

Aaron Hayes, “The Phenomenological Turn in Romanian Spectralism”

Ana-Maria Avram was a Romanian composer who, along with her husband and musical partner Iancu Dumitrescu, continued to develop the rich tradition of spectralism that emerged in Romania almost as soon as the style was christened in the late 1970s. Avram and Dumitrescu performed extensively in Europe and the United States with the Hyperion Ensemble, a group with expertise in improvisation and fluency in performing with live electronics, which both composers used extensively. Avram died unexpectedly in 2017 at the age of 55. Prior to her passing, Avram had generously responded to a number of my questions in preparation for this chapter, particularly regarding her philosophy of music, compositional techniques, and some specific notes on her work *Voices of the Desert* (2005–2008). Avram was very much a composer-intellectual, studying aesthetics at the Sorbonne, and though her ideas are not widely published, it seems as though her compositional practice lived intimately with her interest in a few interrelated questions, particularly about inherited biases of the notation-performance relationship; her own notion of spectral ‘transformation’; and the danger of over-abstraction that the scientific study of sound falls prey to. The following chapter does not hope to express precisely Avram’s own ideas on these topics; rather it is my attempt at triangulating a position from which these multiple issues can be viewed as a single discourse on one aesthetic problem, which I come to call the question of musical stability.

Dumitrescu’s and Avram’s music represents a trajectory of spectralism that takes its musical point of departure from the understanding of sound as a dynamic process.

¹ Such a conception of sound would likely be accepted by most composers affiliated with spectralism. It is the extent to which Dumitrescu and Avram emphasize the transience and flux of musical material that distinguishes the most notable philosophical premises surrounding their music. Motivating this emphasis is their concern that technologically oriented modes of thought, ones that spectralism has historically been drawn to, are unequipped to capture the fully dynamic character of musical temporality. In particular, Dumitrescu has often referred to Edmond Husserl as an important inspiration in his approach to the medium of sound, in response to the heavily technological emphasis associated with French composers.² For Dumitrescu, instead of spectrographic analysis, phenomenological reduction provides the primary mode of creative engagement with spectralist material. The matter is not so much an opposition between two paradigms, but a reprioritization of aesthetic values and compositional techniques driven by a different relationship to technology. It was natural that spectralism became established in a context like Paris, where the manipulation of timbre and the analysis of sound were mediated by impressive technological advancements at IRCAM. However, the epistemological foundations that drove those expansions did not fully capture the phenomenological level of musical attention to sound that Dumitrescu and Avram sought. Composers in Paris no doubt remained concerned with the experience of sound—indeed a number of composers have mentioned some concern for a phenomenological level of musical sense. Brian Kane argues that spectralism as a whole, especially following Gérard Grisey, was directly indebted to post-Husserlian thought via the work of Pierre Schaeffer.³ For Dumitrescu and Avram, however, this connection was not enough. Avram claimed that there is an important loss of meaning when relying on any abstract models of sound for compositional purposes.

When one refers to the acoustic reality of the spectral sound...observed in its inner life, with all the details, one can see this reality is transformational: parameters are not fixed but they evolve in time, they appear and disappear in a specific temporality which constitutes the inner reality of the sound. In that regard,

spectral music, the one which really deals with real spectral realities and not with model[s] and fakes, has to take into account this phenomenological aspect, this unique temporality and to endeavor toward it.⁴

This is not to say Avram or Dumitrescu avoided a close relationship with electronic music. Much of their work includes tape or computer-generated sounds in an acousmatic style. Their theoretical position, though, sheds light on a broader issue: that a rigorous phenomenological approach to spectral music would provide a much-needed descriptive element to a field deeply indebted to technological mediation. Phenomenology provided an important source for these composers' compositional motivations, and so it is a logical starting point for an approach to better analytically articulate some of the most compelling musical forces used in their music, and perhaps in spectralism in general.

Dumitrescu and Avram's proximity to Husserlian thought invites a productive approach to perceptual issues that arise in the attention to the malleability of timbre, texture, and the boundary spaces between musical parameters that characterizes this style. In particular, Avram and Dumitrescu's music poses three main challenges that prevent typical analytical tools from being applied to this music. First, relying on graphic notation and calling for moments of improvisation means there is not always specific motivic or thematic material, no particular pitch or rhythmic patterns that follow a clear path of development or repetition. Second, when particular moments in the music do stand out as formally or structurally significant, there is not always a clearly specific referent within the chaotic cloud of events that coheres into something distinct, no pattern that could be labelled and bounded off from its surroundings in any clear manner. Finally, the musical developments of these vague, indeterminate fields cross over those traditional boundaries that spectralism had already broken down: distinct voices within a harmonic simultaneity might collapse into the partials of a single tone, for example; or a pattern crossing the threshold between frequency heard as pitch and fast repetition of individual pulses heard as rhythmic pulse.

The way in which phenomenology might offer some response to these questions was only hinted at by the composers but I will argue that a strictly Husserlian phenomenology only supplies a preliminary step toward a more intricate theoretical framework that is needed to address these challenges through a sort of transformational analysis of the movement between instability and stability. This chapter begins by describing in more depth some of these limitations that a strictly Husserlian influenced theory would confront in the analysis of Avram's music. Using her work *Voices of the Desert* to illustrate the analytical challenges that her style of spectralism presents, the central issue becomes the difficulty of identifying persistent motivic or thematic referents, while accommodating graphic notation, improvisation, and cross-parameter relations. The second part of the chapter explores how phenomenology has dealt with the breakdown or explosion of normal mundane things and turns to more recent phenomenological discussions that grapple instead with relative levels of 'stability.' I then return to *Voices of the Desert* and analyze how timbral development occurs through fields of relative stability rather than between discrete motivic 'things.'

Phenomenology of Transformation

Avram's notion of the 'transformational reality' of sound that she mentioned in her statement above developed from her interpretation of the earlier spectralist aesthetics of Hugues Dufourt, Horatiu Radulescu and other composers she studied with.⁵ While the American tradition of transformational analysis after David Lewin did not influence her ideas, there is a

coincidentally shared interest in both Husserl and the generalized meaning of ‘transformation’ that offers a useful starting point for a phenomenological analysis of Avram’s work. However, there is a particular bias within Lewin’s Husserlian influence towards the specificity of a referent, what Husserl referred to often simply as ‘X’ and what others simply discuss as a ‘thing’ or ‘object’ in the most general sense. Lewin, for example, presents some level of thingness as axiomatic: “I prefer to believe that the statements we make in connection with a perception are *about* something, which is to say about some *thing*.”⁶ Lewin’s emphasis on the stability of a referent may not have intended to make strong ontological commitments, but it does seem to stem directly from the Husserlian concern for general noematic stability—that is, the focal point of attention which perceptually identifies separate musical moments as belonging to the same idea via repetition or variation: “In no noema, can it or its necessary center, the point of unity, the pure determinable X, be missing. No “sense without the “*something*”....”⁷ Within more recent music, Judith Lochhead has focused on rigorously defining the meaning of musical ‘things,’ even distinguishing them from musical ‘objects,’ within music that has moved well beyond the traditional concern with melodic or rhythmic motivic material.⁸ If taken in the broadest sense, the result is a sort of pure nominalism that invests a label with the power of reifying a musical event into a persistent idea beyond its momentary instant. The usefulness of identifying clear motivic patterns, even when they live outside of older attention to pitch and rhythm, is perhaps an unescapably basic descriptive analytical step. And, to be sure, such an approach is still productive insofar it is possible to proceed with an analysis of musical ‘things’ over the span of a musical work. But in certain cases, there will be no method of formalizing relations within a context where these placeholders are partially indeterminate, improvisatory acts, or have qualities that, even at a basic psychological level, can be heard and interpreted in many different ways. Later, I will return to the way in which the philosopher Donald Landes and others have followed the French thinker Gilbert Simondon and his concern with the stability of situations rather than the reification of specific objects, and develop a way out of these issues with respect to spectralism as it is expressed in Avram’s music.⁹

Avram’s piece *Voices of the Desert* for soloists, ensemble, and computer sounds (2008) presents a number of these interesting analytical challenges. In the broadest strokes, the work is not difficult to describe. The instrumental ensemble for *Voices of the Desert* consists of a small string orchestra, brass and woodwinds, and a large percussion battery. The electronic track is precomposed and relayed in the concert hall acoustically, though there are audibly striking musical relationships between the computer sounds and live acoustic instruments. Like much of Avram’s music, *Voices of the Desert* would require a considerable amount of collaboration with musicians to be realized, since a certain level of musical detail is left undetermined by score. Avram usually conducted her own works, including the available recording of *Voices of the Desert*, and as there are many points in Avram’s scores that use graphic notation, it follows that Avram and Dumitrescu worked very closely with the ensembles performing their music. Further, the musicians who Avram and Dumitrescu collaborate with, such as reed player Tim Hodgkinson, are accomplished in improvisatory technique. This chapter relies on the available performance of *Voices of the Desert*, the ‘London version’ from the Spectrum XXI festival at Conway Hall in London, performed by Avram, Hodgkinson, and the Hyperion Ensemble in 2008.

The overall form of *Voices of the Desert* develops from a contrast between louder, fervent, more rhythmically active sections and sustained, quiet sections. The bulk of these active sections occur in the first half of the piece, creating a rough A-B binary form with a short coda

using the A material. The A section is itself comprised of three passages that follow roughly the same pattern: an ascending gesture from the bass clarinet, followed by loud, rhythmically active ensemble playing dominated by the percussion. These passages are separated by relatively quiet moments that contain a diversity of electronic and acoustic sounds that are mixed together in subdued but sometimes frenetic patterns, each leading into the subsequent bass clarinet entrances. The B section is comprised of a variety of long sustained sonorities whose timbral development accentuates upper harmonics, such as with extended woodwind techniques, electronic sounds, or bowed and selectively struck percussion. The bulk of the B section is labeled in the score ‘atemporal.’ Each type of sonority in this B section repeat over the course of the work, and creates a persistent contrast that stabilizes the work-character of the piece.

Notwithstanding the usefulness of the above observations, it is important to note how cursory such a description is in the face of the formal process of development that unifies the piece into a coherent work of art. To say that the various entrances of the bass clarinet constitutes a major portion of the work’s thematic development, merely through its timbral consistency, seems strikingly vague. Within the spectral context, the sound of the bass clarinet is transformationally related to other sonorities, and the broad palette of sounds that go into creating the work as a whole are not juxtaposed to one another by way of simple contrast. Thus it is necessary to describe the developmental or ‘functional’ relationship between various sounds and musical gestures throughout the piece. Hodgkinson’s work on bass clarinet is a relevant example. The repetition of his ascending gestures on the bass clarinet provide formal sign posts that clarify the undulating ensemble sections in the first half of *Voices of the Desert*. However, the specific sonorities, the pitch content of the ascending gestures, and the specific extended techniques he uses to broaden the bass clarinet’s sound space, are not determined by a pre-ordained abstraction or notated in the score. No specific motivic pattern could be described to the degree of specificity that a tonal or serial pitch motive, for instance, could. There is a persistent sense that each of the sounds and the events of the work have relations between them, a developmental force that ties them together without being identified as being the same or in the same set. It is this development of relations, rather than pattern similarity, that calls for the revision of an analytical framework away from identification of stable referents to movements between stability and instability.

There is a tendency for musical analysis to latch onto events whose consistency or stability brings with them certain presuppositions like identity or equivalence. From these anchors, it is then possible to trace the development from one idea to the next. But this presupposition does not always guarantee a broad enough field of inclusion or belonging when dealing with important formal relationships. The challenge is amplified for the task of defining a transformational space, because some patterns will inhabit different musical parameters. Lewin’s system begins with an appeal to set theory, initiating from the beginning an algebraic concern with “families of objects.”¹⁰ The most intuitive route for the construction of these families becomes the traditionally understood musical parameters: for example, pitch classes, harmonies and simultaneities, rhythmic durations, and dynamics. In any music since integral serialism, though, it is feasible to transform musical ideas—perhaps the pitch intervals within a melodic figure—into an abstract pattern that shapes some different parameter, possibly rhythmic duration. In Avram’s work, transformations between these spaces would look more like intervals of movement than mapping a line between two points. Spectralism takes sound as a medium, finding the plasticity and malleability of the borders between various musical elements. A fully integrated transformational space would need to accommodate movement not only within a

particular musical element but also across parameters: perhaps a sustained percussion timbre that deconstructs into a fast series of articulations; a single tone whose harmonics strengthen to such an extent to be heard as a simultaneity; or a melodic sequence that arises from a gradually shifting breathing or bowing technique on a single note.

In Avram's music, often important motivic patterns are not supplied by the score but are left to the performers. Thus, the music is built upon a particular expressive potential of a series of specifically embodied situations: a particular group of musicians responding to the score, electronic track, and the rest of the ensemble. The overall structure of *Voices of the Desert* is not open or indeterminate. The computer track is pre-composed, and much of the score is fairly specific. It is precisely the structural stability of the 'middle ground' of the work, so to speak, that makes the problem of the thematic content so challenging: how can partially improvisatory, graphically scored, often indeterminate musical material, form a coherent and dynamic dramatic musical process?

A satisfactory analytical approach to this music would not only need a way to address the fine-grained description of musical phenomena as the music is realized, but also this intricate network of the human relationships within the musical production: performer, composer, conductor and audience in a room together. As a manifestation of human relations at a specific time and place, the ideal analysis would thus require some theory of embodiment—that is, not simply individuals taken as their role as voices or instruments, or on the other extreme a personality abstracted over a lifetime, but in the performative actions in a shared place that the realization of a work brings to life. It would also have to place these relations within a plane that would accommodate the electronic track, whose seemingly disembodied sounds nevertheless form a significant level of structure and bring an organizational presence to the shared space of performance. Moreover, it is not sufficient to describe a single realization: with the tragedy of losing Avram, the partially indeterminate character of these works, now subtracting the heavy involvement of the composer in its realizations, all the more sets the problem of these human relationships into relief.

Stability, Metastability, Multistability

The reason that phenomenology is an apt starting point is its orientation towards both a fuller explanation of the content of subjective experience, and then also towards the way subjectivity in its broadest sense is created and sustained by experience. As Husserl says, there is "a division in the investigation ... one part of which is oriented toward pure subjectivity, the other part toward what belongs to the 'constitution' of Objectivity *for* the subjectivity."¹¹ Husserl thus provides some groundwork for both the analysis of the musical content and for how that musical content leads toward 'the I': "One pure Ego ... summoning itself in its continuity of content," as Husserl puts it.

As I suggested earlier, though, there are important reasons that Husserl's phenomenology is not completely up for the task of providing a theoretical framework that responds to the challenges Avram posed. The main limitation with Husserl here is the orientation to the unity of the temporal object, the unity of consciousness, and the unified transcendence of the Ego/self. It is true that one of Husserl's most accessible ideas is his explanation of the transition from the temporal flow of experience to the perception of the persistence of ideas or objectivities, and then finally to the way in which the coherence of perception through time begins to ground the nature of the self and the world as transcendent to any individual experience. Here, the continued

persistence of some thing, and by extension the world, solidifies the transcendence of the perceiving self and the object.

There is also an opposing movement to transcendence, though, which is the operation most relevant to the present problem – where the ego, its perception, and the things of the world do not cohere into unity but explode outward into multiplicity. Husserl treats this situation as a special case, where, under certain circumstances, “the whole perception, so to speak, *explodes* and splits up into ‘*conflicting physical thing-apprehensions*’....”¹² It is an interesting mark of the intellectual climate of the Hyperion Ensemble that Tim Hodgkinson, the bass clarinet soloist in the available recording of *Voices of the Desert*, grapples with the implications of this description in his own post-ritualistic understanding of music making.

I found in Edmond Husserl’s phenomenology a description of how a subject might form itself continuously in relation to its experience as it passes through time. But if I transposed this abstract description into a human informational field considered as conflictual, then the self-production of the subject would no longer be univocal and would become in some way multiple.¹³

Hodgkinson rightly points out one limitation to a dogmatic reading of Husserl is the challenge of capturing the multiplicity in the often-agonistic construction of human meaning, and expands on its significance within music performance. Hodgkinson’s path to the conflictual and multiple is equally prescient for the effort to describe the transience and malleability of Avram’s musical creations in notation.

The problem in this context is not primarily that of clarifying the stabilization of a a musical object, a thematic idea, or even a ‘work’ in the traditional sense in the same way as a distinct object in the world.¹⁴ At both levels, that of the subjectivities that participate in the performance and experience of the music, and the object-like patterns as details of musical analysis, the goal is to account for the loss of focus on the singular, unified subject and object. What remains is what Gilbert Simondon called the pre-individual milieu, the grasping of the situation prior to any bias toward unity and stability without first accounting for how these unities were established.¹⁵

Simondon’s work may not be immediately identifiable as related to phenomenology, but his studies with Maurice Merleau-Ponty historically place him in an important line of thought after Husserl. While Husserl began with a phenomenology built on the analysis of the mind, consciousness, and ideas, Simondon begins with technological, chemical and biological inspired constructs—situations in which the role of the human subject is not unequivocally established. Simondon’s philosophy is in part motivated by a model of becoming in which there is not merely actualization of the virtual but a process of individuation from within a milieu of a “pre-individual metastability.”¹⁶ Rather than beginning with a description of the things, bodies and ideas that are viewed as individual within some situation (in our context, a musical performance), Simondon seeks to begin with a description of the larger system that brought about this situation, “... a primitively oversaturated reality, rich in potential, greater than unity....”¹⁷ If this situation reached pure stability, then, analogous to the biological or physical imagery, no creativity could arise out of it: “...[S]table equilibrium, in which all potential would be actualized, would correspond to the death of any possibility of further transformation; whereas living systems ... are systems of metastable equilibrium....”¹⁸

Contemporary philosopher Donald Landes’s interpretation of Simondon via the question of expression brings this work very close to the problems that arise in Avram’s music. In the context of the problem of expression, Landes explains Simondon’s individuation: “The *process*

of individuation must, according to Simondon, be returned to the center of the investigation...because the individual is a relational reality, a ‘réalité relative.’ The possibilities for individuation are not all contained in the individual, but are a function of the individual in relation to its milieu and its reservoir of potential shifts.”¹⁹ There is a dynamic relationship between the individual and other forces in its environment that preserves the potential for further transformation. The metastable situation remains present as a certain weight. Muriel Combes summarizes Simondon’s process of individuation slightly differently by saying that “the taking-on of form operates by putting into relation two orders...”²⁰ The individual exists, and persists as the operation of relation between these orders, whose own constitution lives in the metastability of their larger situation.²¹ This relational existence is not actualized into an autonomous being, but retains its constructive relativity within its existence. As Simondon explains it, “The individual would ... be understood as ... a certain phase of being which presupposes in itself a pre-individual reality, and which, even after individuation, does not exist all by itself, for individuation does not erase, in a single stroke, the potentials of the pre-individual reality...Individuation does not [merely] bring about the individual, but also the individual-milieu couple.”²² From this perspective, the individual is the localized site from which the overall milieu can be conceptualized as the ‘metastable.’ In this perspective, the individual retains a certain amount of potential energy, still reserves the possibility to undergo transformation.

The term ‘individuation’ shares the same problem as ‘thing’ or ‘object’ in that it may slip in assumptions about its status through the common understanding of ‘non-divisible.’ The challenge with spectral music is precisely that what seemed to be an individual sound can be in fact further articulated. It is helpful instead to focus on the relative ‘stabilities’ of certain relationships that crystallize out of the metastable situation. *Voices of the Desert* shares many basic ‘stabilities’ of European musical works: the score and computer track determine most of the details of the performance; the traditional acoustic instruments that make up the ensemble are not run through any external effects; and there are some clear theme objects whose strict repetition provide scaffolding for the comprehension of the work. The structure as a whole is not free or mobile, but proceeds according to process defined by the computer track. However, to gain more specific knowledge of the inner logic of the piece, the most relevant transformations cannot be pinned down to musically repetitive identities stable enough to undergo transformations without a large amount of inherent ambiguity. Further, each of these stabilities retains within them an energy that arises from the constant presence of transient, flowing temporality. Their internal dynamism itself leads to transformations that follow trajectories that have themselves formed in the metastable relations supporting its existence.

Landes provides an important addition to Simondon’s philosophy that is relevant in the context of the artistic creation like a musical work. In the context of the overarching question of the determination of a musical thing or locus of meaning, some level of intentionality is necessary to fully articulate the individuated expressive act. This articulation, what Landes calls ‘eventizing,’ is a function of the intentionality, or focused attention that helps to constitute the act in a mutually shared subjective realm of meaning. Whereas physical crystal grows from its supersaturated medium along patterns inherent to its material, in the musical and artistic sphere, expression must crystallize from artistic and perceptive acts that include the both performer and listener. In Landes’s formulation, “Expression is the eventizing of intentionality.”²³ Moving beyond the stabilization of things, Landes recognizes the paradoxical status of the expressive act being at once performative event and artistic artifact—in the case of music, a sounding

phenomenon. This way of seeing expression provides a useful model for the articulation of musical passages like those of Avram's work. The most significant forces of 'individuation' in this case are not merely the indications of the score alone, but also of the relational situation provided by the musicians vis-a-vis the electronic track, and the composer-conductor participating in the expressive act, and the relation of experience within the listener's perception. Again, Landes synthesizes the relational force involved in expression, following a Simondonian intersection of different orders: "expression is action that responds to ideal weight."²⁴ In the musical context, the 'ideal weight' does not come from a single source, but by the diverse people, instruments, software, etc., that comprises a performance. The performance then stabilizes, parallel in some ways to the concept of musical realization, those expressive acts. The composer/conductor's role is then to anticipate and coordinate these responses.

Simondon's vision of individuation from metastability provides a useful preparation for the adaptations needed in transformational theory in order to construct a sufficiently open space for inherently metastable musical preparations to be connected along clear transformational paths. There are multiple reasons to avoid any sort of incorrect reification of musical material when it comes to Avram's music, and Simondon's concept of the pre-individual metastable state assists in that cautionary approach. From this perspective, a musical performance is a process of individuation that arises from acts of expressive/performed acts sedimented in the musical material itself.

In important structural moments, then, Avram was not so much concerned with specific musical patterns, but with the particular expressive potential of the live situation that put different orders (electronic, score indications, acoustic properties of live instruments, performers, etc.) into relation. One facet of the situation involves the performer-listener coupling realizing a performance with mutual relationships to an instrument. It is not simply a matter of performative embodiment however, that completely fulfills the process of individuation that realizes a performance. It is true that acoustic instruments gain their characteristic sound by details like the dimension of the resonating chamber and source of vibration. Don Idhe reflects on this point at length, pointing out that "the voices of things bespeak the multiple dimensions of things."²⁵ All of this phenomenological description is generically true for most music, and indeed objects in general, but for Avram another level comes into play with the computer sounds and extended technique.²⁶ Rather than employ traditional 'voices of things', these voices are themselves transformed in order to respond in a productively agonistic way to the ideal weight placed on the performer from different angles. For example, in *Voices of the Desert*, Avram explains that "the electronic...[track] is the real conductor... which is enhanced and acousmatically disguised by the instruments. Their only function is that: to disguise the sonic source, to encrypt it, but the structure is absolutely shaped by the electronics."²⁷ Idhe's understanding of the voice of things becomes, like technology itself, a musical starting point from which Avram cultivates more elaborate relations.

At times, the clarity of the sound source can be identified as a specific instrument. The fact that the most widely available recording is actually a video of a performance helps to emphasize the embodied performance element. However, the boundary between acoustic instruments and computer track are intentionally difficult to articulate. The acoustic instruments often perform in timbral regions that are not easily identifiable. Prepared piano, extended bowing and tuning techniques in the strings, extreme registers of the woodwinds, or flutter-tonguing in the brass, for example, have all been established in the ensemble's local metastable preparations for the purposes of allowing considerable amount of ambiguity and intermixture. The experience

of this ambiguity in the realized performance retains some of the relational aspect of its multiple sources, but it stabilizes into a specific set of expressed relations. In decisive moments, though, this shift has not yet reached the level of particular expressive/analytical stabilities, but towards an intermediary level.

For the sake of understanding how these intermediary levels help to shape the ‘interval’ of transformation, it is helpful to understand them first not as metastable or stable, but as remaining in multistability. The visual phenomenon of multistability is well known: certain images can be seen in two distinct ways, while still requiring a sort of mental jump from one to the other. A number of music scholars have noted that music often provides similar multistable experiences, in which two fairly clear hearings can be pinned down or a certain ambiguity remains present in listening.²⁸ Cognitive scientists Michael Stadler and Peter Kruse propose that “every pattern, in a way, is multistable, but in everyday life probability constitutes certain criteria for the selection of an aspect of the pattern is assumed to best fit reality.”²⁹ Multistability intervenes in a proposed identity, creating a fissure that must then be synthesized with some hinge of perceptibility. Musically it occurs at the perceptual level, often at the threshold between different musical parameters, interpretation of metric emphasis or harmonic voicing. Musical multistability preserves something of the metastable—the physical process that has individuated certain events still needs the noetic force to determine its stability and meaning. The performance having been realized and recorded, there is no noematic ambiguity to be resolved (at least no more than any other musical work.) Yet a study of any number of moments in a work like *Voices of the Desert* could identify an essential confusion woven into the basic material, a confusion that must be resolved in the listener’s own hearing. When these ambiguities occur between hearing an event as a single, timbral thing or multiple attacks in a rhythmic phrase, it provides some motivation to hear the transformational movement between other events that have more decisively landed on one side or the other of the relevant threshold. The ‘intervallic’ movement between two musical parameters does not normally emerge without some considerable effort, but can be performed by situating two moments as opposing sides of a multistable possibility. This effort, moreover, becomes part of the activity of the listener.

Accepting that multistable thresholds occur between musical parameters resolves an important theoretical tension. On one hand, Stockhausen developed a theory of musical time that placed rhythm and tone on the same temporal spectrum. On the other hand, there is a perceptual reality that music obeys different laws in each realm.³⁰ A movement from one to the other understood as musical development would need to proceed along an ‘interval’ in the broadest sense possible. The musical material itself must direct attention towards and over a threshold that is not normally heard as malleable. However, preserving a transformational energy in the metastable, dynamic equilibrium of musical material allows the multistable ambiguities between multiple musical elements to direct movement along prepared routes.

The preservation of the unsettled content opens up the transition space in between clearly stable musical parameters. Example 1 shows a notable event about one minute into *Voices of the Desert*.

The image shows a complex musical score for a section of 'Voices of the Desert'. It features three main parts: **Bel solo**, **Archi** (strings), and **Percussion solo**. The **Bel solo** part includes a vocal line with lyrics like 'sauvage!' and 'mi', and a bass line with notes like 'mi' and 'slapp'. The **Archi** part consists of three staves for string instruments, all playing a tremolo *col legno* on the fourth string, marked with *ppp*. The **Percussion solo** part includes cymbal(s)on timpani, Piatti, and Gran cassa, with dynamics like *pp* and instructions like 'sempre moltiss glis ped timp; tremoloon cymb.'. There are also performance markings like '2' with a downward arrow and 'M.Press.'.

Example 1: Ana-Maria Avram, *Voices of the Desert*, 1:30-2:30

Example 1 shows the string and some of the percussion parts just prior to the entrance of the first major bass clarinet solo. At this point the percussion battery includes a number of cymbals played in various ways, but mostly fit into a sustained texture rather than emphasizing any specific rhythmic activity. After the percussionists initiate the cymbal playing, the strings begin playing a tremolo *col legno* in a rapid, free pattern at a very similar quiet dynamic. This effect creates a ‘noisy’ passage that is unordered rhythmically and distributed over a few octaves without specific pitch markings. The sonic relationship between a cymbal and a string quartet playing these relatively free *col legno* tremolo attacks is predominantly a temporal one. When the tonal core of the string instruments is replaced with attacks on the stick freely distributed over the lower register of the group, the grain of the cymbal and the string quartet begin to converge on a sort of white noise.

The string pattern is itself transformed in slight ways in two later articulations.

6
↓

Alto

Gett e Tremm legno crd IV scord

Gettato col legn e Tremm legno crd IV scord

Archi

Vel

Cb

The image shows a musical score for three parts: Alto, Vel (Violini), and Cb (Contrabbassi). The Alto part is in a high register and features a series of notes with 'sfz' (sforzando) markings and a 'gettato' instruction. The Vel and Cb parts are in lower registers and also feature 'sfz' markings and 'gettato' instructions. The score is written in a style that emphasizes percussive attacks and tremolo effects.

Example 2: Ana-Maria Avram, *Voices of the Desert*, c. 7:00-8:00

In Example 2, the col legno tremolo is given a further *gettato* indication, emphasizing the dry percussive attacks that are ordered neither through specific rhythm nor specific register. Avram thus orchestrates a sub-tonal noise event whose differentiation from a cymbal's ring is primarily one of temporal density. The third instance accentuates the attacks to its most fervent level with the *batutto* indication, providing an increase in amplitude of the noise.

The image displays a musical score for two instruments: 'perc metals' and 'Archi'. The 'perc metals' part features a series of rhythmic patterns on a staff, with a large downward arrow labeled '7' indicating a specific measure. The 'Archi' part is written for strings, with a similar downward arrow labeled '7'. The string part includes the instruction 'Tutta la forza!!!!' and 'batt col legno irregolare, spettacoloso'. To the right, there are additional musical notations including 'mét.' and 'lu.' with various symbols and arrows.

Example 3: Ana-Maria Avram, *Voices of the Desert*, c. 8:40-9:10

The sequential thickening and intensification of this initially rhythmic, percussive activity directs itself toward a single effect. There is a multistable ambiguity between the rhythmic activity and white noise that depends on the performer’s treatment of speed and the listener’s suggestibility in how it relates to the surrounding cymbal and other noisy elements of the work. Not only does Avram clearly stage a movement from one string event to another, these relative stabilities share a very similar character with the full battery of cymbals. At other times, the string ensemble plays a similar frenetic passage with a fully pitch and harmonic producing technique, and so approaches the relative clarity of the woodwind voices. To find within these stabilities a specific rhythmic or melodic pattern would be missing the point, but to articulate these passages as coherent musical ‘things’ equally reifies the performative embodiment that the relatively free indication for the string ensemble has in the creation of these events. Any number of similar movements could be described, and together form a general schematic for understanding the nature of these transformational spaces.

The Transformational Space

In Lewin’s mode of analysis, the description of a work occurs within a space constructed to emphasize relevant processes. Historically these were defined according to strict, algebraic and computer language-driven formal details. In order to trace these paths of transformation between relative musical stabilities within a work like *Voices of the Desert*, the space in question must incorporate multiple parameters in a single space without relying on mapping. It is also unnecessary, indeed perhaps misleading given the above discussion, to formally define these according to some claim of objective mode of labeling that provides some exclusive interpretation of the formal schema. The paths of transformation and the intervals over respective thresholds depend on their heard manifestations. They thus invite a diversity of hearings, just as

the nature of Avram's scores invites a multiple but limited realm of possibility for the musicians to realize the work.

This problem is intimately related to the challenge of systematically analyzing timbre. Lewin's notable attempt at constructing a space for timbral transformation elucidates how the challenge of timbral transformations could be expanded to include the sorts of musical relations Avram works with.³¹ There have been a number of notable attempts at defining a general timbral space with two or more dimensions.³² A survey of a few systemic approaches highlights the dilemma. On one side, Stockhausen proposed that timbre, along with rhythm, pitch and other parameters share the same field of musical time, and recognized the continuity among the different regions of this field. On the other side, most of the other theories introduce a multidimensional descriptive space that provides 'intervals' between different qualities of sound as a parameter comparable to more clearly structured spaces like that of pitch. Here, the emphasis is not its relation with other musical elements, but to register it as worthy of equal rigor as pitch.

A move between parameters would from the beginning have a much more complicated space. It is not merely a matter of stepping back into a more broadly constructed space, such as a frequency spectrum, for there clearly are differences between parameters, boundaries over which an interval must be spanned. The most expeditious solution is instead to construct a composite space that does not assume a continuity, but must move according to some interval from one locality to another. This movement must also recognize that the passage between two musical events requires the noetic and noematic aspects—a rigorous description of the sound and the constructive intentionality that plays a role in defining that interval of movement. After all, within Avram's music, collections of sounds are not merely juxtaposed, but move from one to another through certain transformations. As Avram mentions, her and Dumitrescu's interest in extended techniques grows out of their power for facilitating transformational relations. Thus, certain performance indications are meaningful not only because of the intrinsic usefulness of some particular sound, they encourage multistable hearings that bridge each local area.

Following loosely on the above attempts at describing timbre, a few important threads of development can be simplified into two dimensions: 'wet-dry' and 'rhythm-tone.' Both these axes follow the fairly well-known differentiations that occur in acoustics. A 'wet' sonority will contain clear periodic waves that are heard with some determined pitch with some duration of tone, even a short one. A 'dry' sonority will be constituted with noise (here simply meaning approaching a constant spectral density). A rhythmic event will fall under the psychological threshold where each attack can be distinguished, while a pitch-constitutive event holds together in a fairly smooth continuity of sound. This space is could be occupied by objects or things, but within Avram's situation where the details of those events are not precisely defined, the space becomes an arena of expressive actions realized in performance. Some of these actions are performed by the instrumentalists according to Avram's score; some of them are electronically realized from the computer sounds that had been pre-constructed. It is thus not simply a map of bodies or voices: in fact, it would be somewhat inconsistent to claim Avram's aesthetics of the electronic sounds are particularly embodied from the performative standpoint. It is a space of variously individuated stabilities that resulted from the expressive potential of the metastable situation Avram orchestrated.³³

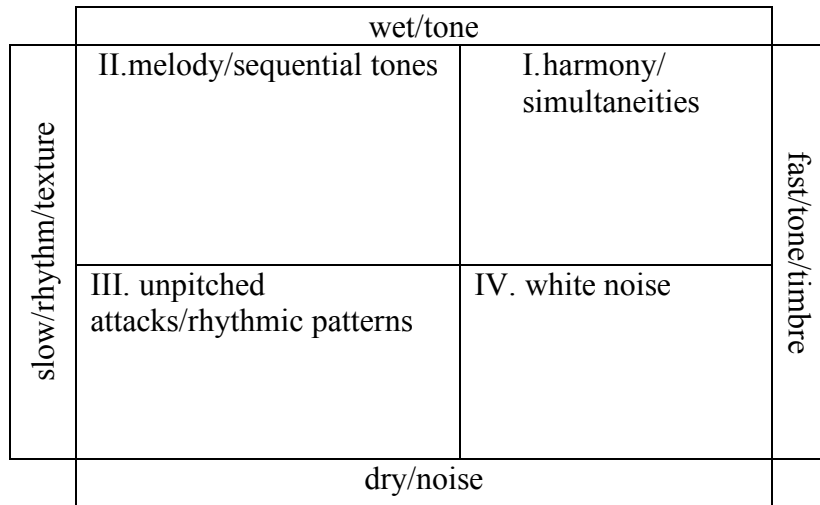


Figure 1: Generic Space

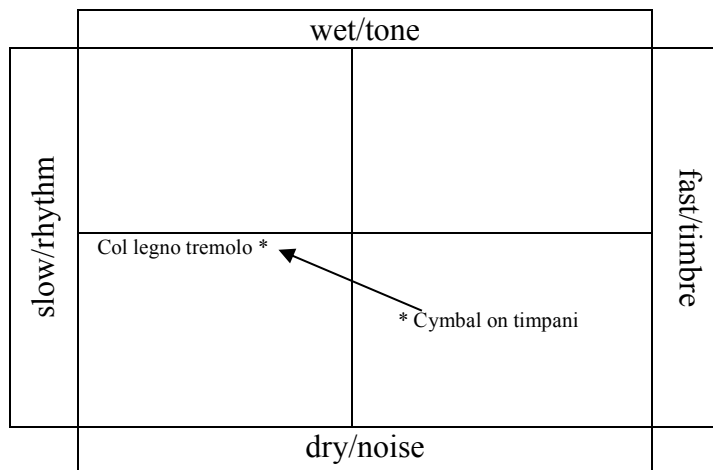


Figure 2: Movement from sustained cymbal patterns to string ensemble patterns illustrated in Example 1.

The diverse collection of sounds that comprise *Voices of the Desert* can be thought of as developing from each other—not always in a literally derivative way, but according to the series of sound events that develop via certain trajectories through this ‘space’ seen in Figure 1. For example, in Figure 2, the relationship described above between the series of *col legno* events and a cymbal is primarily one of speed. The irregularity, spectral density, and lack of periodic patterns create very similar noisy qualities, differentiated only by the threshold of speed between a cymbal’s audibly constant ringing and the string ensemble’s rapid but individually rhythmic playing. Likewise, the *col legno* patterns could easily be connected to the string ensembles more tonally coherent attacks that more easily stabilize into a contrapuntal pattern that would proceed to the upper left quadrant.

The only intervals specified at this generic level are the ones that arise between different parameters. As mentioned above, the directed movement over this interval is not merely a juxtaposition, but relies on the multistable ambiguity that fall in between each parameter. These borders can be articulated by a series of general questions that are familiar multistable musical ambiguities: Is some retention present or past? Is the sonority pitched or non-pitched? Is the event a single sustained sound or multiple rhythmic attacks? Is there an emphasized periodicity at any moment of the spectrum? The move from quadrant I to II is formed as an ambiguity between sequential and simultaneous events: does the retentional falling-away of one sound preserve the presence of the sound or not? The interval from quadrants II to III is the ambiguity of pitched versus unpitched attacks. III to IV is determined by the differentiation between rhythmic attacks and sustained sonority, and IV to I is essentially the question of the ‘masking threshold’ or the audible threshold of periodic patterns within noise.

The ensemble of acoustic and electric sounds could feasibly be traced out as a series of connected relationships among events that are transformationally related according to this schema. In fact, the piece opens with a mixture of low metallic electronic sounds with sharp attacks that invite such a listening. These opening electronic sounds transform into a few acoustically more familiar groups: the prepared piano whose bass attacks are stopped to gain a similarly metallic quality, the introduction of the toms and timpani, whose attacks emphasize a shorter but darker resonance; and the larger sustained cymbals and tam-tam, which emphasize the higher, noisier edge of the sound.

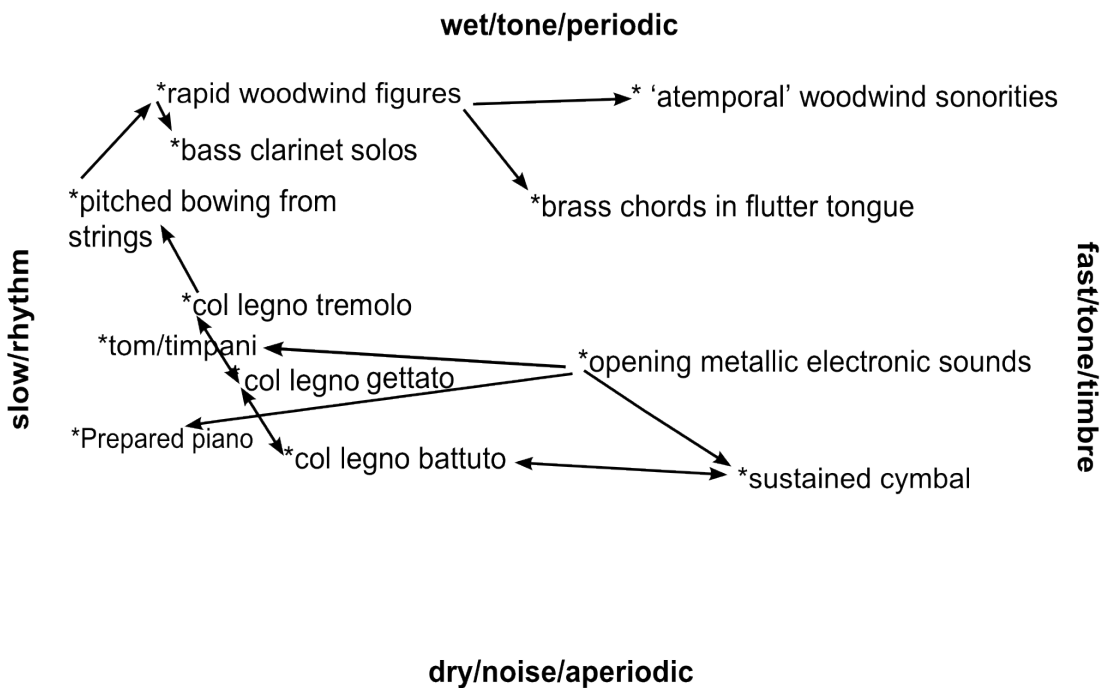


Figure 3: Development from opening electronic sounds

Thus, in addition to the formal constraints that shape the large-scale structure of the work, there is a series of transformational routes to and from the electronic sounds. These sounds proceed according to a number of different processes and relations.

Conclusion

This transformational space provided here is in a less formalized state than those usually associated with post-Lewinian transformational theory, because there are really only four relevant transformations that diverge from the multitude of interval models of each respective quadrant. A finer level of detail might be provided, but the main goal has been to describe an intervallic movement from one musical element to another. It would be entirely feasible to populate each quadrant with more specific intervallic striation. However, such a drive toward generic formalizing returns to Avram's initial concern with abstract models of spaces rather than primary engagement with sound. At the same time, Avram and Dumitrescu's concern with transience and flux does not seem to be in total solidarity with pure ineffability. These composers followed a phenomenological method to engage with their sonic medium. In doing so, they found relationships among different sound sources that motivate the drama of their musical works. Avram viewed the trajectory of these relationships to be essentially transformational. It is only natural, therefore, that traditions of analysis that have equally claimed to be phenomenological and transformational should form the basis of an analytical approach to this brand of spectralism. The model of transformation provided here has avoided strict formalization in order to leave room for the descriptively phenomenological practices that Avram has suggested inform her creativity, though without claiming to describe some abstract process of analysis. For as much as any stylistic difference in their music, it is actually this concern for immanence that afforded Dumitrescu and Avram access to the richness of their medium.

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¹ Besides the obvious geographical connections, the ‘Romanian School’ of spectralism might be identified along similar concerns. See: Horia Surianu and Joshua Fineberg. "Romanian Spectral Music or Another Expression Freed." *Contemporary Music Review* 19, no. 2 (2000): 23-32. Horatiu Radulescu’s theory of ‘plasma’ is a parallel attempt at articulating a more fluid conception of music. See Horatiu Radulescu, *Sound Plasma: Music of the Future Sign* (Munich: Edition Modern, 1975). Dumitrescu and Avram have sought to further distinguish themselves as ‘hyperspectralists’ by emphasizing the particular phenomenological approaches that are surveyed in this paper. Avram’s biography at the 2016 CTM festival succinctly describes these common themes. ‘Ana-Maria Avram’ <http://www.ctm-festival.de/archive/all-artists/a-e/ana-maria-avram/>, Accessed January 29, 2017. See also Teodorescu-Ciocanea, Livia. "Timbre Versus Spectralism." *Contemporary Music Review* 22, no. 1-2 (2003): 87-104.

² Dumitrescu has discussed his interest in phenomenology in on a number of occasions. See: Iancu Dumitrescu and Andy Wilson, *Cosmic Orgasm: The Music of Iancu Dumitrescu* (London: Unkant Publishing, 2013); Ana-Maria Avram, Iancu Dumitrescu, Cornelia Fales, Tristan Murail, “Analysis, Phenomenology, and Ethnomusicology in Spectral Music” *Proceedings of the Istanbul Spectral Music Conference* ed. Robert Reigle, and Paul Alister Whitehead (Istanbul: Pan Yayıncılık 2008); Ryan Kirk, “The String Music of Iancu Dumitrescu: Reflections on Musical Phenomenology” (master’s thesis, Dalhousie University, 2013); Iancu Dumitrescu, ‘Structure & Freedom’, *Resonance*, vol.6/1 (1997), 8–11; “Ecriture: Iancu Dumitrescu,” *Revue et Corrigée* 29 (1998), 5–8; ‘Iancu Dumitrescu, on the inside looking in,’ *Bananafish*, (San Francisco, 1998), 7–8; ‘In the Land of The Ninth Sky: Iancu Dumitrescu and Ana-Maria Avram’, *MusicWorks* 71 (1998), 9.

³ Brian Kane, “The Music of Skepticism: Intentionality, Materiality, Forms of Life” (Dissertation, University of California, Berkeley, 2006).

⁴ Ana-Maria Avram, in discussion with author, December 2016.

⁵ Avram, in discussion with author, December 2016.

⁶ David Lewin, ‘Music Theory, Phenomenology, and Modes of Perception,’ in *Studies in Music With Text* (New York: Oxford University Press, 2006), 60

⁷ Edmond Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*. Translated by F. Kersten (Boston: Kluwer Academic Publishers, 1998), 313

⁸ Judith Lochhead, *Reconceiving Structure in Contemporary Music: New Tools in Music Theory and Analysis* (New York: Routledge, 2016).

⁹ Donald Landes, *Merleau-Ponty and the Paradoxes of Expression* (New York, Routledge 2013)

¹⁰ David Lewin, *Generalized Music Intervals and Transformations* (New York: Oxford University Press, 2011), 1.

¹¹ Edmond Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*. Translated by F. Kersten (Boston: Kluwer Academic Publishers, 1998), 192.

¹² *Ibid.*, 332.

¹³ Tim Hodgkinson, *Music and the Myth of Wholeness: Toward a New Aesthetic Paradigm* (Cambridge, MA, MIT Press, 2016), 9.

¹⁴ Kane's study of Schaeffer's musical objects also helps to demonstrate the distance that Avram's phenomenology would be placed from the French heritage of Schaeffer and Grisey. See Brian Kane, *Sound Unseen: Acousmatic Sound in Theory and Practice* (New York: Oxford University Press, 2014).

¹⁵ Gilbert Simondon, *On the Mode of Existence of Technical Objects*, trans. Cecile Malaspina and John Rogove (Minneapolis: Univocal Publishing, 2017).

¹⁶ Donald Landes, "Corporealities: From the Logic of Expression Toward and Ethics of Bodies in Merleau-Ponty" (dissertation, Stony Brook University, 2010), 9; see also Landes, *Merleau-Ponty and the Paradoxes of Expression* (New York, Routledge 2013).

¹⁷ Simondon, *On the Mode of Existence of Technical Objects*, 168.

¹⁸ *Ibid.*, 177.

¹⁹ Landes, "Corporealities," 58

²⁰ Muriel Combes, *Gilbert Simondon and the Philosophy of the Transvidual* (Cambridge, MA: MIT University Press, 2013), 18-19.

²¹ Combes discusses this in terms of the English phrase 'orders of magnitude' which already has a specific meaning that is related to the quantitative relation measured by powers of ten. The Simondonian sense of magnitude includes a metaphorical qualitative measurement of force whose meaning lies well beyond the English phrase.

²² Landes, "Corporealities."

²³ *Ibid.*, 58

²⁴ *Ibid.*, 34

²⁵ Don Idhe, *Listening and Voice: Phenomenologies of Sound* (Albany: SUNY Press, 2007), 190.

²⁶ Cf. Rolf Inge Godøy. "Gestural-Sonorous Objects: Embodied Extensions of Schaeffer's Conceptual Apparatus." *Organized Sound* 11, no. 2 (2006): 149-157. Godøy proposes that electronic sounds can still be understood as 'gestural-sonorous objects' wherein all sounds are constructed in perception according to "multimodal gestural-sonorous images based on biomechanical restraints." "Gestural-Sonorous Objects," 149. This embodied concept of listening follows a different, but equally productive trajectory than what Landes provides, namely a solution via expressivity to Lewin's specific critique of Husserl's lack of differentiation between the creative activity of the composer and that of the listener. The specifically Husserlian themes addressed in the present discussion follow the specific problem as it was proposed by Lewin. David Lewin, "Music Theory, Phenomenology, and Modes of Perception," *Studies in Music with Text* (New York, Oxford University Press, 2006), 100.

²⁷ Ana-Maria Avram, in discussion with author, December 2016

²⁸ Judith Lochhead applies Don Idhe's discussion of multistability to the theorization of musical time. See Judith Lochhead, "The Temporal Structure of Recent Music: A Phenomenological Investigation (dissertation, Stony Brook University, 1982); Don Idhe, *Experimental Phenomenology: Multistabilities* (Albany: SUNY Press, 2012), Kofi Agawu, "Ambiguity in Tonal Music: A Preliminary Study," in *Theory, Analysis, and Meaning in Music*, ed. Anthony Pople (New York: Cambridge University Press, 1994), 86-107.

²⁹ Peter Kruse and Michael Stadler, *Ambiguity in Mind and Nature: Multistable Cognitive Phenomena* (Springer, 1995), 10.

³⁰ This challenge can be traced back at least to the 1950s and 1960s in the debates between Adorno and Stockhausen about musical time. See Karlheinz Stockhausen, "...How Time Passes..." in *die Riehe* 3 (1959) 10-40; and Adorno's critique in Theodor Adorno, "*Vers une musique informelle*" in *Quasi una Fantasia*, translated by Rodney Livingstone (New York: Verso, 1998), 269-322.

³¹ David Lewin, Chapter 4.2 in *Generalized Musical Intervals and Transformations*: 82-87.

³² Pierre Schaeffer's attempt at systematizing sound situated sound objects in a timbral space determined by two dimensions. See Pierre Schaeffer, *Traité des objets musicaux* nouvelle édition, (Paris, Le Seuil, 2016). Wayne Slawson attempts to expand a theory of timbral comparison from a model derived from vowel differentiation, with four dimensions Wayne Slawson, *Sound Color* (Los Angeles: University of California Press, 1985). Stephen McAdam's work at IRCAM Karlheinz Stockhausen proposed that the only relevant arena needed was a concept of musical time that could accommodate most musical parameters based on an abstract qualitative comparison of frequencies. Karlheinz Stockhausen, "...how time passes..."; Stockhausen, "die Einheit der Musikalishen Zeit," *Texte zur Elektronischen und Instrumentalen Musik* 1, ed. Dieter Schnebel. Cologne: Verlag M. DuMont Schauberg: 1963. Tolga Tuzun explicitly follows Lewin in his formulation of timbral transformation by describing timbres analytically according to subdivisions of the sound itself, building off a number of similar efforts at creating a multidimensional field on which to map changes in timbre. Tuzun builds upon a number of theories whose preliminary step is to define some space within which timbral transformations might occur. See Tolga Tuzun, *Contextual Transformations in Timbral Spaces* (dissertation, City University of New York, 2009); Stephen McAdams, "Perspectives on the contribution of timbre to musical structure." *Computer Music Journal* 23, no. 3 (1999): 85-102; Fred Lerdahl, "Timbral Hierarchies," *Contemporary Music Review* 2/1 (1987): 135-60. Brian Fennelly, "A Descriptive Language for the Analysis of Electronic Music," *Perspectives of New Music* 6/1 (1967): 79-95. The study of timbre has evolved rapidly, and so a full survey is not possible here. These approaches share the specific task of creating some multi-dimensional field through which it might be possible to conceive a transformational interval within a single parameter of timbre.

³³ In this respect, it is also important to point out that this particular space demonstrates some of the most relevant transformations in the work, but certainly not all of them. The differentiations between the quality of the noise, or the specificity of intervals within a more local range of space are relevant details, but would fall into a different analytical discussion. Two parameters, duration and meter, are not axes in this space, but do create 'force fields,' so to speak, which direct potential transformations because of the effects of periodic patterns. For example, the increase of speed of a strictly repetitive metric pattern would not move from rhythm to noise along the horizontal axis, but would include a vertical movement because of the tonal suggestions of the increase of frequency. However, since Avram does not often rely on strictly repetitive rhythmic patterns, the increase in speed would not be realized by strict rhythmic subdivisions passing into wave-like periodicity.