' form should be achieved, a form made up of a series of 'ascents' (letters A, C, E, G) and 'descents' (B, D, F). The letters indicate only the points of reversal of the trends." The 'trends' Murail describes are immediately perceptible to the listener as extremes in dramatic intensity; 'ascents' usually culminate in dense clusters of notes played at a loud dynamic and with furious, energetic articulation, and 'descents' bring the music away from this extreme and towards quieter, more sparse textures. Murail wants the expressive range of the performer to complement these polarities of density and dynamic, and he urges the performer to display a "great range of expression, with violence and brightness

¹² Tristan Murail, "Questions de Cible," *Entretemps: (musiques contemporaine)* No. 8 (1989): 154

¹³ Tristan Murail, preface to *Tellur*, Paris: Editions Musicales Transatlantiques, 1978.

when the music is *forte* or accented, with great gentleness when *piano*."¹⁴

Even though Tellur cannot be said to have any sort of meter, or even a steady pulse acting in the work, rhythm is a prime concern for the composer throughout the piece. Rejecting the idea of chronometric time found in most classical music, with its even divisions of a consistent time value, Murail instead chooses to explore the possibilities of a logarithmic approach to temporal organization. In certain areas of the piece, the composer places articulations of chords or notes in temporal space according to a constantly accelerating or decelerating tempo. This is especially visible in the proportional notation used in the score, where one can see harmonies or notes written at increasing or decreasing distances from one another. Murail has, in fact, made a close study of the phenomenological and psychological effects of acceleration and deceleration, 15 and he indeed produces striking musical effects and changes in perspective through his manipulation of this "sliding" rhythm.

One effect of this technique, which strengthens the sense of continuous process and seamless transition throughout the work, is that it creates ambiguity concerning the perception of rhythm versus form. Section E, for example, technically falls under the category of an 'ascent,' as its trajectory includes a rising dynamic level, more complex harmonies, and an increased presence of noise over time, yet one of its principal features is the logarithmically-inspired deceleration of its main rhythmic pulse. This particular deceleration actually begins about halfway through section D, after the sixth string of the guitar has been tuned down to C#, and continues into the beginning of E (Fig. 1). As section E begins, we hear several low C# notes played in

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¹⁴ Ibid.

¹⁵ Julian Anderson, "In Harmony: Julian Anderson Introduces the Music and Ideas of Tristan Murail," *Musical Times* 134, No. 1804 (Jun. 1993), 322.

succession, the temporal distance between each articulation becoming greater as the music progresses.

Figure 1

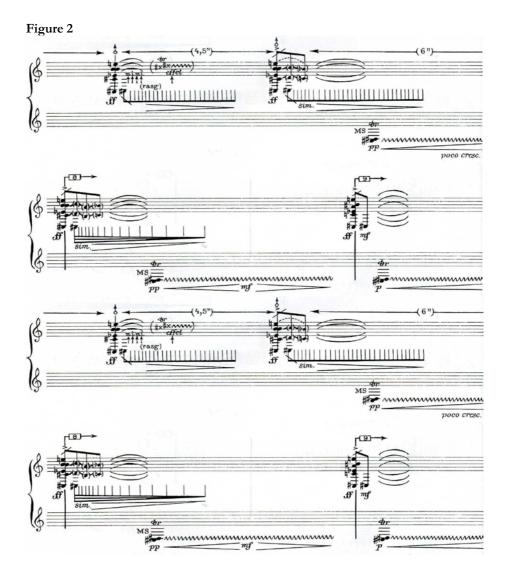


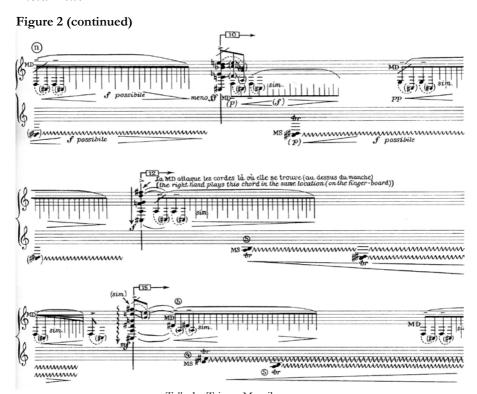
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This gradual *rallentando* continues as the C# is gradually transformed into complex vertical sonorities, so that over this entire process, the space between each articulation has grown from barely perceptible fractions of a second to a full second by the arrival at E. By this point, the composer has created a strong sense of continuity despite the lack of a regular pulse, as his adherence to a *consistent* process of deceleration and repetition of the prominent C# establish a pattern which the listener can begin to anticipate. In this sense, Murail is creating a form of perceptible rhythm—or, more accurately, invoking the *idea* of rhythm by consistent *rallentando*—in the music. Further into this section, however, two factors begin to compromise this sense of rhythm. First of all, the temporal space separating each C# harmony continues to grow wider—to 4.5, 6, 8, and eventually 15 seconds; these chords are now strung too far apart in time for

the listener to construct any meaningful relationships of rhythm, even if the pulses were to occur at regular intervals (Fig. 2). In addition, a rapid rasgueado strumming pattern begins to enter the texture in short bursts, soon accompanied by a trill in the left hand. This new development resets the listener's perspective, as the new, much quicker series of rhythmic pulses make the spaces between chords seem even more vast by comparison. Furthermore, the combinations of trills explored by Murail in these spaces between harmonies, as well as the more or less complicated sound masses they create, become a major developmental focus of the section. As a result, the C# harmonies, originally the vehicle of rhythmic development, now serve as "interruptions" or breaks in the otherwise continuous of quicker rhythmic activity. What Murail has accomplished, then, in this section is a sort of "crossfade" of rhythmic activity, which in turn allows the C# articulation to progress seamlessly from the role of a clear rhythmic pulse to a formal punctuation.

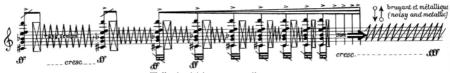




FORM AND SPECTRALIST APPROACHES TO DEVELOPMENT OF MATERIAL

Through his prolonged acceleration and deceleration of rhythm, Murail is able to imitate—in the medium of sound—the visual phenomenon of "zooming in" and "zooming out" on an object. The conclusion of section E provides an excellent example of the "zooming out" phenomenon. At Fig. 3, a sudden pause, made by quickly dampening the strings with the palm of the right hand, is inserted into the flurry of trills and rasgueado. This pause continues to recur, and the rate of these pauses begins to noticeably accelerate, thereby separating the rasgueado/trill combination into shorter and shorter segments. The segments become so short that the rasqueado, once a continuous stream of impulses, is now itself becoming reduced to a single impulse. The constantly accelerating rhythm pushes these impulses together so that, by the end of the system, a new, rapid stream of articulations is created by these impulses. This approach to developing musical material is far removed from the techniques of harmonic or motivic development employed in earlier historical periods, and appears closer in nature to the sorts of repetitive, mechanistic procedures Murail had encountered in his early work with audio technology. In this case, what Murail has created is an exciting auditory analogue to the experience of gradually moving from high to low powers of a microscope while examining an object through its lens-first seeing a detailed arrangement of particles, then seeing that arrangement reduced to a single object at a more distant focus, and finally watching that object become part of another arrangement of particles.

Figure 3



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In certain areas of the piece, Murail also "zooms in" on his material. Returning to the end of section D, we can see Murail's indication for the guitarist to begin slowing the rate of the rasgueado, so that the listener can begin to pick out individual articulations in contrast to the continuous, noisy strumming heard previously (Fig. 4). As the rallentando gradually slows the rhythmic pulse of the repeated C# discussed earlier, a crescendo begins to increase the dynamic level and intensity of each note. In order to maintain this crescendo to a fortissimo dynamic on the guitar, special right-hand techniques must be employed. Indeed, Murail indicates—in the second system of Fig. 4 (letter k)—that the note should be "violently struck with the face of the nail of the thumb." Soon after, at the *fortissimo*, he directs the player to use a Bartok pizzicato, whereby the string is actually lifted away from the guitar with the thumb and forefinger of the right hand and then released (to slap against the fretboard), creating an intense, bright, and loud attack used occasionally by guitarists for dramatic effect. These harsh attacks certainly provide a dramatic apex to the crescendo, but they also reinforce the "zooming-in" effect Murail aims to create with this particular deceleration. As opposed to the smooth, round tone associated with traditional classical guitar technique—whereby the player depresses the string with a finger of his right hand and then carefully moves through the string to release it and set it vibrating—the techniques called for here produce sharp, percussive attacks.

When the string is struck with the nail, not only is the note fingered on the fretboard heard, but a much higher pitch (a very high and very faint partial of the note played) also emerges from the length of string between the place of articulation and the bridge. In the midst of rapid articulation, such as a rasgueado, these pitches are easily blurred together as incidental noise, or are considered as part of the timbral palette the guitarist has at his disposal. As the rhythm decelerates, however, these incidental high frequencies become more present as sounds in and of themselves. Murail increases his focus on these "incidental" sounds of the attack with the switch to Bartok pizzicato. As the guitarist executes this technique, the sixth string of the guitar actually slaps back against the raised metal frets on the fretboard, creating a harsh attack, but also briefly stopping the string at a number of specific points along its length. One can hear some of the lower partials—the fifth, seventh, and ninth harmonics especially—emerging from the sharp attack. By decelerating the rhythm of the repeated C#, Murail has raised the power of his "microscope," so that the listener hears all of the phenomena surrounding the struck note in greater detail. Complementing this closer, more detailed "view" of the pitch is the performer's increased violence in articulation, which aids the perception of a finer resolution of the material by producing various harmonics from the single string, and thus opening up a new world of harmony within this single note.



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The development of section E has already been discussed as a continuation of the rhythmic trajectory of the section before it, but section E also continues to "zoom in" on the harmonic possibilities suggested at the end of the previous section by the Bartok pizzicato attack of the C#. At the beginning of this section, the listener continues to hear decelerating repetitions of the C#, still played with a Bartok pizzicato, but with the addition of the open B string. The B is actually articulated here by the left

hand—the flesh of the index finger striking the string as it extends "out away from the hand, like a finger flick" -- which carries with it an almost imperceptible attack, so that the note is heard more as a distant echo. The harmony of B and C# is played twice more in a similar fashion, though Murail indicates that the first B should "be struck approximately at fret II, the second around fret VI and the third around fret XII."17 As a result of this change in left hand position, with each flick, the index finger is striking the string in a place where it is able to vibrate more freely, creating a crescendo of the B note with respect to the low C#. The B reaches a *forte* dynamic by the third time it is played, and is then articulated by the right hand together with the C#. In the space of these four beats, Murail has brought the B (the seventh harmonic of the overtone series of C#) increasingly into the foreground, and then attached it to the C# to create a sparse harmony derived from the intrinsic harmonic composition of the low C#. A similar process begins on the next beat of the system, as a C# (an octave above, the second harmonic of the fundamental C#) and a B are played together immediately after the main pulse and at mezzo-forte. This second dyad grows closer to the harmony on the main pulse both in rhythmic proximity and dynamic level, until it begins to be subsumed into the main harmony at the beginning of the final system of Fig. 4. It is at this point that the left hand begins articulating new pitches through its flicking technique—first an E (a much higher nineteenth harmonic, though a consonantsounding minor third), and then the E and an Eb together (the ninth harmonic). This process of accumulation continues, eventually adding partials higher than the 20th harmonic and creating increasingly dissonant harmonies. Though it is not clear

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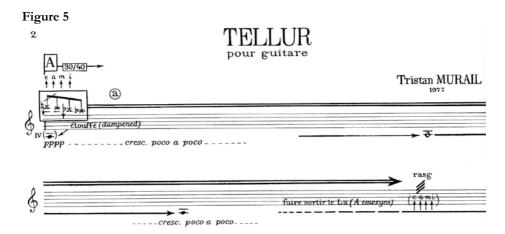
¹⁶ Murail, preface to *Tellur*.

¹⁷ Ibid.

how closely Murail was looking at actual harmonic spectra during the writing of this piece—or to what extent he was choosing pitches intuitively to build his chords—he nonetheless manages to establish two extremes on the continuum of consonance/dissonance, and then travel across this continuum by gradually expanding the inherent harmonic makeup of his original pitch.

SPECTRALISM AND THE FLAMENCO GUITAR

When introducing single important pitches throughout the piece, Murail continues to combine traditional techniques with a Spectralist aesthetic. At the very start of section A, for example, he gives instructions for the performer to press down on the 6th string with (presumably) the index finger of the left hand as if to play an A, and to dampen/mute the string with the rest of the hand (Fig. 5). The right hand, meanwhile, is executing a continuous rasgueado strumming pattern, in which the face of the nail of each of the four fingers hits the string close to the bridge, so that four distinct, faint, but audible pitches are produced from their percussive attack. At this point the A is "hidden" under the muting of the left hand and the listener can only hear dull percussive noises and the high partials of the concealed A note. The guitarist eventually releases pressure on the A so that the index finger is in a position to play an A harmonic (this is possible because the sixth string is tuned to F at the beginning), and then gradually releases the left-hand muting to allow this harmonic to emerge. As the rasgueado and the accompanying high partials continue, the finger touching this A harmonic is gradually pressed down again to create a full-bodied A note. The rasgueado continues for several more seconds, but gradually evolves into a classical tremolo, which involves notes being plucked and not struck; therefore, the high partials disappear altogether, leaving a warm, (relatively) pure tone.



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This process is similar in a way to the general plan of Ethers, where violin harmonics— high partials of the multiphonic acoustic model produced by the flute and heard later in the piece—begin at *niente*, but gradually crescendo, gain weight as full notes, and descend in pitch to introduce their respective fundamentals: the collection of pitches sounded by the flute multiphonic. In both cases, the foundation of these faint, high pitches is not revealed at the start, but unveiled later, as the final step in a process of arrival, a completion of the original acoustic event. In this way Murail is able to create an interesting and musically compelling large-scale progression using the static spectra of sounds and the acoustic processes that went into producing them. In the case of *Tellur*, Murail's ability to separate the upper partials from the fundamental and then gradually reunite them is quite a compositional feat, as the composer only has one instrument at his disposal. To accomplish this gradual process he treats the right and left hand as separate instruments

bringing forth different spectral components of the A note, but then brings these two "instruments" together to articulate the same fundamental pitch.

Similar moments occur throughout the piece, with Murail deconstructing elements of the flamenco guitar idiom and using these tools to articulate a Spectralist musical form which—as a product of the constantly evolving musical material of the piece—appears as both a dynamic and continuous structure. Though not always dealing explicitly with exact graphs of different spectra, Murail focuses on the parameters of the flamenco guitar's unique sound world with an analytical ear and appreciation for multiple perspectives, overwhelming us with a wash of rasgueado noise, and sometimes letting us experience the harmony contained within a single note's harmonic spectrum. With Tellur, Tristan Murail has explored a wide range of novel, Spectralist compositional concepts, and given listeners a completely new angle from which to appreciate the sound of a traditional musical art form.

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