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Discourses on Time in the European Avant-Garde

A Dissertation Presented

by

Aaron Allen Hayes

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Abstract of the Dissertation

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In the 1950s and 1960s, European composers, especially those interested in the development of serialism and electronic music, framed many of their aesthetic and compositional challenges as problems of time. This dissertation examines the writings and music of five notable composers from this era, and reconstructs the philosophical discourses that implicitly and explicitly provide the intellectual horizons for these temporal problems. In the late 1940s and early 1950s, Karlheinz Stockhausen, Karel Goeyvaerts, Pierre Boulez and Jean Barraqué attended the seminar offered by Olivier Messiaen at the Conservatoire National Supérieur de Musique de Paris. With the exception of Barraqué, these composers also attended the International Summer Courses at Darmstadt, the famous center for new music in post-war Europe. There they engaged with the philosopher Theodor Adorno and other composers who were also interested in developing theoretical approaches to new music. This musical and intellectual climate fostered a number of discourses that considered time to be of central importance to the study and creation of music. In doing so, these composers channeled the broader concern with time that marked philosophy and science in the twentieth century. In each chapter of this dissertation, I situate the music and writings of these composers into the philosophical discussions of time that lived in close proximity to their intellectual world. While there were a variety of different theories about

musical time to emerge from this era, these composers shared a similar set of intellectual inspirations that led them to formulate their problems in similar ways, notably the problem of musical experience.

The first two chapters demonstrate that Henri Bergson's thought provides an important philosophical background for a number of composers, especially the music and theory of Stockhausen and Boulez. Stockhausen's interest in 'qualitative' forms of musical time channel the strong Bergsonian influences that the composer most likely received through Messiaen, Adorno, and Pierre Souvchinsky. In Stockhausen's famous essay, "...how time passes..." and his woodwind quintet *Zeitmaße* (1957) it becomes clear that his concept of 'qualitative flow' relies on a Bergsonian response to his scientific study of acoustics. Boulez must be viewed in a similar context. The idea of 'smooth' time that Boulez works through in his 1960 Darmstadt lectures parallel the mathematical concept of smoothness in the work of Hermann Weyl, a compatriot of Einstein who was influential in the development of topology. But contrary to Boulez's mathematical heritage (the field he studied before committing himself to music), the composer was also concerned with the experience and 'occupation' of time, and brought in psychological principles of musical experience that also echo Bergsonian premises about the nature of musical time, especially Bergson's critique of early twentieth century mathematics. After pointing out the resonances between Boulez's concept of smooth and striated time with both Bergson and the development of calculus and topology, I demonstrate how this tension within the concept of smooth time is exemplified in one of his settings of Mallarmé's poems, 'Une dentelle s'abolit' (1957) from *Pli selon Pli*. Both Stockhausen and Boulez thus use the problem of time to negotiate between scientific or mathematical frameworks on one hand, with their concern with the temporal nature of human experience on the other.

The confrontation between Goeyvaerts and Adorno at Darmstadt over the aesthetics of integral serialism is another famous situation that was directly related the issue of musical time. Adorno's philosophy of time grounds his critique of serialism, and Goeyvaerts's *Sonata for Two Pianos* (1951) illustrated for the philosopher the problematically 'static' character of serial music. The way in which Goeyvaerts and Adorno conflicted in their interpretation of musical time provides a major window into the general aesthetic challenges that the composers at Darmstadt presented themselves with. In the fourth chapter, I develop a related notion of

musical stasis that was interpreted through the theological concept of eternity that Messiaen, Goeyvaerts, and Stockhausen referred to, focusing on the influence of their their Catholic faith and the theological traditions surrounding time and eternity. Responding to the large body of work on Messiaen's theological background, I argue that Messiaen's concept of eternity is indebted on many points to Augustine, even though the composer himself refers most often to the thought of Thomas Aquinas. This subtle yet decisive difference in the theological understanding of eternity opens up a number of useful analytical approaches to Messiaen's interest in rhythm and his influence on his students. This influence can most readily be felt in Messiaen's *Quatre études de rythme* (1951), and my analysis focuses on the metric and rhythmic elements of the first etude, 'Île de feu I.'

The final chapter develops a concept of temporality that grows out of the intellectual world of Barraqué. Although it is well known that Barraqué was Michel Foucault's lover in the early 1950s, the full implications of their shared intellectual pursuits have not been fully grasped by prior scholarship. Their mutual interest in the writings of Hermann Broch, Maurice Blanchot, and Ludwig Binswanger clarifies some of the extent to which Barraqué absorbed important theses about the nature of human temporality from these philosophers. My analysis of Barraqué's piece, *Le temps restitué* (1957) for soprano and large ensemble illustrates how Barraqué interpreted the philosophical question of human temporality through the treatment of voice, expressivity, and large scale organization.

These composers do not share a single definition of time, but rather the same intellectual horizons. These horizons provide composers with a set of problems that are generative of a diversity of creative solutions. The question of time helped to articulate a set of common problems and challenges that these composers took to be of central importance to their compositional and theoretical efforts, and likewise defined a significant portion of their historical influence.

To my Family

Soli Deo Gloria

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Chapter 1: The Historical and Theoretical Horizons of the Question of Time

We experience things in time. Over time, our eyes follow the lines of a painting. Our tour through a building reveals its architecture to us. The novel unfolds as we read it. Even the most mundane objects have different facets that must be observed sequentially. And like these objects, music is experienced through the time span of perception. Musical pieces can also, like other things in the world, be thought of as a whole outside direct experience. True, it does seem that music has some privileged relationship with time, even if the meaning of that relation is not at all clear. Music is time-like. All this observation really accomplishes, though, is to recognize that the nature of time and the nature of music are problems in themselves.

If time and music have always been challenging philosophical topics, they become especially difficult to address in the twentieth century. Philosophical and scientific questions about time and musical style developed so radically and received such immense scrutiny that their mutual relationship became all the more difficult to articulate. Yet the group of composers who coalesced in Paris and Darmstadt after World War II, developing serialism and venturing into electronic music—the so-called postwar European musical ‘avant-garde’—took on this challenge directly. Many of those composers studying with Olivier Messiaen in the 1940s and 1950s, including Pierre Boulez, Jean Barraqué, Karel Goeyvaerts, and Karlheinz Stockhausen, shared a concern with questions of time and music. Some of those composers’ compatriots at the Darmstadt summer courses in the 1950s and 1960s, including Györgi Ligeti and the philosopher Theodor Adorno, also invested a considerable effort in thinking about time and its relationship with music. The years between 1949 and 1954 saw a concentrated musical and philosophical discussion in Paris, which transferred to Darmstadt in direct ways through a mutual engagement with the problem of time by composers and other intellectuals. This closely knit musical-intellectual world in the early 1950s helped to foster a common ground that would come to influence musical and philosophical ideas about time for the next twenty years, especially those coming out of Darmstadt. Rethinking traditional concepts of musical form, rhythmic organization, and other inherited musical practices, their inquiries reflected an intellectual sensitivity to the larger concern with time that marked philosophy and science in the twentieth

century. Time became a persistent trope within theoretical challenges and compositional practice. Moreover, thinking about time also provided a route into questions of musical experience, an issue which was often obscured in the discursive orientation towards compositional technique. In this dissertation, I clarify the significance of this interest in time as a question of experience, and show how these composers directly invoked a larger historical-philosophical discourse about time in their approach to music.

A history of musical time presents a unique challenge. I do not wish to supply a generic philosophical account of time in twentieth century music, nor is it necessary to merely describe the concepts of time that composers produced. Both of these, as I will touch on below, have been accomplished to various degrees. There is a decisive difference between a historical account of the philosophy of time and a philosophical treatment of the historically persistent metaphysical problem that time engenders. This difference, as I will show, became strategically useful for these composers and thus is all the more difficult to address. Composers approached ‘time’ as a question that was so foundational that it didn’t demand any account of its historical development. That their ideas on time would require a description of older traditions of thought, philosophical heritage, and, distastefully for them, the admission of influence, goes against the style of the self-constructed historical narrative that is definitive of the avant-garde. Their bias toward innovation is compounded by this ahistorical topic of time, an idea that is once immediately accessible to reflection and yet, as Augustine’s classical thought reminds us, is inherently obscure.¹ Not a small part of this challenge stems from the problem that the concept of time invites a certain amount of equivocality—a suspicion that, while thousands of years’ worth of philosophical, mythological, and theological reflections are all concerned with a nominally similar problem, there is not thereby a guaranteed communicability among their thoughts. In fact, it is unclear whether ‘time’ has much meaning outside of a historically situated discourse. The selective act by which a discourse is delimited calls to mind the classical Greek *horizon* in its verb form: those ideas which horizon the discourse clears its site of meaning, even if those horizons are not in themselves bound by that site. I do not mean to assert that these horizons open up a Heideggerian ‘disclosure space’ as some unconcealment of an essential language about time. An ‘essential’

¹ Augustine, *Confessions*, trans. Henry Chadwick (New York: Oxford University Press, 1991), 230.

grasping of time is, in fact, a persistent danger within this context: at any moment, it is possible to be swept up into the ahistorical, metaphysical contemplation about the nature of time itself that conveniently escapes its historical context.

The particular historical moment of post-World War II Europe is not simply circumscribed by a proliferation of various philosophies of time, though the philosophical concern with time in the twentieth century was quite expansive. More significantly, the composers themselves persistently expressed a concern with the issue in their music and their writings. The concern for time at this historical moment is not accidental. Indeed, it reflects a central characteristic of these composers' historical significance. It would be a mistake to once again reinscribe here a myopic vision of modernist progress that credits these composers as true discoverers of an essential nature of musical time, achieved through their relentless pursuit of the new. Their historical significance can no longer be read via that exclusive prioritization that was for some time a stylistic element of twentieth century music history. With this caveat in mind, it remains true that their interest in time is reflective of their involvement in a number of historically significant musical and intellectual developments in the twentieth century. Serial and electronic music were, after all, notably influential to the trajectory of twentieth century European music. Like other artistic changes of the past century in other mediums, the rapid developments of new techniques of creativity were met with older critical and analytical frameworks that seemed inadequate. This situation was amplified by the climate of Paris and Darmstadt in the decade after World War II. These composers' search for a useful music theory within the post-war mindset invited not only the rejection of outmoded theories, but a gesture of complete break with the past. Returning to the ostensibly ahistorical dimension of time, to some primary stage of drawing the first line on the blank slate of serial theory, carries with it a sense of the historical moment seeking an effacement of its historical dependencies. Though I will demonstrate a number of points of continuity of musical and theoretical thought, integral serialism did pose its own discursive challenges for a broader musical culture that still had not completely come to terms with the pre-war music of Arnold Schoenberg and Anton Webern.

Understanding time as a tool for theoretical discussions only explains so much, though. Time also provided a considerable amount of thematic content for early and mid twentieth century art, a fact that is reinforced in a number of musical works I discuss in this dissertation.

Early on, Proust's and Mallarmé's writings confronted traditional formal categories, but equally touched on time or versions of the eternal within the texts themselves. Salvador Dali's *The Persistence of Memory* (1931) and then *The Disintegration of the Persistence of Memory* (1954) brought the topic into the realm of surrealist painting. The black and white stills of Chris Marker's 1962 film *La Jetée* play with the formal constraints of cinematic temporality, but the plot equally takes up time travel as the only route to the redemption of a humanity destroyed by nuclear war. In a related manner, the works of Stockhausen, Boulez, Messiaen, Goeyvaerts and Barraqué share the two-fold interest in time as a theoretical and compositional problem, and time as a thematic anxiety within the content of their pieces.

Aesthetic and theoretical challenges as well as the recurrence of time as a theme within art can both be nested in the larger historical attention to time that manifested itself in science and philosophy. The reason for this wide-spread focus on time could have any number of explanations, but one of the most convincing interpretations understands the concern with time as a symptom of a reflexive historical consciousness that was definitive of the modernist sentiment in the twentieth century. This awareness of historical perspective realized that artistic creation, subjectivity, and even physical reality no longer rest on a self-evident and transparently linear time-structure. Jacques Derrida observed the uneasiness in twentieth century philosophy, science, and literature around the breakdown of those concepts of time that reinforced traditional notions of the sign and of reading and writing. His critique of the linear conception of time affected the very nature of signification, showing at a general level that inherited notions of time were inadequate to deal with the challenge of fully describing the nature of signs. Derrida argued that "The linearist concept of time is ... one of the deepest adherences of the modern concept of the sign to its own history."² However, the initial steps taken by artists toward a creative departure from such a limited concept of time remains embedded in a language of that modern concept. As will become clear over the course of this dissertation, the apparent appeal to scientific and mathematical concepts conceal a different layer of creative work, one which was critical to the self-evidence of linear thought. "The access to pluri-dimensionality and to a delinearized temporality is not a simple regression toward the 'mythogram;' on the contrary, it

² Jacques Derrida, *Of Grammatology*, trans. Gayatri Chakravorty Spivak (Baltimore: The Johns Hopkins University Press, 1997), 72.

makes all the rationality subjected to the linear model appear as another form and another age of mythography.”³ What Derrida calls the ‘linear mythography’ realized itself in the theory, the compositional practice, and even the thematic content of these composers and other artists just when it would have been expected that science and technology had most fully demanded a consensus about the nature of time.

Matei Calinescu’s observation on modernity’s concern with time clarifies in a different way why the topic might be in such a central position for composers’ efforts to contextualize themselves as the front guard of history. “Modernity in the broadest sense, as it has asserted itself historically, is reflected in the irreconcilable opposition between the sets of values corresponding to (1) the objectified, socially measurable time of capitalist civilization..., and (2) the personal, subjective, imaginative *durée*, the private time created by the unfolding of the ‘self.’ The latter identity of *time* and *self* constitutes the foundation of modernist culture.”⁴ Whether or not it is possible to go so far as Calinescu in placing time at the foundation of *modernity*, it is at least one of *modernism’s* persistent anxieties. The particular case of these European composers is one where modernism folds in on itself especially tightly: not only were these composers attentive to the changes in the concepts of time surrounding them, they also developed an aesthetic creativity towards the production or realization of time in music. Their creative engagement with time was both an exemplification of their modernist context as Calinescu and others have understood it, and a strategically reflexive deployment of a concept of modern musical development, in ‘front’ of which they placed themselves as the avant-garde.

The issue is slightly more complex, though. Calinescu lives within those same horizons (here, most audibly those of Henri Bergson) that the composers in question were also situated. The broad concern with time produces a difficult hermeneutic problem: how is it possible to find a perspective that does not rely, in some way, on the topic of study? Later, I propose a re-interpretation of this persistent tension between two paradigms of time that provides part of the solution to the potential circularity of the problem. My interpretation seeks an expansive enough approach to articulate the most general level of division, between what I characterize as a

³ Ibid., 87.

⁴ Matei Calinescu, *Faces of Modernity* (Bloomington: Indiana University Press, 1977), 5.

dimensional concept of time stemming from mathematics, and an intuitive concept of time that grows from the study of human perception. First, however, it is necessary to more fully describe the nature of this hermeneutic problem in which time is constantly seeking to escape from its history.

Perhaps a little ironically, Theodor Adorno and Michel Foucault, two philosophers who most thoroughly recognized the historical construction of language and meaning, were two of the most personally intimate figures to the composers who sought to justify the necessity of serialism with essentialist theses about their music's relation with time. An unsympathetic interpretation would point out that 'time' in the discussion of the avant-garde represents a strategic intellectual posturing—an attempt to gain a certain sort of authenticity, as Adorno might have called it, or via Foucault, a type of discursive power. This negative interpretation might point out that 'time' for these composers can often easily be reduced down to a simpler discussion about various musical elements *within* time. When, for example, Stockhausen wanted to discuss the serial organization of rhythm in relation to other musical elements, he put a spin on it by framing rhythm—an interesting topic, to be sure—within a statement on “...*how time passes*...”⁵ The ellipses in the title of his famous essay amplify this suspicious sense of profound depth, but the basic style is endemic to composers' writings and lectures of the 1950s. In his analysis of Anton Webern's String Quartet op. 28, Stockhausen claimed that, in this work “...we do not experience simultaneous temporal processes, what we experience is *time*, which is always more than the sum of quantitative alterations...”⁶ Stockhausen was perhaps the composer who most often sought to provide insight into nature of time itself, but he was not alone. “Without musicians,” Messiaen said, “time would be much less understood. Philosophers are less advanced in this field. But as composers, we have the great power to chop up and alter time.”⁷ Henri Pousseur claimed that “...the concept of time [and] the relationship of ... consciousness to it, were

⁵ Karlheinz Stockhausen, “...how time passes...,” *die Reihe 3* (Bryn Mawr: Theodore Presser, 1959).

⁶ Karlheinz Stockhausen, “Structure and Experiential Time,” *die Reihe 2* (Bryn Mawr: Theodore Presser, 1958): 74.

⁷ Claude Samuel, *Music and Color: Conversations with Olivier Messiaen* (Portland, OR: Amadeus Press, 1994), 34.

definitely altered by Webern.”⁸ When Boulez laid out his distinction between smooth and striated, these categories were not merely theoretical structures of musical material. Rather, he proposed that “they are the fundamental laws of time in music.”⁹ Slightly later, in Boulez’s 1976 program notes for the centenary Ring cycle at Bayreuth, Boulez writes that Wagner was “obliged to change the traditional structure of musical thinking—the most important of which was time.” Boulez remarked that “it is a strange fact that [Wagner] never refers to this primary component [of time] in any of his writings.”¹⁰ The questionable elision of musical content with time itself did not strike Boulez as a mark of his own cultural moment, a hint that the concern with ‘time’ marked off a particular horizon of thought. But rhythm, tempo, melody, form—how are any of these any more about ‘time’ than any other musical or physical process, or even of some object? A variety of responses can be given to this question, but only by interpreting the claims about the metaphysical and epistemological powers of the composer through a clearer account of those intellectual traditions that could justify this language. Rather than assuming their validity or invalidity from the beginning, this dissertation reconstructs these lineages of thought through a thorough study of the music and writings of composers and the philosophical background that they invoke. As will become clear over the span of this study, the most relevant sources of ideas were not always the ones that composers relied on to attempt to give their ideas credibility. This situation creates a complex assessment of the value of the cultural and intellectual capital that composers were attempting to accumulate—not only for an attempt at historical description, but also in the assessment of the value of their ideas for the development of post-tonal music theory.

This dissertation follows the argument that the concepts of time developed among this group of composers were not merely rhetorical efforts at sounding especially deep and erudite, though they certainly were calculated to help on that respect as well. Their approach to time illustrates a significant historical characteristic of the language and logic of modernist progress

⁸ Henri Pousseur, “Music, Form and Practice,” *die Reihe* 6 trans. Margaret Shenfield, (Bryn Mawr: Theodore Presser, 1964): 80.

⁹ Pierre Boulez, *Boulez on Music Today*, trans. Susan Bradshaw and Richard Rodney Bennet (London: Faber and Faber, 1971), 94.

¹⁰ Pierre Boulez, “Time Reexplored,” *Orientations*, trans. Martin Cooper (Cambridge, MA: Harvard University Press, 1986), 277.

that they employed. The question of time sheds light on the larger historical arena in which composers created their music and their theories. However, even as their approach to time reveals a considerable amount about the history of this era, it does not do so by way of clarifying some operational definition of time. Rather, time was a generative problem. The situation did not articulate a certain way of understanding time, rather the situation articulated a particular manner of questioning. To put it more strongly, the uses of various concepts of time created the particular philosophical problems that can be localized to individual composers. For this reason, the specific discussions of musical works that I undertake in the following chapters rely on the concepts of time that live in closest historical proximity to that music. My (often admittedly sympathetic) reconstruction of composers' and philosophers' ideas leads directly into the analytical methods I employ, rather than via some abstract version of time that might be built out of an ahistorical account of their theories. These ideas shape my treatment of a selection of musical works that, in their own way, have come to represent some of the most focused musical attempts at confronting past assumptions about music and time. The validity of this approach does not rest on the hope that the some essential version of musical time might be therein be discovered, but rather in the realization that any concept of time must from the beginning be thought within a horizon of discourse. Whether these horizons are satisfactorily large enough to contribute to a general theory of twentieth century music remains an important and certainly open question.

At a purely historical level, these composers' interest in time is well documented, and is a persistent topic in the construction of the history of twentieth century European musical modernism. Deborah Birch and Īlias Giannopoulos have taken on the task of explaining the role of time in the European avant-garde directly. Birch approaches time as an artistic medium that twentieth century composers found new ways of manipulating, interpreting a wide range of theoretical concepts as means of escape from an overarching principle of tactus that she argues dominated tonal music.¹¹ Giannopoulos synthesizes various philosophers' and composers'

¹¹ Deborah Birch, *Time in New Music*. (Master's Thesis: Brigham Young University, 1979).

perspectives on time into a general division between two modes, static and dynamic.¹² Some form of this distinction surfaces in a number of composers' ideas and does suggest that there were indeed a few major themes that composers seemed to share. A number of other studies take on the even larger project of proposing a philosophy of musical time, without a primary concern for the historical development of the ideas, even while entering into discussions of the twentieth century. As I will expand on below, Gisèle Brelet's encyclopedic study of musical time includes a critique of serialism and recent developments that she was aware of in the late 1940s.¹³ Eric Emery took on a similarly immense task of synthesizing a massive sweep of philosophical ideas to produce a concept of time that informs the study of music.¹⁴ Barbara Barry's philosophy of musical time relies on various traditions of philosophical thought, but also notably a selection of twentieth century composers' and philosophers' insights.¹⁵ Jonathan Kramer's persistent theoretical endeavors construct a philosophy of musical time that seeks relevance for a large historical sweep. Throughout his work, Kramer is able to approach both twentieth century music and earlier centuries, relying on a number of insights from composers like Stockhausen.¹⁶ Eric Clark presents an analytical approach that organizes material according to clear levels of 'temporal structure,' based on psychological accounts of experience.¹⁷ Benedict Taylor's recent book on the nineteenth century concept of musical time is also significant with respect to the

¹² İlias Giannopoulos, *Aspects of Time in the Music of the 20th Century: On the Problem of Time and Its Theoretical Presuppositions in New Music with Special Emphasis on the Music of the Avant-Garde of the 1950s and 1960s*. (University of Athens, 2011)

¹³ Gisèle Brelet, *Le Temps Musical: Essai d'une esthétique nouvelle de la musique* (Paris: Presses Universitaires de France, 1949).

¹⁴ Eric Emery, *Temps et Musique* (Lausanne: Editions l'Age d'Homme, 1975).

¹⁵ Barbara R. Barry, *Musical Time: The Sense of Order* (Stuyvesant, NY: Pendragon Press, 1990)

¹⁶ Jonathan Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (Schirmer/Mosel Verlag GmbH, 1988).

¹⁷ Eric F. Clark, "Levels of Structure in the Organization of Musical Time," *Contemporary Music Review* 2, no. 1 (1987), 211-238.

opposition from which twentieth century rhetoric often distanced itself.¹⁸ While the productivity of these various studies are undeniable, their work passes over an additional historical demand, namely that both philosophical theory and compositional practice are realized in a historical network of ideas that are not going to be transcended simply by referring to a purely theoretical concept of time.

The present challenge is not merely to describe an over-arching principle of time, nor to tabulate the variety of ways in which composers discussed time as an issue. There are certainly many similarities among various composers, but it is not clear that there is actually a single synthetic concept of time that can fully account for the variety of theories that grow out of the post-war era. The ideas about time that emerge from composers in the mid-century are so intimately linked to the historical moment, including the strategically intellectualized self-presentation, that the relevance of their ideas cannot be accepted without a critical appraisal of that very historical context. This problem is not unique to the question of time, but is a basic challenge to the construction of any historical picture of that era that does not succumb to the composers' strategic emphasis on progress, innovation, and their *Stunde Null* mentality. It is thus unclear to what extent their ideas are useful for understanding their music, or, as I mentioned, for the construction of broader theories of post-tonal music. Here the 'baby-bathwater' challenge, as it were, becomes increasingly difficult. It should not be taken for granted that the high modernist impulse that defined the post-war period has completely been extirpated from the historical methodology that studies it. The present task is thus not a mere description of the similarities among various composers' thoughts; a bona fide philosophy of musical time that grows from their observations; or a dismissive criticism of their observations. My critical project reveals the extent to which these composers' theoretical horizons were defined by a large and often mutually influential set of intellectual inspirations related in a somewhat complex network of ideas.

Certainly the more enthusiastic perspectives on the avant-garde rely on the profundity of time as a mark of the intellectual achievements of these composers. Paul Griffiths champions

¹⁸ Benedict Taylor, *The Melody of Time: Music and Temporality in the Romantic Era* (New York: Oxford University Press, 2016).

Messiaen's work as *The Music of Time*.¹⁹ Gilles Deleuze credits Boulez with the musical achievement of Proust's *pure time*.²⁰ Kramer's production of a whole taxonomy of 'time' systems grows from a reliance on Stockhausen's allegedly innovative ideas.²¹ On the other extreme, more critical accounts of the avant-garde are not sympathetic enough to attempt to rescue any historical meaning from the language of the Paris and Darmstadt circle of composers. Critical positions, especially from other composers, were completely dismissive of the European avant-garde and their intellectualism. Grisey scathingly claimed in a 1987 essay that "the notion of smooth (unmeasured) time and striated (measured) time described by Pierre Boulez is merely an invention of a conductor bereft of any phenomenological awareness."²² Although Cornelius Cardew was the English translator for Stockhausen's famous essay "...how time passes..." his shift to his radical Marxist critique of Stockhausen's work in the 1960s called out this sort of intellectualism as a retreat away from the real world into the ivory tower.²³ John Backus's review of *die Reihe* dismisses the rhetoric of this era as pseudoscientific pretentiousness.²⁴ These types of criticisms are not simply aimed at musical style or theoretical ideas, but reject the basic cultural capital that composers had sought to gain in their philosophical ruminations about 'time.'

The majority of more recent literature has focused its energy on reviving silenced voices and expanding the historical narrative into an increasingly inclusive image of twentieth century music. Often, this mode of critique relies on casting some suspicion on the discursive strategies of composers. Paul Attinello and Christopher Fox have addressed the problem that the prominent

¹⁹ Paul Griffiths, *Olivier Messiaen and the Music of Time* (Ithaca, N.Y.: Cornell University Press, 1985).

²⁰ Gilles Deleuze, "Boulez, Proust, and Time: 'Occupying without Counting'," *Angelaki: Journal of the Theoretical Humanities* 3, no. 2 (1998).

²¹ Jonathan Kramer, "New Temporalities in Music," *Critical Inquiry* 7 no. 3 (1981): 539-556.

²² Girard Grisey, "Tempus Ex Machina: A Composer's Reflections on Musical Time," *Contemporary Music Review* 2, no. 1 (1987): 240.

²³ Cornelius Cardew, "Stockhausen Serves Imperialism," *Stockhausen Serves Imperialism and other Articles* (London: Latimer New Dimensions, 1974).

²⁴ John Backus, "die Reihe: A Scientific Evaluation," *Perspectives of New Music* (1962).

view on the avant-garde, shaped in a large part by successful figures like Boulez and Stockhausen, marginalized other valid and important perspectives.²⁵ Georgina Born illuminated the institutionalization of a very specific trajectory of musical innovation within European music up through the 1980s at IRCAM.²⁶ Susan McClary expands these observations to include the theoretical literature composers produced. She notes that the avant-garde's "deliberate self-reification from the inside" relied as much on the surrounding discourse as it did the music itself.²⁷ McClary's observation that Milton Babbitt's *Philomel* contains a large potential for a feminist reading, one which was not invited by the composer, illustrates how even the most repertory classics of the avant-garde contain more meaning than the initially narrow self-constructed discourse allowed. While these studies do not address time as a central concept, they reveal the ways in which the discourse on music was reflexively constructed for music after 1945, and how the contents of that discourse are shaped by the personalities and indeed careers of those involved.

Mere expansion, however, does not confront the paradox that implicitly lives within a self-producing archeology. In my historical account of one of the most publically successful tribes of twentieth century music, a more central aspect of this difficulty comes to the surface: that their modernist musical world obscured precisely those details about itself which would most thoroughly complete its picture. As such, there are a few biases that are particularly difficult to critique while preserving the historical significance of the content. If the documents themselves were constructed with a strongly reflexive effort to define their own history, then a certain amount of careful deconstruction is needed, neither to reaffirm nor to negate their validity, but to more fully describe the productive significance of their inner dialectic. Especially when it comes to an intellectual history of an idea like that of time, it is necessary to seek out the implicit significance within the language of the relevant voices, in a sense giving them both more

²⁵ Paul Attinello, "Postmodern or Modern: A Different Approach to Darmstadt," *Contemporary Music Review* 26 no. 1 (2007): 25-37.

²⁶ Georgina Born, *Rationalizing Culture: Ircam, Boulez, and the Institutionalization of the Musical Avant-Garde* (Berkeley: University of California Press, 1995).

²⁷ Susan McClary, "Terminal Prestige: The Case of Avant-Garde Musical Composition," *Cultural Critique*, no. 12 (1989): 80.

and less credit than they deserve. For the problem does not lie in articulating a convergence of a single idea of time, but of a proliferation of ‘times’ that shared commonalities and starting points, a shared horizon, then travelled outwards in ways that were at once problematic and creative. These creative efforts, written and spoken in a language of abstract theory, are formed by a concrete historical sedimentation of ideas that contains a number of promising and productive theories.

My critical mode of approach recognizes the discourse about time as a historical question that lives within the language, the forms of thought, and the music of these composers. It is a matter of reading these documents critically but not dismissively. Specifically, there are four recurrent biases within many of the texts I deal with in this dissertation, biases that grow out of the modernist character of the discourse, and in fact define the most relevant characteristics of what modernism means with respect to the European avant-garde. After all, similar to the concept of time, the notion of modernism is a term whose meaning varies radically depending on the historical context. The particular way these biases shaped the most relevant historical documents in turn guides my critical approach to the topic. These biases are not then faulty premises that invalidate their conclusions, but are in themselves the structures of the horizons; the limitations of sight; the inability for a discourse, however self-reflexive, to fully step out of itself. Before turning to the specific composers and ideas I will cover, it will be helpful to fill out the implications of these biases in order to get a better picture of the overall historical moment.

Bias 1: The independent composer in the ivory tower

The first notable bias is that of independence. Within their lectures and published essays, composers presented themselves as relatively isolated artists, obscuring the community of individuals who collaborated and shared ideas. The distinction between the historical accounts of the mid-century avant-garde and their theoretical interests follows a similar path as the perennial artistic debate between formalist and historicist aesthetics. The difference is emphasized in the context of Paris and Darmstadt because the austere compositional discussions occurred among a tightly knit group of composers. Not only did Stockhausen and Goeyvaerts both pursue integral serialism in the early 1950s, Goeyvaerts was the godfather to Stockhausen’s daughter. Not only did Barraqué attend Messiaen’s class, his Paris apartment was the meeting place for the students after they left the course for the evening; Barraqué was influenced by Michel Foucault’s

writings, but they were also lovers. Ligeti was influenced by Adorno's writings, but also sat down with the philosopher at Darmstadt to discuss time in new music. While published lectures and essays presented the famous image of the ivory tower, especially at Darmstadt, personal letters and reminiscences recall a social dimension to the community who aspired to live at those high altitudes. Of course, it is natural to distinguish the history of the development of theoretical ideas from Unamuno's 'men of flesh and bone.' However, it obscures one condition of the historical context that does not arise out of the theoretical literature: that composers more than likely discussed ideas with each other and with other intellectuals in their circles. One challenge in articulating the nature of the avant-garde discourse on time is that beyond mere 'discourse' there was probably discussion—but discussions, debates, meetings, informal conversations that could never be captured in documents.

The biographical meeting of composers and thinkers does not accomplish all. With respect to the issue of time, the transmission of particular ideas, not general influences, is at stake. Otherwise, the 'degrees of separation' game would work quite magically. Take, as a critical example, Messiaen's class of 1951-1952. This was the year in which Barraqué, Stockhausen, and Iannis Xenakis all audited the course, and it aligned with Messiaen's time at Darmstadt. According to Jean Boivin's research, the main topic of this course was rhythm.²⁸ What occurs in this course? Does it provide evidence to suggest that composers shared philosophical ideas about time? From the retrospective view of Messiaen's published writings, it is not clear. Messiaen explicitly notes that he does discuss Bergson when his course becomes 'The Philosophy of Music,' in 1954. Did students gain any particularly Bergsonian influence in their studies with Messiaen before this year? Did the topic of time come up as a matter of discussion within the course itself, or perhaps in conversation as the young Barraqué and Goeyvaerts walked to the opera house together to hear Berg's *Lulu*?²⁹ If the documents of the 1950s cannot be read outside of their cultural and even sub-cultural context, it is equally misleading to take them out of the social relationships that form the backdrop of their creative and theoretical work. At the same time, there is very little specific evidence that arises from these premises.

²⁸ Jean Boivin, *Le Classe de Messiaen: Historique, Reconstitution, Impact* (Montreal: University of Montreal, 1992), 134.

²⁹ Goeyvaerts, "Autobiographical Portrait."

Bias 2: The independent scholar with original ideas

The second bias is the persistent emphasis on innovation and originality. These composers' isolated theoretical presentations avoid acknowledging common points of reference and shared ideas, with both the general discourse and specific discussions surrounding them. Besides neglecting to refer to their compatriots, much of the theoretical literature by certain composers lacked references to sources of outside influence from the wider cultural milieu in which they worked. References that were chosen have such a strong sense of rhetorical strategy to them that their force of influence remains a question.

This is not to say, of course, that their ideas were thereby truly original and without inspiration from elsewhere. This situation presents the empirical problem that a lack of references may or may not be intentional omission. If the question at hand concerns the lines of influence that ideas take through various composers and thinkers, then tracing these lines are not simply a question of reference. This problem can be compared to the evaluation of evidence of other modes of influence. Within issues of musical style, for example, influence can be illustrated with analytical observations on musical decisions: the dissemination and cultivation of serial technique, for example, can be pinned down fairly clearly. More abstract ideas like time are a different matter. The chronological element of the transmission of ideas requires an especially accurate account in the twentieth century, since the radical changes that occurred in musical and philosophical thinking could change within a decade, or remain influential over longer cycles of dismissal and revival.

With the notable exception of Messiaen's posthumous notes for his *Traité*, much of the writings and lectures by composers in the 1950s and 1960s represent a genre of writing that did not go out of its way to acknowledge influence. References that did emerge, like those in Boulez's Darmstadt lectures, served more as rhetorical devices whose main significance seems more to do with the intellectual capital of their obscurity than their central importance to the topic at hand. As to Boulez's actual influences, it is difficult to tell. Although Edward Campbell does not comment on the fact, his study of Boulez brings to light that the composer denies, at one point or another, any sort of intellectual influence from any of his teachers.³⁰ With Stockhausen's

³⁰ Campbell, *Boulez, Music and Philosophy*.

and Herbert Eimert's Darmstadt lectures, the scientific character of their references stand as objective facts and so need no historical account. Stockhausen offhandedly refers to "a few well-known theories of acoustics" in his essay, "...how time passes..."³¹ Barraqué's language is steeped with suggestions of philosophical inspiration, but in his writing, the explicit references are sparse. And for composers like Goeyvaerts who did not leave behind extensive theoretical writings, their intellectual backgrounds live within the biographical and archival evidence rather than published lectures and theoretical essays.

Even when there is a clear historical link between two composers or thinkers, another problem of influence remains in the question of depth. In the case of the history of philosophy, it is not unreasonable to suspect that a particular philosopher will have a thorough knowledge of the ideas of teachers, compatriots, famous texts and classical figures. Likewise, with composers it is similarly easy to observe that modes of influence run along the lines of compositional training that feeds on the close study of past composers. A large bulk of writings from mid-century composers, for example, concerned the interpretation and appropriation of older composers like Debussy or Webern. However, when these two fields become intertwined, when composers engage philosophers and vice versa, the dissemination of ideas becomes more complex. What is the extent of a particular composer's understanding of a particular philosopher? What is the rigor of technical knowledge a philosopher has on aspects of music? How honest are composers in their presentation of ideas (apart from their compositional work) with respect to intellectual influences? When is an idea so self-evident, or worn out, that it need not call to mind a particular lineage of thought? The historical contact points, the chronology of the ideas themselves, the status of explicit textual references, the apparent depth of understanding, and the purely implicit resonance among ideas, all provide necessary but circumstantial evidence in the attempt to answer these questions.

Ideas, after all, live a complicated life. Often the influence of a particular philosopher can be felt within a thread of discourse on musical composition, but what counts here as influence is a complex question. The 'three H's,' Hegel, Husserl and Heidegger, are pertinent examples because of the extent to which their philosophies have influenced concept of time in the mid-

³¹ Stockhausen, "...how time passes..."

century, but whose ideas were rarely referred to as direct musical influences. Overall, there is very little explicit reference to these three philosophers within the avant-garde composers. There are, to be sure, a few notable exceptions. Adorno's engagement with these three is famous, and Pierre Schaeffer and Rene Leibowitz also explicitly relied on phenomenological and existential philosophical sources in their thought. Yet the extent of even these figures' philosophical influence on the discourse of the avant-garde is difficult to articulate. Adorno's influence on the composers at Darmstadt was a contentious one, hardly providing evidence that his critique of particular philosophical figures entered directly into the thoughts of the composers who were not entirely open to his perspective. It remains a question as to how much Schaeffer and Leibowitz, in their roles as compositional pedagogues to the avant-garde, referred to their philosophical interests in their teaching.

There is also the somewhat vague question as to what extent particular philosophical ideas about time were 'in the air' for composers in touch with the academic world of the 1950s. Hegel is one example, but a prescient one, considering his broad influence throughout the twentieth century. Alexandre Kojève, Alexandre Koyré, and Jean Hippolyte were responsible for renewing an interest in Hegelian thought in the French academy, and even Foucault's first thesis was on Hegel.³² Kojève did spend time in his 1938 lectures on Hegel's philosophy of time, and his suggestively Heideggerian interpretation of Hegel's concept of time could have had large implications for the way in which composers thought about time in the 1950s. In Kojève's reading, Hegel unifies Spirit with Time such that every manifestation of Spirit is temporal. "The real presence of Time in the World ... is *Man*. Time is Man, and Man is Time. In the *Phenomenology*, Hegel does not say this in so many words because he avoids the word "man." But in the Lectures delivered at Jena he says: "Geist ist Zeit" (Spirit is Time). Time is the History of Man in the World. And indeed, without Man, there would be no Time in the World."³³ Here time is not a measure of Spirit, but is part and parcel Spirit itself. Further, the relationship between the self and time is closely related to Hegel's aesthetics of music. Hegel's music

³² David Macey, *The Lives of Michel Foucault: A Biography* (New York: Pantheon Books, 1993).

³³ Alexandre Kojève, *Introduction to the Reading of Hegel*, trans. James Nichols. (Ithaca: Cornell University Press: 1969), 138.

discussion in his *Aesthetics* likewise unifies the temporality of spirit, human subjectivity and the content of music. Speaking of musical rhythm in these lectures, Hegel reiterates this point: “The self is in time, and time is the being of the subject himself.”³⁴ To a degree, the modern concern with time and subjectivity that Calinescu had pointed out was tied up with particular philosophical concepts of time and the aesthetics of music whose development included Hegel. But Kojève’s famous lectures were in the late 1930s, and Foucault was well past his interest in Hegel by the time he was socializing with Boulez and Barraqué. Adorno’s version of Hegel, like the rest of his philosophy, would not be guaranteed any special level of influence over above his already contentious philosophical assessments of music. In Adorno and the other Hegelian strains of the 20th century, the dialectical mediation between subjectivity, time, and music remained a premise that had normative aesthetic weight, but a weight that did not always manifest itself as specifically Hegelian.

Another problem thus resides in the mode of application of philosophical ideas. For example, in cases such as the question of a philosopher like Hegel’s influence, there is an important issue of specificity of ideas that can easily get convoluted, even in a context where there is an explicit reference. It is a telling characteristic of nineteenth century music theory that Hegel’s philosophy was indeed influential for figures like Heinrich Schenker, Moritz Hauptmann, and A.B. Marx (though certainly to different degrees).³⁵ It is not so remarkable that these theorists were reading philosophy, but it is notable that they were not relying exclusively, or even primarily, on Hegel’s aesthetics; rather it was the more central issues of logic, ontology, and history that were taken into account in their theories of music. In a similar manner, Leibowitz’s reliance on Sartre’s ideas were not primarily concerned with the problem of time, even though Sartre spent considerable effort in challenging Husserlian and Heideggerian concepts of time and

³⁴ G.W.F. Hegel, *Hegel’s Aesthetics: Lectures on Fine Art*, trans. T.M. Knox. Vol. II (New York: Oxford University Press, 1975.), 908.

³⁵ Michael Cherlin, “Hauptmann and Schenker: Two Adaptations of Hegelian Dialectics,” *Theory and Practice* 13 (1988); Maryam A. Moshaver, “Structure as Process: Rereading Hauptmann’s Use of Dialectical Form,” *Music Theory Spectrum* 31, no. 2 (2009); A.B. Marx and S.G. Burnham, *Musical Form in the Age of Beethoven: Selected Writings on Theory and Method* (Cambridge University Press, 1997).

temporality.³⁶ The musical influence that Leibowitz was interested in instead had to do with the question of politics and the interpretation of history. Thus any line that could be traced among philosophers cannot thereby guarantee that specific theses on individual topics would be equally influential.

Husserl is another pertinent example that illustrates a different aspect of the problem. In Boulez's later lectures, he notes the relevance of Husserl's ideas to music. The mere moment of contact that Boulez mentioned between his and Husserl's philosophy is indeed a provocative one.³⁷ At the same time, the context of Boulez's reference is not one about Husserl's philosophy of time, but rather of the method of Husserl's Cartesian doubt and of *epoche* from which to question inherited musical practice. Hence even if it is a historical fact that Boulez had read Husserl, this claim is not sufficient to demonstrate a specific influence between Husserl's analysis of time and Boulez's theoretical concepts of time. When a composer or theorist from any era drops the name of a philosopher, this in itself has little to say about the content of that relation. Philosophers are known to discuss an immensely wide range of topics, and the transition from one aspect of their philosophy to another (their view of history, to their account of the passage of time at a perceptual level, for example) is not one that can be assumed from the general intellectual enthusiasm of a certain composer. The question not only stands as to whether or not a composer had read a philosopher, but to what extent the ideas were understood, and indeed what specific texts were studied. Moments of reference can supply the initial conditions for inquiring into the more provocative connections among composers, philosophers, music, and ideas, but not necessarily.

Heidegger is another illustrative figure with respect to time and the chronology of his influence. His reception depends very closely on the historical moment. His most influential work with respect to the question of time was of course, *Being and Time*, which was published in

³⁶ See Jean-Paul Sartre, *The Transcendence of the Ego: An Existentialist Theory of Consciousness* trans. Forrest Williams and Robert Kirkpatrick (New York: Farrar, Straus, and Giroux, 1988); Sartre, *Being and Nothingness* trans. Hazel Barnes (New York: Washington Square Press, 1992); René Leibowitz, *L'artiste et sa conscience: esquisse d'une dialectique de la conscience artistique* (Paris: L'Arche, 1950).

³⁷ Campbell, *Boulez, Music and Philosophy*, 45.

1927 and based on lectures of the preceding years. Heidegger's influence on the French philosophical world was quite extensive by the 1930s, exemplified by Kojève's lectures mentioned above, which while ostensibly about Hegel, supplied a Heideggerian reading of Hegel's philosophy of time. Subsequently, Sartre, Maurice Merleau-Ponty and other French thinkers developed independent lines of thought that were directly in response, though often critically to Heidegger's thought. Then, by the late 1940s, Heidegger's engagement with the Nazi party and the end of World War II made his philosophical work unpopular in France, and even into the 1950s the proponents of Heideggerian thought were marginal to the French academy. Even the existential thought that developed from Heidegger was somewhat dated by the mid-1950s, and it would not be until the following decade until his work was extensively translated into French and his influence would come to be widely accepted. The extent to which Heidegger might have supplied concepts of time for composers is thus a multi-faceted problem. As difficult as it is to trace the particular status of a thinker's influence within the philosophical world, it becomes more complicated to make connections between philosophers and the composer-intellectuals who may well have some engagement with philosophy, but not necessarily with the historically contemporaneous philosophers. Further, even if a composer like Stockhausen had picked up a copy of *Sein und Zeit*, to what extent would he have absorbed and synthesized the complex ideas on human temporality into his musical aesthetics? Indeed, perhaps a great deal, but with few explicit references to the effect, the matter is difficult to decide. A more diverse body of evidence would be required to support a historical influence.

Just as often as a composer refers to a specific philosopher, scientist, or theory, an influential source of thought will go unmentioned. Frequently, certain ideas (Stockhausen's statistical form or Boulez's smooth space, examples I will return to in later chapters) are suspiciously resonant with other concepts that are not explicitly referenced. In the majority of cases, when a composer's allegedly original idea about time is flushed out, it holds a strong resemblance to a philosophical idea that was present in the composer's training. The resemblance seems, in these cases, as relevant as the "smoking gun" annotation within a book on the shelf of a composer's personal library. In my chapters on Stockhausen and Boulez, I make specific arguments that places these composers' theoretical ideas within very specific intellectual traditions based on terminology and conceptual resonances. The historical evidence that these

composers were studying the thoughts of Bergson and other philosophical, scientific and mathematical writings is often absent, but, as I hope to show, approaches conscious omission.

All these relationships do begin to provide a picture of this discourse, but only in the broadest strokes. Within the context of a group of deeply intellectual composers, the horizons can be measured with these references and resonances, but it is always necessary to clarify the specific nature of any historical claims. The present task of this work is to articulate and then critique some of the strongest and most compelling discussions—again, not to synthesize the myriad ideas into a single, unified philosophy of musical time, but to establish the horizons and trajectories of a complex field of music and thought.

Bias 3: For and Against Hume

The third bias embedded in the avant-garde discourse was the shared musical style that revolved around common serial techniques. Serialism differed widely in the details of execution, but viewed from a broader perspective of twentieth century music, it provided a general aesthetic principle that differentiated these composers from much of European musical life. M. J. Grant follows Umberto Eco in considering the post-war avant-garde within the overarching context of ‘serial aesthetics.’³⁸ This general style shares an overarching aesthetic, but is by no means homogenous. The variety of different approaches to serial technique expanded quite drastically, and opened outward to include the adoption of aleatory and indeterminate construction. Also, as a number of composers of that era realized, the logic of serialism fed directly into the organized treatment of musical parameters within electronic music. Serial aesthetics thus involves a much larger scope of musical practice than merely those works that were constructed with strict serial techniques. Indeed, the diversity of serial procedures and their musical results were quite broad even within the Second Viennese School. Among these diverse applications of the concept of serialism, however, a similar argument was echoed periodically: that serialism as a general style provided a counterexample to older philosophical concepts of time that rested on the example of music.

³⁸ M.J. Grant, *Serial Music, Serial Aesthetics: Compositional Theory in Post-War Music* (New York: Cambridge University Press, 2001); Umberto Eco, *The Open Work*, trans. Anna Cancogni (Cambridge, MA: Harvard University Press, 1989).

In order to shape their historical narrative of innovation, it was necessary for the avant-garde discourse to construct a ‘traditional’ version of time that they were working to escape. As I mentioned, Taylor’s discussion of music and time in the nineteenth century provides most of what this traditional version might look like.³⁹ From a methodological perspective, I would argue that this traditional version was first exemplified by Hume’s empirical approach to the concept of time, which re-emerges in the twentieth century in a variety of ways. Hume’s concept of time does not stem from universal structures of human cognition nor to physical dimension of reality. Like all concepts within Hume’s empirical philosophy, his idea of time is a distillation of a variety of experiences from which we generalize an abstract notion. Thus Hume’s example: “Five notes played on a flute give us the impression and idea of time...”⁴⁰ Which five notes?—a naïve question, to be sure, but one that illustrates a particular understanding of time that is decisive for the twentieth century. Rather than assume Hume was thinking of a random sequence of five notes, it is more likely that the flute melody that offers him a sense of time implies a tonal one. To take a simple example, Handel’s Sonata Op. 1 no. 7 from 1728, (published for flute in London in 1733, six years before Hume’s *A Treatise on Human Nature*,) begins with these five notes:



Figure 1.1: Handel Sonata, m. 1

The impression of time that Handel’s flute provides has many familiar aspects. These five notes begin and end on C, with the leading B to the final peak of a gesture that completes an arpeggio on the tonic triad. But, coming to rest on the A of the continuo rather than a tonic bass note, the music launches into the rest of the piece with an implied I-vi progression that nevertheless does not upset the overall major tonality of the passage. The three sixteenth-note anacrusis motive, which will return later, also takes the first steps toward establishing a simple duple meter of the

³⁹ Benedict Taylor, *The Music of Time*.

⁴⁰ David Hume, *A Treatise of Human Nature* (New York: Barnes and Noble, 2005), 32.

Larghetto. The impression of time is not only one of sequence and duration, but also of directionality (toward a local conclusion or completion) by which the temporal object, the musical motive, completes itself as we gather it together. Following a Humean empirical method provides a rich image of time: it does not merely flow, it flows toward or away; it does not merely span a particular duration, it unites and completes a local musical process.

To be fair, Hume's central point in this particular thought was not to give a thorough description of time or a phenomenology of melody, but to illustrate how he accounted for our most fundamental structures of cognition via an empirical method that did not admit of *a priori* concepts. He does not expand on his brief musical example. But the temporal object he chooses—a small melodic pattern played by a flute—carries with it certain implications that are not found with other famous temporal illustrations like rivers, arrows, fire, or locomotion. Hume's musical example surreptitiously sneaks a number of characteristics into time, characteristics that are not entirely self evident. When philosophy in general gains a sense of time through music, time gains musical qualities.

By way of contrast, what if Hume had, by some unknown tradition of Scottish music, been thinking of an atonal melody? If it is true that time can be characterized by the contents of perception, then the notion of time that we cultivate would be changed by certain musical experiences. As many of the post-war avant-garde looked on the music of Webern as decisive for the change in the concept of musical time, this change can be heard in a different five note pattern played by a flute, taken from Webern's *Concerto* op. 24.

Figure 1.2: Anton Webern, *Concerto Op. 24, m. 38-40*

In the first movement of Webern's chamber *Concerto*, the flute's five notes follow a precisely constructed dodecaphonic process that fits tightly within the chamber ensemble. The flute's eighth note and sixteenth note rhythm is displaced in every moment from the notated duple meter, which in this passage is not emphasized by any of the instruments. In fact, the meter at this point seems to be reduced to a notational convention for the ease of performance. The flute's leaps from E \flat -D and G-F \sharp , while belonging to interval class 1, are spread over one, then two octaves, disrupting the sense of directionality that might have been implied by a movement by a semi-tone. The radical change in dynamics between measures 38 and 39 follows the ensemble's acute shift in volume, which serves as a disjunctive moment even while the basic composite rhythm of the ensemble continues without a break. The accent of the F \sharp in the flute struggles against the entrance of the oboe and the C \sharp in the piano. Thus the concept of time Webern's flute supplies is one that admits of discontinuity and shock; a field of time populated by disjunctive

events, rather than a flowing development of time fashioned by a process of growth and directionality.

As David Trippet summarizes in his essay on Hindemith and Satie, the implicit Humean premise that music serves as an illustration of time can be found in more recent philosophers like Susanne Langer, Husserl, Bergson, and Adorno.⁴¹ Husserl says, for example, that “a phenomenological analysis of time cannot explain the constitution of time without reference to the constitution of the temporal Object.”⁴² If melody is always the ready-to-hand temporal object, then the melodic construction of that temporal object will influence what conclusions could be taken from it. Given a tonal melody as the temporal object, Husserl’s analysis of time invites similar conclusions as a Humean perspective: a directionality, completion, and continuity of time that parallels music.

Notwithstanding the productivity of all these philosophical observations on the musical quality of time, these characteristics stand well over and above the basic dimensionality of an axis of time over which events are distributed. Strictly speaking, then, serialism’s confrontation with time is more precisely a confrontation with those concepts of time that implicitly rely on tonal musical examples. What most serial procedures produce, then, is a negation of the reinforcement that tonal musical passages imply like direction, movement, and completion. The clearest illustration of this attempt at progress was the mutual concern for the music of Webern. In their construction of the historical trajectory of musical modernism, then, it is not surprising that Stockhausen, Adorno, Pousseur and others all identified Webern as the composer who most fundamentally changed the nature of musical time. Even though the reception of Webern by the avant-garde was famously wrapped up with their modernist historical narrative, Webern’s music does seem to mark off a distinct paradigm, at least with respect to the sorts of musical examples that philosophy uses. As I will develop in Chapters 2 and 4, Adorno’s critique of Webern, Schoenberg, and Stravinsky identified this ‘static’ character of serial music in a variety of different ways. I will address Adorno’s negative judgment of the temporal consequences of

⁴¹ David Trippet, “Composing Zeno’s Time: Hindemith’s Erinnerung, and Satie’s Instantanéisme” *Journal of Musicology* 24, no. 4, (2007): 522.

⁴² Edmond Husserl, *Phenomenology of Inner-Time Consciousness*, trans. James Churchill (Bloomington: University of Indiana Press, 1964), 43.

serialism in these later chapters, but it is notable the extent to which the diverse serial techniques of various composers shared a common musical result, in their persistent negation of the traditional exemplification of time by music.

Serial music thus implicitly critiqued any tradition of thought for which a tonal melody provided an image for the flow of time. If a philosophical concept of time included any empirical method as to the nature of time's passing, then the various characteristics of time could be influenced by the unique examples that music provides. But as a number of philosophers recognized, not least of all Adorno and Brelet, serial music did not produce the same outcome. As I establish in each of my chapters, the particular manner in which various composers accomplished this negation of traditional melodic flow in their music can be characterized with a variety of distinct philosophical treatments of time and their accounts of the consequent image of time that their music invoked.

At the same time, as historically and stylistically significant as serialism is, none of my analytical discussions in the following chapters actually focus on serial procedures. Instead, I seek to draw attention to details that lie closer to the surface of the music: texture and timbre, phrasing, larger scale metric and rhythmic organization, sectional contrasts that uphold formal significance without reliance on the more well-defined serial techniques. Regardless of the constant debate about the audibility of serial procedures, these musical forces, ones that are not directly reliant on serialism, deserve more thorough study. One part of the reason for my de-emphasis on serial technique is that, as I said earlier, the concern with time in music was a concern with a level of musical experience that was not to be reduced down to compositional technique, and sought to describe the heard affect of their confrontations with musical time. This confrontation is not simply negation or subtraction, however, but the beginnings of a creative re-appraisal of the nature of time that no longer relied on a basically tonal image of time.

Bias 4: The Intellectual versus the Specialist

The final bias I want to point out is primarily a symptom of the Darmstadt lectures and publications: namely, the tendency for the discourse on composition to employ a scientific sounding technical language. Composers often laid claim to a modernism of scientific progress, but this community shared an intellectual culture that was defined by a passionate and extremely trans-historical eclecticism that distanced their work from the specialized focus of the scientific

and academic worlds, on whose periphery they were constantly located. Regardless of the actual scientific and technological content, there is a tension between this dimensional paradigm and the concept of time that I will call below an ‘intuitive’ concept of time. This polarity manifested itself within the musical avant-garde in a complex way, especially because of their enthusiasm for new technology. Many of their claims about the nature of time seemed to rely on the dimension of time within science, especially in Stockhausen and Boulez, but admitted considerably more into the concept of time than any actual scientific discourse would have allowed.

The question of science for these composers is related to a number of key historical characteristics of their practice. As Jennifer Iverson and Marcus Zagorsky have pointed out, for example, there is in fact some scientific content and method that was tied up in the ways composers like Stockhausen dealt with concepts of “material” and “statistical” musical constructs.⁴³ As Born and Katherine Kaiser describe, though, Boulez and Stockhausen’s compositional methodology was not primarily a research-driven scientific method.⁴⁴ However much these composers engaged with science and technology, they remained in an intellectual paradigm that would not admit to the exclusivity of scientific truth. The distinction between the scientific and intellectual worlds is not mutually exclusive or essentially combative, but rests on different sets of values that did indeed enter into conflict at numerous points over the last two centuries.

Like other areas of culture, composers in European society felt themselves to be at a radically new beginning after World War II, yet they still assumed a place in post-war society that was continuous in many respects with the figure of the early twentieth-century European intellectual. The intellectual in Europe is a focus of research in many fields, and was itself a topic

⁴³ Marcus Zagorsky, “Material and History in the Aesthetics of ‘Serielle Musik,’” *Journal of the Royal Music Association* 134 no. 2 (2009); Jennifer Iverson, “Statistical Form Amongst the Darmstadt School,” *Music Analysis* 33 no. 3 (2014): 341-387.

⁴⁴ Katherine Kaiser, *Singing Subjects/Vocal Objects: The Recorded Voice in Modern Music* (Dissertation: Stony Brook University, 2015); Born, *Rationalizing Culture*.

of reflection within that society.⁴⁵ By describing the particular characteristic of the composer-intellectual of the European avant-garde, this relatively close-knit group of composers who I address in this dissertation can be distinguished from composers in different countries, historical moments, and social statuses, thus articulating some of the boundaries of their discourse, however blurred these boundaries might be. The particular group of composers who I take up in this dissertation acted out different social functions than other European composers after World War II, as well as serial composers in the United States.

It is helpful to articulate the particular social form of what might be termed the “avant-garde composer-intellectual” with two other types of composer-intellectual: the academic and the specialist. Academics in this historical moment were not merely intellectuals. They were, as Pierre Bourdieu pointed out, “holders of an institutionalized form of cultural capital, which guarantees them a bureaucratic career and regular income.”⁴⁶ How much cultural capital an academic garnered outside of their economic capital depended on their work, their field, their publicity skills, and the larger social-political structure. Many European composers did reside in academic institutions during the 1940s and 1950s, (especially those who emigrated to the United States, such as Arnold Schoenberg or Paul Hindemith) but also Darius Milhaud, or Leibowitz in Paris, as have many major native United States composers since World War II (with notable exceptions like John Cage, Steve Reich, or Philip Glass). In fact, the United States context established by figures like Roger Sessions, Edward Cone, and Milton Babbitt allowed the role of the University-tenured American composer to become commonplace.⁴⁷ During the 1940s and 1950s, a host of composers inhabited the French, German and United States academies, as

⁴⁵ See Pierre Bourdieu, *Distinction: A Social Critique of the Judgment of Taste*, trans. R. Nice (Cambridge: Harvard University Press, 1988); Bourdieu, *Homo Academicus*, trans. P. Collier (Stanford: Stanford University Press, 1988); Jerome Karabel, “Towards a Theory of Intellectuals and Politics,” *Theory and Society* 25, no. 2 (April 1996): 205-233; Charles Kurzman, and Lynn Owens, “The Sociology of Intellectuals,” *Annual Review of Sociology* 28 (2002): 63-90.

⁴⁶ Pierre Bourdieu, *Homo Academicus*, 36

⁴⁷ Roger Sessions, “The Composer in the University,” *Roger Sessions on Music: Collected Essays* (Princeton: Princeton University Press, 1979), 193-203.

pedagogues with sometimes more, sometimes less, connection to the aesthetic directions that the avant-garde were taking.

By significant contrast, many European avant-garde composers in the 1950s and 1960s remained peripheral to academic institutions—initially, of course because of their relative youth, but even later as their prominence grew. Those composers ensconced in the French and German academies were certainly influential figures in their own right, but seemed distant from the figures attending Darmstadt after 1948.⁴⁸ One exception to this situation might be Olivier Messiaen, whose course at the Paris Conservatoire became a significant point of departure for the issue of time. However, up until his official position as a composition teacher in the 1960s, his unique class was known for its difference from the rest of the Conservatoire, and the nature of this difference—at least from the reminiscences of his pupils—is telling. Messiaen’s class, while being part of the Conservatoire, is famous for its peripheral relation to the academy, especially in the 1940s and 1950s.⁴⁹ Of course, once Messiaen became more established, his properly academic authority rose as well.

In contrast to the academic specialist who claimed authority over a particular field, there is a notable spirit of eclecticism that Messiaen fostered in many of his students. For example, the content of his seven-volume work, *Traité du rythme, du couleur, et d’ornithologie*, contains a massively eclectic approach that echoes his well-known course topics, an eclecticism of a different spirit than the usual pedagogical approach of a professor-academic. While Leibowitz’s well-known engagement with philosophy focused on the specific issues of the politics and aesthetics of music, Messiaen reached into a wide variety of fields for his inspiration. Although a certain amount of eclecticism might be found in other composition teachers, it was central to the intellectual background that fostered the avant-garde. The literary and philosophical interests of Boulez, the simultaneously spiritual and scientific world of Stockhausen, the deeply literary

⁴⁸ See Edward Campbell, *Boulez, Music, and Philosophy*; Jane Fulcher, *The Composer as Intellectual: Music and Ideology in France, 1914-1940* (New York: Oxford University Press, 2005); Mark Carroll, *Music and Ideology in Cold War Europe*, Cambridge: Cambridge University Press, 2003); M.J. Grant, *Serial Music, Serial Aesthetics*.

⁴⁹ Boivin, *La Classe de Messiaen*; Boulez, “Olivier Messiaen,” *Orientations*.

inspirations of Barraqué all constantly seek broad intellectual horizons that are not defined by traditional academic distinctions.

Another representative moment of this eclecticism worth mentioning is the figure of Gisèle Brelet. Boivin's archival research notes that Brelet was either a guest at Messiaen's class, or her work was their topic of study in the early 1950s. Brelet is also mentioned in Messiaen's *Traité* as an important source for the composer's concepts on time, and her work is one of Deleuze and Guattari's sources for their treatment of music and time in *Mille Plateaus*. Having just completed her doctorate in philosophy and biology at the Sorbonne, Brelet's two-volume work *Le Temps Musicale*, published in 1949, was an encyclopedic critique of ideas on music and time. Brelet's writing tapped philosophical positions from Pythagoras, Heraclitus, Aristoxenus, Augustine, and other ancient philosophers, to Kant, Hegel, and Schopenhauer; from Bergson and Heidegger to Souvtchinsky, Jankélévitch, and Boris de Schloezer. Her approach also relied on scientific and musicological sources: Wundt, Seashore, Kurth and Hugo Riemann, Helmholtz, and a thorough account of her contemporaneous studies in music psychology.⁵⁰ Brelet's goal was to offer an aesthetic study of music from a philosophical perspective oriented on time, the first volume covering melody, harmony, and rhythm; the second volume organized around problems of form. Her expansive claims synthesized a wide variety of musical discussions (gamelan and other non-European traditions also make an appearance) into a focused inquiry into time. Brelet's synoptic eclecticism matched the spirit of Messiaen's own eclecticism, though the extent of their interactions is not clear. Like the more well-known philosophers to influence this group of composers, Brelet's approach to music and time was quite broad and crossed over a number of disciplines. If her specific philosophy was not often quoted, her scope illustrated the inclusive and eclectic method that Messiaen and others shared.⁵¹

In addition to their eclecticism, a second differentiation came from composers' relative engagement with science and technology. These have been common historical themes with which to contextualize many European and American composers after World War II. The question of technology became especially prevalent once composers entered the electronic music

⁵⁰ Gisèle Brelet, *Temps Musicale*.

⁵¹ The divergence between Brelet's contributions to mid-century thought and her almost complete lack of recent critical reception deserves further investigation.

studios of Paris and Cologne. While it is undeniable that electronic music was a major element of the serial and post-serial avant-garde, the extent to which the European composers were actually “scientific” is, as I pointed out earlier, a matter of debate. There is a subtle but decisive difference between musical praxis that engages technology and uses it extensively, with an aesthetics that seeks to align itself with a scientific paradigm of thought. The entire issue is of secondary importance to the more generalist intellectualism, for which science and technology was but one moment. Regardless of the actual validity of any scientific method or content of composers, it cannot be argued that this was the defining characteristic of the music. Even as the composers entered into the electronic music studios, the actual activity of Stockhausen in Cologne and then later of Boulez at IRCAM does not seem primarily “scientific” in the sense of highly controlled research following a scientific method.

This difference becomes more pointed in the contrast with Milton Babbitt’s form of specialization in the United States. While the similarities in American and European aesthetics are undeniable, Milton Babbitt made a different cultural appeal than his European intellectual counterparts might have claimed. The specialist, as a scientist-like figure, works within a field and does ‘research.’ This research epistemology was somewhat more concretely aligned with aesthetic claims in Babbitt and his approach to integral serialism. As Boulez and Stockhausen entered into the realm of electronic music, much of their work took on the specialist character, both in terms of the requirements of production and of consumption. However, while Babbitt actually took his place as part of the Princeton faculty and maintained a fairly consistent mathematical and technical approach to his music in his publications, it seems that Boulez and Stockhausen only appealed to science and mathematics at a very particular moment in their career. Boulez was constantly shifting between scientific references and those of Proust and Mallarmé, and by 1968, Stockhausen had fully entered into the esoteric, asking musicians to “play a vibration in the rhythm of the universe.”⁵² Even in his later role at IRCAM, Boulez did not emphasize the immensely technocratic dimension to his creative world. As Born described, the engineers who were responsible for the technical operation of IRCAM were not high on the social hierarchy of the institution. By contrast, Babbitt’s place at Princeton represented a

⁵²From Stockhausen, *Aus Den Sieben Tagen*, ‘Verbindung’ (1968)

different intellectual, social, and even class, status than avant-garde European composers, at least during the 1950s. Unlike the vocations of many European composers, Babbitt was a faculty member in both the music and mathematics departments, and produced a fairly consistent theoretical approach to music that relied on mathematics. His famous essay, ‘The Composer as Specialist,’ relied precisely on the image of the researcher who made discoveries, which seems to align with his actual vocation for some time.⁵³

Intuitional versus Dimensional Concepts of Time

A tension has persistently risen to the surface in the outline of these discursive biases. This tension aligns closely to the conflict that held sway throughout much of the twentieth century between paradigms of humanistic and scientific thought. As Calinescu’s comment above indicates, some of this conflict was realized within general conceptualizations of time. On one hand, there are versions of time which admit that the contents of perception and the structures of human existence are relevant objects of investigation—what I will call, following Bergson and Husserl, an ‘intuitional’ methodology to time. On the other hand, there is the understanding of time as a pure dimension, the x-axis of the calculation of processes, a matrix whose structure does not change because of its contents—what I will call the ‘dimensional’ concept of time. These two categories are not monolithic concepts, nor do they have much explanatory power in themselves as to the conclusions about time that philosophers and composers have made. Within each of these lines of thought, there are a variety of different philosophical approaches, some more or less exclusive to others. The ‘intuitional’ and ‘dimensional’ distinction attempts to describe, in the broadest terms, these two often divergent trajectories of thought in the twentieth century. The difference is significant, because only by illustrating how composers situated themselves between the two is it possible to fully account for the horizons of their discourse. After all, if the time ‘dimension’ is not affected by its contents, then there is no relevance to the discussion of ‘musical time’ as something unique over against any other physical process. There would only be the measurement of musical parameters within time. From this perspective, the interest in time by these European composers would end up reducing down to meaningless

⁵³ Milton Babbitt, “The Composer as Specialist,” *The Collected Essays of Milton Babbitt* (Princeton: Princeton University Press, 2003), 48-54. Originally published as “Who Cares if You Listen” *High Fidelity* 8, no. 2 (1958): 38-40.

rhetoric. More accurately, the interest in musical time would not simply be meaningless; it would validate and exemplify the most persistently negative criticisms leveled at them by their opponents. However, within an intuitional framework in which there is a mutual relationship between music and time, the broadly intellectual patterns of thought of composers gain their most meaningful interpretation.

It might be argued that this distinction is nothing more than McTaggart's A series or B series, Bergson's distinction between true duration and spatialized time, Deleuze's contrast between Aion and Chronos, or Calinescu's division quoted above.⁵⁴ Indeed, this list could be expanded to the conflicts within Parmenides and Heraclitus, time and eternity, or any number of different polarities between two modes of time that have emerged in the history of thought. By referring to 'intuitional' and 'dimensional' concepts of time, I am attempting to avoid, as much as possible, a circular reliance on the narrative that I seek to describe. In my attempt at describing this polarity I do not want to reinforce an assertion that there is some 'true' version of time that philosophers, mathematicians, scientists, and composers have 'discovered.'

Dimensionality recognizes time as a calculable, uniform field. If there is curvature or relativity to the time dimension, then these alterations still require a mathematical model that approximates those changes to the dimension itself – and only at the cosmological level, not within the span of human experience. In this context, differences between musical parameters are not indexed to different qualities or characteristics of time; they are simply different scales of events per second. Correlatively, within the study of acoustics, physics, and even biological sciences like physiology, it is necessary to formalize time into a dimension in order to guarantee a mathematically rigorous description of physical and biological processes. The dimensionality of time is thus not merely a useful way of thinking about time in science and mathematics; it provides an important foundation for the consilience among different fields.

The dimensional concept of time appears at first glance to be the basis for those European composers who rely on the study of mathematics and acoustics to explain their concept of time. But this style of presentation obscures a more intuitional approach. As I will argue more

⁵⁴ See J. Ellis McTaggart, "The Unreality of Time, *Mind* 17, no. 4 (1908):457-474; Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness*, trans. F.L. Pogson (New York: Dover, 2001); Gilles Deleuze, *The Logic of Sense*, trans. Mark Lester (New York: Columbia University Press, 1990); Calinescu, *Faces of Modernity*.

extensively in the following two chapters, the intellectual background of the avant-garde implicitly relied on methodological intuition: a method that validated personal experience as a site of philosophical investigation, dabbled in a variety of disciplines, and allowed for a creative production of concepts of time. This divergence between the apparently dimensional paradigm of thought within mathematics and acoustics, and the actual content of their theories, reveals a complicated situation. For Boulez and Stockhausen especially, dimensional sounding concepts of time conceal more centrally important intuitional ideas. For Messiaen, Goeyvaerts, and Barraqué, this concealment does not occur, but it is equally important to emphasize the breadth of variety that various intuitional models of time allow, even if the dimensional concept of time never played a primary role.

My conception of intuition stems from the nineteenth century response to Kant's thesis that time is a fundamental cognitive structure of human existence, which he named as intuition. Intuition in the broadest post-Kantian sense situates the problem of time within human cognition and experience. This is not to say, however, that there was much agreement about the consequences of this idea. This ostensibly subjective, internal mode of intuition was equally a universal linear structure that, as I will expand on later, provided the foundation for mathematical models of time and processes in science. The perspective of neo-Kantian German scientists like Hertz and Helmholtz constructed scientific knowledge on an essentially dimensional concept of time that came to establish the development of powerful mathematical models to aid in the development of science and technology. At the beginning of the twentieth century, though, both Bergson and Husserl radically developed important nineteenth century critiques of scientific epistemology and its dimensionality of time in different but related ways, both returning to what they described as 'intuition.' In this context, 'intuition' became a concept that referred to an empirical methodology that sought to describe human reality through the description of the foundationally constructive act of perception. Intuition thus describes systematic forms of empiricism that differ from scientific method. Husserl makes a clear contrast between normal empiricism and the special character of phenomenological analysis. Husserl seeks to go deeper than an empirical reliance on experience for "something more universal: 'intuition;'" and by doing

so we reject the identification of science taken universally with experiential science.”⁵⁵ Intuition was one element of this analysis, and forms an important part of his phenomenological method.

Bergson begins with a similar position, though there is no doubt some considerable space between the two philosophers. In *Matter and Memory*, Bergson makes a significant clarification about the intuitive method and contrasts it with empiricism based on the distinction between the continuity of duration and the discontinuity of abstraction.

That which is commonly called a fact is not reality as it appears to immediate intuition, but an adaptation of the real ... to the exigencies of social life. Pure intuition, external or internal, is that of an undivided continuity. We break up this continuity into elements laid side by side, which correspond in the one case to distinct words, in the other to independent objects. But, just because we have broken this unity of our original intuition, we feel ourselves obliged to establish between the several terms a bond which can only then be external and superadded. For the living unity, we substitute the factitious unity of an empty diagram as lifeless as the parts which it holds together. Empiricism and dogmatism are, at bottom, agreed in starting from phenomena so reconstructed.⁵⁶

Bergson’s intuition is thus the basic methodology through which duration must be approached. Consequently, time is a structure of human existence, and understanding nature and perception requires a return to the structures of being that time upholds. Whatever contributions cognitive science, psychology, and the like offer, they are, for Husserl and Bergson, secondary.

I will return to the relationship between Bergson, science, and the musical avant-garde in later chapters, but it is worth noting that Bergson’s thought reflected the historical context quite strongly, and its historical significance must be related to Europe at the end of the nineteenth century and the beginning of the twentieth.⁵⁷ Indeed, the very conception of time is not only a

⁵⁵ Edmond Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy* trans. F. Kersten (Boston: Kluwer Academic Publishers), 37.

⁵⁶ Bergson, *Matter and Memory*, 183. See also Deleuze’s expansion of this point in Gilles Deleuze, *Bergsonism* trans. Hugh Tomlinson and Barbara Habberjam (New York: Zone Books, 1988).

⁵⁷ See Peter Galison, *Einstein’s Clocks, Poincaré’s Maps: Empires of Time* (New York: W.W. Norton and Company, 2003); Stephen Kern, *The Culture of Time and Space 1880-1918* (Cambridge, Mass.: Harvard University Press, 1983); Mark Evan Bonds, "The Spatial Representation of Musical Form," *The Journal of Musicology* 27, no. 3 (2010); Daniel Grafton Anthony Rosenberg, *Cartographies of Time* (New York: Princeton Architectural Press, 2010). As Bonds points out in his history of the spatial thinking of music, even time’s representation is

philosophical issue, but touches on many aspects of culture and thought of a historical moment. This historical context is captured in the famous confrontation between Einstein and Bergson in 1922 in their public debate at the Société française de philosophie in Paris and the subsequent arguments about the relationship between science and philosophy. This meeting represents the radically different paths that opened into much deeper methodological divisions between scientific and humanistic forces that were pitted against one another throughout the twentieth century.⁵⁸ When Bergson and Einstein had their discussion about the nature of time, it was not merely time that was the issue: Einstein put the very relevance of philosophical method into question, upholding the scientific rationality as the only valid approach to time. From Einstein's perspective, Bergson's philosophy was not simply incorrect about time, but irrelevant. If only physics and perhaps by extension, psychology have anything to say about time, then there is no room for mere philosophical contemplation about the temporal aspect of perception, and certainly not of nature itself. From this scientific perspective, the philosophy of time would be irrelevant to the psychological or psycho-acoustical approach to music. The scientific consensus on dimensional space-time, versus Bergson's assertion that there was more to be said, marks a boundary of intellectual worlds.

The intuitional allows what the dimensional concept of time does not, at least at the methodological level. While there is an inevitable naiveté to the claims of composers regarding their insights into 'time itself,' there are also ways in which their ideas on time and music do have a rigor and consistency. This consistency is not offered by science, but by the European

highly determined by the historical context. The notable extent to which time became an issue in Germany and France in early twentieth century had repercussions even for the post-war avant-garde. Bergson's cultural prominence, for example, cannot be separated from his response to the developments of the conception of time in the late 18th and 19th centuries, where the 'spatialization' of time into a geometric dimension was the consequence of developments in mathematics and physics, and more significantly, to the general rationalizing of life in his modern world: science and modern life both asserted a purely abstract temporal dimension which was basically indistinct from the other spatial dimensions.

⁵⁸ Jimena Canales, "Einstein, Bergson, and the Experiment That Failed: Intellectual Cooperation at the League of Nations," *Modern Language Notes* 120 (2005).; Canales, *The Physicist and the Philosopher: Einstein, Bergson, and the Debate that Changed our Understanding of Time* (Princeton: Princeton University Press, 2016).

tradition of philosophy that offered potential frameworks that could rigorously account for the sorts of ‘time’ composers were after. It is for this reason that I frame composers not into any scientific field, as their style might dictate, but into the philosophical realm. In the following chapters, the ideas of Hegel, Bergson, Heidegger, and others come into play for a variety of historical and theoretical reasons. From the philosophical perspective, there is quite a divergence between these thinkers, but in regard to the relationship between music and time, they each contribute a perspective that legitimizes a sort of music-time identity. Michel Dufrenne offers a summary version of this perspective, noting that in these contexts, music “expresses its own duration by measuring, not the time which contains the object, but the time which it *is*, the internal becoming which constitutes it.”⁵⁹ Here, the scientific-like style of exposition by composers make un-scientific claims about the nature of time, if science here means the paradigm of dimensional space-time with which our psychological experience of duration and process have secondary relation. To speak of ‘musical time’ at all is to grant some of Bergson’s claim in his debate with Einstein: that a dimensional account of time does not capture its complete nature, nor even what is central to the question.

Chapters

The following chapters focus on five composers: Stockhausen, Boulez, Goeyvaerts, Messiaen, and Barraqué. These composers concerned themselves with time in their writings, and time became a theme in some of their most notable works. They also shared the same historical moment to a large extent. Their historical proximity provides evidence that the themes to emerge in their ideas share common roots, and that the similarities in their thought have historical significance. There are many different threads of thought that surface in each chapter, but there are three main topics whose development necessitates something other than a purely chronological presentation. Chapters 2 and 3 cover the music and writings of Stockhausen and Boulez, two of the most publically successful figures in the European avant-garde. Both of these composers, I will argue, must be understood within the context of the two opposing concepts of time I refer to above: one based on the intuition of the flow of human experience and the other

⁵⁹ Mikel Dufrenne, *The Phenomenology of Aesthetic Experience*, trans. Edward Casey (Evanston: Northwestern University Press, 1973), 262.

based on the abstract dimensionality of time. The particular way that this opposition is structured by the heritage of the influence of Bergson on Messiaen, Adorno, and others, and of the scientific and mathematical conception of time that the composers invoke, is an important detail that frames the larger picture of the mid-twentieth century. With both these composers, there is an attempt to present time in music—specifically to present, in some way, the dimensionality of time within an intuitional context.

In Chapters 4 and 5, I focus on a different interpretation of similar efforts, in which the abstraction of dimension is interpreted as the transcendental plane of eternity. However, the meaning of this conception of time varies depending on where its interpretation grows from. For Adorno, it was this rhetoric of transcendence that made serial music culpable to its historically traumatized moment. However, for Messiaen and Goeyvaerts, this element of serial organization provided a mode of rational ascent to the divine. The musical characteristics of ‘dimensional’ and ‘eternal’ are closely related, but the difference in focus marks off a distinct set of theoretical concerns. Goeyvaerts’s early attempts at integral serialism invoked Adorno’s critique of ontology via a psychoanalytic image of the spatialization of time of the subconscious. For Messiaen, however, both the concept of stasis and the possibility of rational transcendence are given meaning by the religious interpretation based on classical discussions about time and eternity.

In the final chapter on Barraqué, Adorno’s concern with the temporality of the subject and Messiaen’s interest in the eternal is expressed in an entirely different context. Barraqué’s temporality parallels the themes of psychoanalysis, eternity, and the general philosophical interest in the subjective forms of time that were present in other composers. These themes are not framed in the same way however, and gain their discursive meaning from the French intellectual tradition that Barraqué engaged with through Foucault. Rather than focus on the musical realization of certain concepts of time, Barraqué’s interest in human temporality brings the question of time into the realm of subjectivity, expression, and the dissolution of the musical persona. Barraqué’s line of investigation is thus closely related to his contemporaries, but gains a different perspective from the parallel intellectual trends he was familiar with.

These related threads of thought about music and time in Stockhausen, Boulez, Goeyvaerts, Messiaen, and Barraqué do not provide a unity of ideas that emerges in a grand synthesis of musical-temporal philosophy. On the surface, there are many theoretical similarities,

but it is not the case that these resonances had the same musical outcome. More accurately, it could be said that time is a guiding problem whose various solutions shape my line of thought: what serialism offered in its post-war European instantiation was a mode of composition that did in fact do away with traditional expectations of musical experience, especially that experience where a musical process feels directional, towards a tonal or gestural climax, conflict and resolution, or other dynamic tendencies. These alone do not present fundamental aesthetic problems, and are hardly worthy of the radical rhetoric that became a problematically exclusive narrative of the twentieth century. But the composers of that era, constantly seeking to define their own historical significance, landed on these issues as definitive questions of ‘time.’

In the most general sense, then, the aesthetic problems of serialism and the variety of solutions to those problems were framed by a shift in musical aesthetics that brought up philosophical problems that composers and thinkers placed within the question of time: if musical flow no longer feels self-evidently time-like, what is the most positive and meaningful way to characterize these new musical possibilities? The recurrent themes of dimensionality, stasis, eternity, trauma, transcendence, and existential temporality can all be considered preliminary attempts at answering this question.

The ultimate consequence of the method I take in the following chapters is that the present work is not merely, or even primarily, a historical description of a discourse, but a critical reconstruction. There is a large body of archival material that would no doubt draw stronger lines between ideas and composers that has not been referenced. The chapters that follow examine the discourse on time, in the spirit of Kant’s critical project: in “the determination of its sources as well as its range and bounds...”⁶⁰ Whether the composers’ understandings of time are at all productive, or whether they would have connected their thoughts together in the way I have, are different questions than the present one, namely, of the origins, range, and boundaries—the horizons—of this music and theory.

⁶⁰ Immanuel Kant, *Critique of Pure Reason*, trans. Werner Pluhar (Indianapolis: Hackett Publishing, 1996), 8.

Chapter 2: The Bergsonian Horizons of Stockhausen's Concept of Time

Stockhausen's relentless promotion of new music at Darmstadt during the 1950s relied in part on his attempt to construct an equally innovative theoretical approach to these new musical issues.¹ In his public explanations of these theories in *die Reihe* and in his radio lectures, the question of time held central importance. Whether discussing the influence of Webern in his 1954 essay "Structure and Experiential Time," his own compositional technique in his 1956 essay, "...how time passes..." or his radio lectures on statistical form (1954), moment form (1960), or "The Unity of Musical Time" (1961), Stockhausen worked from the premise that there is something about time itself to grapple with in music.² What 'time' means for Stockhausen, though, is not immediately self-evident. A champion of originality, Stockhausen made few explicit references to other ideas about time within his lectures. Yet because of their particular intellectual surroundings, Stockhausen and his compatriots were decidedly situated by a broader discourse on time that came into focus in the early twentieth century. This discourse was marked by a polarization between two meanings of time, both of which sought metaphysical priority over the other. On one hand, the mathematical model of time that served science and technology rested on the abstract dimensionality of time that had been cultivated in the 18th and 19th centuries after Newton, Kant, and others. Often, this perspective became synonymous with concepts of time labeled as 'spatialized,' 'rationalized' or 'quantitative,' but not always—and 'space' is hardly a univocal term from which to situate the problem. In order to avoid limiting the discussion to any single thinker, I will call this family of notions 'dimensional.' There was as much differentiation

¹ Martin Iddon, *New Music at Darmstadt: Nono, Stockhausen, Cage, and Boulez* (New York: Cambridge University Press, 2013); Gunther Schuller, *Gunther Schuller: A Life in Pursuit of Music and Beauty* (Rochester, NY: University of Rochester Press, 2011); M.J. Grant, *Serial Music, Serial Aesthetics: Compositional Theory in Post-War Europe* (Cambridge: Cambridge University Press, 2001).

² Karlheinz Stockhausen, "Structure and Experiential Time," *die Reihe 2: Anton Webern* (Bryn Mawr: Theodore Presser, 1958); "...how time passes..." *die Reihe 3: Musical Craftmanship* (Bryn Mawr: Theodore Presser, 1959); "Von Webern zu Debussy: Bemerkungen zur Statistischen Form," *Texte zur Elektronischen und Instrumentalen Musik* (Köln: Verlag M. DuMont Schauberg, 1963); *Stockhausen on Music* (New York: Marion Boyars, 1989).

among different philosophies of time as there was agreement, but a general conception of time as dimension held sway within mathematics and most fields of science. In the scientific consensus on ‘space-time’ for example, discussions about ‘time’ would seem to be beholden to the dimensional conception of time as a single, independent variable within mathematical or scientific calculation—or alternatively, in itself, nothing at all.³ On the other hand, an opposing concept of time upheld the significance of flowing duration, process, and the fundamentally human character of temporality. The philosophies of time exemplified by Bergson and Husserl sought to retain the dynamic flow of time as they saw it manifested within perception and nature. This tradition, too, came into focus in the 19th century as an opposition to dimensional views of time, and then likewise came to influence philosophical and psychological discussions throughout the twentieth century.

Stockhausen’s views on time were framed within his rhetorical emphasis on scientific discovery, but his discussion is closely linked to both these older traditions about how time should be thought. Most pertinently, his unification of different musical parameters within a single time dimension is a re-hashing of ideas that can be found in the summative writings of Hermann von Helmholtz. In contrast to this scientific paradigm, Stockhausen also develops a different conception of time in which the listener’s experience dispenses with precisely quantified accounts of durations and other musical elements. As though to obscure this non-scientific concept, Stockhausen calls music within this temporal context “statistical,” though its relation to any actual study of statistics is difficult to pin down. In fact, Stockhausen’s “statistical” critique of quantification strongly echoes the Bergsonian thought that lived within Stockhausen’s intellectual world, even while it was cast in the language of mathematical dimensionality.

These two traditions create a fundamental tension within Stockhausen’s approach. With his apparently scientific reliance on principles of acoustics, Stockhausen’s language would seem to be beholden to a dimensional concept of time. If this were the case, though, music would have no privileged status over any other phenomena to elucidate time’s character. Moreover, there would be no difference between different musical styles, no privilege for serialism, above any

³ Palle Yourgrau, *A World without Time: The Forgotten Legacy of Gödel and Einstein* (New York: Basic Books, 2005).

other sonic phenomena. Yet Stockhausen does not limit himself to discussing rhythm, form, or other musical elements as simply abiding within time. ‘Time’ for Stockhausen seems constantly caught up with the issue of different musical experiences, not the effort to create general scientific models of musical parameters. Furthermore, Stockhausen’s actual scientific terminology, as Backus scathingly pointed out, is somewhat loose.⁴ Just below the allegedly scientific surface, in fact, Stockhausen’s idea of “statistics” relies on a distinction between quality and quantity whose character touches on Bergson’s thought in very specific ways. Responding simultaneously to the scientific study of acoustics, but also to the particularly Bergsonian heritage of his own intellectual milieu, Stockhausen approached the question of time through Bergson-like critiques of spatialized dimensionality and quantification while attempting to remain within the mathematical-scientific paradigm he felt garnered him the most intellectual capital.

Stockhausen does not actually refer to Bergson, Helmholtz, or in fact any other source of ideas. The parallel forms of thought are striking, but the acknowledgement of influence is absent. Examining Stockhausen’s writings, it is notable that he held very specific premises about the nature of time that resonate quite strongly with Bergson. This connection is reinforced by the numerous occasions where Stockhausen would have come across prevalent Bergsonian ideas from his teachers and peers. To fully capture the extent to which Stockhausen’s language and conceptual apparatus are indebted to a Bergsonian heritage, it is necessary to rehearse the major points of reception in the thought of Theodor Adorno, Olivier Messiaen and Pierre Souvtchinsky, three characters who defined a major portion of Stockhausen’s—and many others’—intellectual horizons in the 1950s.

After establishing the themes of Bergsonian thought that Stockhausen was most likely witness to in these three figures, I will return to the composer’s conception of statistical music and articulate some basically Bergsonian ideas in the context of his compositional and aesthetic efforts. Stockhausen’s wind quintet, *Zeitmaße* (1957) helps to illustrate the implication of these ideas within a musical context. As a work that was contemporaneous with the composer’s most relevant Darmstadt lectures on time, it exemplifies the temporal ideas that grew from the

⁴ John Backus, "Die Reihe—a Scientific Evaluation," *Perspectives of New Music* (1962).

Bergsonian heritage of the European avant-garde. In particular, I will develop a ‘qualitative’ method for analyzing the rhythm, meter, and phrasing within *Zeitmaße*, which reveals a particularly coherent plan of formal contrast among a collection of passages defined by various meters and tempi. As the title indicates, then, the most salient experience of the piece’s overall form comes by way of comparing the variously consistent meters and tempi, ‘time measures,’ throughout the work. This consistency, which lives beyond exact serial procedure or quantitative comparison, provides an illustration of how Stockhausen’s ‘statistical’ music attempts to reach the ‘qualitative’ level of temporal duration. This position is admittedly obscured by Stockhausen’s approach. Yet it is precisely Stockhausen’s language of “statistics,” “acoustics,” and his broader lexicon of scientific jargon, that both directs the main thrust of these theoretical efforts and yet conceals their true line of thought. Stockhausen’s Bergsonian-style concern for an escape from quantification stands in tension with his mode of delivery. Stockhausen’s music and thought only gains its fullest meaning within the complete historical picture of his Bergsonian heritage and its perennial tension with the scientific paradigm.

The relevance for Bergson’s ideas with respect to music in the twentieth century has actually been argued from a number of perspectives.⁵ His influence on Adorno, Messiaen, Souvtchinsky, and many others has been well noted, and these three figures alone were considerably influential on the intellectual world of the mid-century avant-garde.⁶ There are also

⁵ Arnfried Edler, “Zur Beziehung Einiger Grundfragen bei Bergson zum Musikalischen Denken Nach 1900,” *Bericht über den Internationalen Musikwissenschaftlichen Kongress Berlin 1974*. (1980): 467-470; Michel Imberty and Nadia Capogreco, “Repères pour une Problématique du Temps en Music au Cours du Xxe Siècle,” (2004); Hartmut Krones, “Die Zeittheorie Von Henri Bergson Und Der Parameter Der Zeit in Der Musik Des 20. Jahrhunderts,” *Musikerziehung: Zeitschrift der Musikerzieher Österreichs* 37, no. 1 (1984); Jann Pasler, “Resituating the Spectral Revolution: French Antecedents and the Dialectic of Discontinuity and Continuity in Debussy’s *Jeux*,” *Musicae Scientiae: The Journal of the European Society for the Cognitive Sciences of Music* (2004).

⁶ Stephen Decatur Smith, “Awakening Dead Time: Adorno on Husserl, Benjamin, and the Temporality of Music,” *Contemporary Music Review* 31, no. 5-6 (2012); Smith, ““Even Money Decays”: Transience and Hope in Adorno, Benjamin, and Wozzeck,” *The Opera Quarterly* 29, no. 3-4 (2013); Max Paddison, “Adorno, Time, and Musical Time Response to Stephen Decatur Smith,” *ibid.*; Paddison, *Adorno’s Aesthetics of Music* (Cambridge University Press, 1997); Anne Boissière, “La Conception Bergsonienne du Temps dans L’esthétique Musicale d’Adorno,” *Rue Descartes* 23 (March 1999): *Actualités d’Adorno*. Pages: 85-98.. no. 23 (1999); Gareth Healey,

summative accounts of the question of time in the avant-garde that construct over-arching theories which depend on Bergsonian premises in various ways.⁷ It is difficult to accept that Stockhausen would stumble upon Bergsonian perspectives independently of the intellectual world in which he worked. This is not to say, though, that there is any sort of precise identity with some dogmatic form of Bergson's thought that remains consistent throughout its sphere of influence. The common Bergsonian ground that pitted the 'qualitative' against the 'quantitative' at a fundamental philosophical level reached Stockhausen and indeed much of the avant-garde in a number of different forms. The readings and appropriations of Bergson's ideas by Adorno, Souvtchinsky, and Messiaen all emphasize different elements and take the Bergsonian influence in different directions. Pierre Souvtchinsky's and Stravinsky's distinction between psychological and ontological time; the Frankfurt school interpretations that lie in the background to Adorno's discussion of Bergson in *Philosophy of New Music*, namely, George Lukács, Ernst Bloch, and Walter Benjamin; Messiaen's reading of Bergson through André Souris and Gisèle Brelet, all develop interesting and diverse conclusions from the same premises. The way in which these composers and intellectuals cultivated a particular horizon of discourse for Stockhausen suggests that the understanding of 'quality' and 'quantity' in their thinking on time in the 1950s and 60s owes much of its meaning to Bergson's own critique of science decades earlier.

"Messiaen: Bibliophile," in *Collected Work: Olivier Messiaen: Music, Art and Literature* (2007) 159-171.; Jean Boivin, *Le Classe de Messiaen: Historique, Reconstitution, Impact* (Montreal: University of Montreal, 1992); Olivier Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, 7 vols. (Paris: Alphonse-Leduc, 1996); Edward Campbell, *Boulez, Music and Philosophy* (New York: Cambridge University Press, 2010); Campbell, *Music after Deleuze* (Bloomsbury Publishing, 2013).

⁷ Jonathan Kramer, "New Temporalities in Music," *Critical Inquiry* 7, no. 3 (1981). Ilias Giannopoulos, *Aspects of Time in the Music of the 20th Century: On the Problem of Time and Its Theoretical Presuppositions in New Music with Special Emphasis on the Music of the Avant-Garde of the 1950s and 1960s* (Dissertation: University of Athens, 2011). Campbell, *Boulez, Music and Philosophy*; Alexander Rehding, "Towards a 'Logic of Discontinuity' in Stravinsky's Symphonies of Wind Instruments: Hasty, Kramer, and Straus Reconsidered," *Music Analysis* 17, no. 1 (1998).

Bergson

The issue of music holds an important place in Bergson's thought, which naturally attracted the attention of those sensitive to musical issues. In his early book, *Time and Free Will*, Bergson gives special attention to the musical experience to illustrate the organic unity of human perception. Bergson turns to a musical example to describe this unity. Our lived conscious state

...forms both the past and the present states into an organic whole, as happens when we recall the notes of a tune, melting, so to speak, into one another. Might it not be said that, even if these notes succeed one another, yet we perceive them in one another, and that their totality may be compared to a living being whose parts, although distinct, permeate one another just because they are so closely connected? The proof is that, if we interrupt the rhythm by dwelling longer than is right on one note of the tune, it is not its exaggerated length, as length, which will warn us of our mistake, but the qualitative change thereby caused in the whole of the musical phrase. We can thus conceive of succession without distinction, and think of it as a mutual penetration, an interconnection and organization of elements, each one of which represents the whole, and cannot be distinguished or isolated from it except by abstract thought.⁸

Along with Augustine, Hume, Husserl, and others, Bergson deploys the example of a melody to illustrate the nature of time. For Bergson, a musical melody illustrates the unified experience of duration, in which the parts cannot be abstracted out without the change in character of the whole. To move from the unity of duration to an abstract sequence of events obscures the permeability and 'mutual penetration' among the different parts, and more fundamentally separates the abstract conception of the event from experience itself. The fluidity of boundaries between different moments of a melody is erased by "abstract thought." Bergson described this concern with the immanent and complex nature of experience, wherein things, sounds, etc. do not have such precise edges, as a distinction between quantitative, spatial thought and qualitative, temporal experience. Bergson gives another sonic illustration of this state in the act of listening to the tolling of bells. In a remarkable moment in his critique of counting, Bergson argues against the idea that we first count the sequence of chimes as mathematical units.

The sounds of the bell certainly reach me one after the other; but one of two alternatives must be true. Either I retain each of these successive sensations in order to combine it with the others and form a group which reminds me of an air

⁸ Henri Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness*, trans. F.L. Pogson (New York: Dover, 2001), 100-01.

or rhythm which I know: in that case I do not *count* the sounds, I limit myself to gathering, so to speak, the qualitative impression produced by the whole series. Or else I intend explicitly to count them, and then I shall have to separate them, and this separation must take place within some homogeneous medium in which the sounds, stripped of their qualities, and in a manner emptied, leave traces of their presence which are absolutely alike.⁹

The unity of the perception of the auditory experience of the bell chimes is understood as a whole, and even the enumeration of tolling bells is secondary to the prior mode of qualitative experience of this unity. When experienced ‘qualitatively,’ the simple rhythmic repetition is unified, he says above, into the “qualitative impression produced by the whole series.” As I will show later, the extent to which Stockhausen reinforces this thesis within the treatment of complex rhythm within his music is telling.

For Bergson, the division between qualitative and quantitative conceptions of time relies on a division between pure experience and a derivative abstraction: “conscious life displays two aspects according as we perceive it directly or by refraction through space.”¹⁰ The ‘quantitative’ mode, for Bergson, is a refraction of direct perception, of language that “covers over the delicate and fugitive impressions of our individual consciousness.”¹¹ Bergson’s task in *Time and Free Will* was not merely to clarify the confusion between two different conceptions of time, but to find an approach to consciousness and to experience that does not distort true duration through the rough approximations of spatialized reality. Bergson summarizes: “In a word, pure duration might well be nothing but a succession of qualitative changes, which melt into and permeate one another...without any affiliation with number...”¹² To capture the qualitative nature of time and the temporal nature of human experience would require a method of thought that strongly distinguishes between quantitative and qualitative approaches.

As I will pursue more in the following chapter with respect to Boulez, Bergson’s distinction between pure temporal duration and abstract spatialized time, does not by itself offer

⁹ Ibid., 86-87

¹⁰ Ibid., 137

¹¹ Ibid., 132

¹² Ibid., 104

a radically new conception of time or space. It is the way that Bergson emphasized the difference in kind between qualitative and quantitative models of time, their mutual tension, and their role in constructing a proper method of thought and investigation. The historical significance of his thought was defined by its opposition to the oversimplified mathematical concept of time, as merely “the fourth dimension of space, which we call homogenous time,” Bergson explains.¹³ Because of this context, Bergson had to guard against any sense of number, counting, or abstract juxtaposition within his formulation of time. In fact, as many have pointed out, it is not actually clear that counting and juxtaposition necessarily exclude “quality,” or that the most basic psychic state is bereft of number.¹⁴ For Souvtchinsky, Adorno and Messiaen, Bergson’s thought nevertheless provided a useful point of departure for their own conception of time and the relation between time and the musical innovations they were involved with in the 1950s, not least of all Stockhausen.

Souvtchinsky

In his famous 1939 essay, “La notion du temps et la musique,” Souvtchinsky lays out a “typology” of music that distinguishes different musical styles by their relationship with two opposing forms of time.¹⁵ In Souvtchinsky’s language, this opposition stood between ‘ontological’ time and ‘psychological’ time. While the main thrust of Souvtchinsky’s philosophical work prior to this essay pursued a modernist view of history centered on a theory of the creative genius, his single essay on musical time was influential for a number of

¹³ Ibid., 109

¹⁴ As Campbell points out, philosophers after Bergson took his critique in different ways, and did not necessarily accept such a radical distinction. See Gaston Bachelard, *Dialectic of Duration*, trans. Mary McAllester Jones (Manchester: Clinamen Press, 2000); H. Tattam, *Time in the Philosophy of Gabriel Marcel* (Modern Humanities Research Association, 2013); Edward Campbell, *Music after Deleuze*; Gabriel Marcel, “Bergsonism and Music,” *Reflections on Art* (1927).

¹⁵ Pierre Souvtchinsky, “La notion du temps et la musique,” *Revue Musicale* (1939). Brooks notes Nadia Boulanger, another acquaintance of Souvtchinsky, took a great interest in Bergson. Jeanice Brooks, *The Musical Work of Nadia Boulanger: Performing Past and Future between the Wars* (Cambridge University Press, 2013), 59-63.

composers, including most notably Stravinsky and Elliott Carter.¹⁶ At least as influential as this essay, though, was Souvtchinsky's persistent promotion of new music in Paris throughout his life. Souvtchinsky was an active supporting member of the musical avant-garde in Paris in the 1950s in his role with the *Domaine Musicale* concerts, a periodic concert series which was the venue for many notable premiers. It is difficult to assess whether this role included any sort of philosophical guidance with respect to something so specific as time.¹⁷ His 1939 essay could well have been quite dated by the mid-1950s, but it is also possible that his presence reinforced the proximity that many composers felt between their musical efforts and the basic philosophical problem of time.

As Katerina Levindau and Jeanice Brooks mention, Souvtchinsky's cultural climate in Russia before his emigration, and the Parisian intellectual world he joined in 1925, were both deeply engaged with Bergson.¹⁸ Few thinkers, however, accepted Bergson's thought without considerable critical engagement. With Souvtchinsky, the temporal distinction effectively switches the polarity of Bergson's thesis: Souvtchinsky defines 'real' or 'ontological' time by the stability of chronometric units, whereas 'psychological' time deviates from that foundation by disruptive instability. In his famous Harvard lectures, Stravinsky summarized the concept of

¹⁶ See Pierre Souvtchinsky, *Un siècle de musique russe: 1830-1930: Glinka, Moussorgsky, Tchaïkowsky, Strawinsky, et autres écrits: Strawinsky, Berg, Messiaen et Boulez* (Arles: Actes Sud, 2004); Souvtchinsky, "A propos d'un retard," *Cahier Renauld Barrault*, 1954. Elliot Carter, "The Time Dimension in Music," *Music Journal*, 1965.

¹⁷ In his article from a 1953 collection of essays from figures in this Parisian circle, *La musique et ses problèmes contemporains*, Souvtchinsky does not return to the problem of time within music, but does deploy a familiar contrast between a historical perspective based on the view of dynamic processes and one based on statically regarded distinct facts. See Souvtchinsky, "A propos d'un retard."

¹⁸ Katerina Levidou, "The Artist-Genius in Petr Suvchinskii's Eurasianist Philosophy of History: The Case of Igor' Stravinskii" *The Slavonic and East European Review* Vol. 89, No. 4 (October 2011): 601-629; Brooks, *The Musical Work of Nadia Boulanger*. See also Hilary Fink, *Bergson and Russian Modernism, 1900-1930* (Northwestern University Press, 1999).

musical time of Souvtchinsky—who, as it turned out, was a main authorial voice in these lectures in any case.¹⁹

Mr. Souvtchinsky thus presents us with two kinds of music: one which evolves parallel to the process of ontological time, embracing and penetrating it, inducing in the mind of the listener a feeling of euphoria and, so to speak, of ‘dynamic calm.’ The other kind runs ahead of, or counter to, this process. It is not self-contained in each momentary tonal unit. It dislocates the centers of attraction and gravity and sets itself up in the unstable; and this fact makes it particularly adaptable to the translation of the composer’s emotive impulses. All music in which the will to expression is dominant belongs to the second type.²⁰

‘Ontological’ time is Stravinsky’s ideal, realized by his attention to rhythm, especially in the clarity of his neo-classical works. The derivative, ‘psychological’ time is exemplified for Souvtchinsky by the music of Wagner. Souvtchinsky’s version of ‘psychological’ time is not that of a rigorous scientific account of time perception, but a loosely ‘clinical’ one, so to speak. ‘Psychological’ time distorts the more fundamental ‘ontological’ time through emotions and alterations of the basic psychic state. Souvtchinsky notes the different ways that the flow of time is shifted away from ontological time by such states of mind. Waiting, anxiety, suffering, fear, alarm, but also contemplation and sensuality all produce characteristically different modes of temporal experience. These mental states are examples of the way that the human experience of time is altered by the contents of experience. In Souvtchinsky’s description, psychological states displace time, anticipating or remembering, but not abiding in the present. While accepting that music may obtain a balance in which these modifications can be grounded onto real, ontological time, what proceeds from this contrast is Souvtchinsky’s efforts at creating a typology of music that exemplifies, or manifests—the precise relation is not clear—two layers of time.

Souvtchinsky’s version of time performs a reversal of Bergson: the clarity of ontological time, free from subjective bias, can be captured in music with rhythmic and metric clarity. Souvtchinsky goes so far as to say that ontological, ‘real’ time is “chronometric,” while

¹⁹ Valérie Dufour. “La Poétique musicale de Stravinsky: Un manuscrit inédit de Souvtchinsky.” *Revue De Musicologie* 89, no. 2: 373-392. 2003. Dufour, “Stravinsky vers Souvtchinsky: Thème et variations sur la Poétique musicale.” *Mitteilungen Der Paul Sacher Stiftung* no. 17 (2004): 17-23.

²⁰ Igor Stravinsky, *Poetics of Music*, trans. Arthur Knodel and Ingolf Dahl (Cambridge, MA: Harvard University Press, 1942), 31.

psychological time is “chrono-ametric.”²¹ The distinction rests on the difference in the way in which the present musical moment is experienced: a uniform satisfaction of temporal equilibrium of the chronometric musical now, or alternately with the “displaced centers of attraction” where the “sonorous instant is always placed before or after” the appropriate moment.²² ‘Real’ time for Souvtchinsky was homogenous, and was not populated by the biases of subjectivity. Although a more refined version of Souvtchinsky’s argument might be defended, it seems as though the question of time in this context reduces down to the treatment of rhythm and meter. This reduction has two results: it brings ‘time’ into issues of meter, and it emphasizes meter and rhythm as the foremost site of temporal determination.

Whatever the intrinsic value of Souvtchinsky’s philosophy of musical time, his language provided an early reinforcement for a major element of twentieth century theory: the idea of ‘musical time itself’—that time as a metaphysical question relates to music. That there is even the possibility of a proliferation of different ‘times’ according to the character of the music is both ubiquitous in and unique to the twentieth century. The binary between two forms of time, whatever their preferred valence, becomes sedimented into the language of the European composers who were influenced by Souvtchinsky’s thought.

Adorno and the Frankfurt School

Another philosophical figure who spent considerable time engaging with the European avant-garde was Theodor Adorno. Adorno brought a massive set of intellectual influences to his approach to his contemporary music, but his multi-faceted philosophy of time relied on Bergson’s thought for certain important premises.²³ Historically, Marxism is generally understood to have rejected the ‘irrationalist vitalism’ of Bergson, but Bergson’s critique of the dimensional form of time reinforced the Frankfurt school’s interpretation of Marx in a useful way. Particular elements of Bergsonian thought come to the surface in numerous places, and paved the way for Adorno’s critique of new music in the 1950s. In his *Philosophy of New Music*,

²¹ Souvtchinsky, “La notion du temps et la musique,” 313.

²² Ibid.

²³ I will pursue other central concepts of time within Adorno’s thought in a later chapter.

Adorno presented a Marxist-infused appropriation of Bergson different than the strictly French tradition of Bergson reception. Not only was the dimensionality of time dominated by space and number, it also described the increasingly rationalized organization of life in the nineteenth and twentieth centuries. This perspective provided part of the temporal aspect to Adorno's critique of capitalist culture. The alienation between subject and object, as they become rationalized within the 'reification' of both labor and commodity was framed in part as a question of time. For Adorno, as well as for Bloch, Lukács, and Benjamin, Bergson's thought added a useful angle to this critique. Although it is not necessary to lay out the full reception history of Bergson among these figures, it is helpful to point out the way in which their response to Bergson's concept of time directed Adorno's assessment of the musical developments up to through the 1960s, not least of all Adorno's response to Stockhausen's lectures at Darmstadt.²⁴

One of the most influential figures for contextualizing Adorno's perspective in the 1940s was Walter Benjamin. Referenced a number of times in *Philosophy of New Music*, Benjamin's approach exemplifies the manner in which Bergson was easily appropriated by a materialist critique of capitalist culture, emphasizing the historical condition of late nineteenth century industrialism to which he saw Bergson respond in an ahistorical way.

[Bergson] manages above all to stay clear of that experience from which his own philosophy evolved or, rather, in reaction to which it arose. It was the inhospitable, blinding age of big-scale industrialism. In shutting out this experience the eye perceives an experience of a complementary nature in the form of its spontaneous afterimage, as it were. Bergson's philosophy represents an attempt to give the details of this afterimage and to fix it as a permanent record.²⁵

By placing Bergson onto a historically grounded, 'material' motivation, Benjamin sought to give more specific shape and texture to the 'afterimage' of Bergson's critique. Rather than reject it outright, Benjamin contextualizes Bergson within a view of the historical context. As Stephen Smith explains with respect to Benjamin and Adorno's critique of the phenomenology of music, Benjamin holds that, beyond the traditional Marxist critique of ideology, even perception itself

²⁴ See Martin Jay, *The Dialectical Imagination: A History of the Frankfurt School and the Institute of Social Research, 1923-1950* (University of California Press, 1996).

²⁵ Walter Benjamin, "On Some Motifs in Baudelaire," *Illuminations*, 157

was shaped by the historical moment of 19th century capitalism.²⁶ Reframing Bergson's critique of rationalized time into its historical significance also comes to play an important role for Adorno, offering a way out of some essentialist characteristic of consciousness and into a historically determined consciousness whose alterations faced new, much more radical musical and social challenges in the 1940s and 1950s.

Rather than merely reject Bergson's philosophy, then, it was easy enough to appropriate his observations for the Marxist critique of the capitalist version of time, where time is, as Marx summarized, "the measure of labor."²⁷ In *das Kapital*, Marx discusses time with respect to calculating the economic value of labor: in order for labor to be calculated exactly, it must be considered homogeneously so that one hour of labor can represent a comparable unit. Marx illustrates the working day in *das Kapital* via a series of simple geometrical problems using line segments to compare different possible work days.²⁸ In this context, the quality of work must be calculated in a different realm than the quantity of work. Lukács commentary on this element of Marx sounds explicitly Bergsonian: "Thus time sheds its qualitative, variable, flowing nature; it freezes into an exactly delimited, quantifiable continuum filled with quantifiable 'things' (the reified, mechanically objectified 'performance' of the worker, wholly separated from his total personality): in short, it becomes space."²⁹ Marx's rationalized time of capitalism shaped time into a dimension precisely in the manner that Bergson was critical of, and Lukács's position belies a more explicit reliance on a qualitative versus quantitative distinction. For Lukács, the issue is not merely the 'quality' of the work done. Time itself has a qualitative, flowing nature. Hence, while Marxism rejected many of Bergson's general philosophical conclusions, their critical approach to the rationalization of time as a mode of industrial era capitalism benefited from the Bergsonian perspective.

²⁶ Stephen Decatur Smith, "Awakening Dead Time: Adorno on Husserl, Benjamin, and the Temporality of Music," *Contemporary Music Review* 31, no. 5-6 (2012): 396.

²⁷ Marx, *Capital*, 45-46. In this context, time is defined explicitly as the measure of labor.

²⁸ *Capital*, 255-259.

²⁹ Lukács, *History and Class Consciousness*, 90.

Ernst Bloch, one compatriot Adorno does explicitly reference in *Philosophy of New Music*, grappled with Bergson at various points.³⁰ Like many philosophers, Bloch's thought absorbed a massive collection of influences and interlocutors, and so it is not guaranteed that Bergson would necessarily hold a privileged place in Bloch's philosophy. In the particular case of music, however, there is a markedly Bergsonian dimension to Bloch's line of thought. Bloch presents a musical contrast with a resonantly Bergsonian bias in his 1925 essay "On the mathematical and dialectical character in music."³¹ Here Bloch creates a much older sounding contrast—a mythically old contrast, in fact: on one hand, the music of the spheres, the logic of Nature, the mathematical character of counterpoint, Bach's fugues; and on the other hand the dialectical, human-centered, expressive music of the Romantics. Bloch in effect performs the Bergsonian distinction between qualitative and quantitative through a sort of Hegelian mythology about the difference between mathematical, logical structures and human, dynamic processes. His valorization of the nineteenth century sonata form as a "pure art of time" presages Adorno's hallmark Beethovenian orientation: "...mathematics has ... no relation to the sonata, that impulsive, dramatic, discontinuous excess of tension, that pure art of time and direction with its productive leaps in the development..."³² Via a different route, Bloch reinforces the critique of rationalized, numbered time and translates it directly into an evaluative tool for the history of music. More than any specific interpretation, it was Bloch's general attention to music history as a change in perspective on music's relationship to time that Adorno sharpened into his major thesis. Bloch did not participate in the Darmstadt courses like Adorno, but he remained a significant element of the horizon at Darmstadt. Dieter Schnebel, who also meditated on the nature of musical time, studied theology and philosophy with Bloch during the 1950s at

³⁰ Bloch, *The Principle of Hope*, (Boston: MIT Press, 1986); Bloch, "Entwurf der Naturphilosophie" *Bloch Almanac* (1912).

³¹ Ernst Bloch, "Über Das Mathematische Und Dialektische Wesen in Der Musik (Ein Versuch, 1925)," in *Zur Philosophie Der Musik* (Frankfurt am Main: Suhrkamp Verlag, 1974). See *Essays on the Philosophy of Music*, trans. Peter Palmer (Cambridge: Cambridge University Press, 1985).

³² *Ibid.*, 186

Tübingen University and Henri Pousseur also credits Bloch as an important inspiration.³³ Even while Bloch's critiques of Bergson constitute a very small part of his overall philosophical system, the French philosopher's basic themes do seem to emerge with respect to Bloch's interpretation of nineteenth century music.

Bergson, Bloch, Lukács and Benjamin supply part of the backdrop of Adorno's treatment of time in *Philosophy of New Music*, which was more directly influential on Stockhausen. Adorno offers a subtle critique of Bergson, however, in which neither polarity of time comes out as a more primordial version of temporality. In fact, Adorno finds that both moments of the time-binary come under full rationalization of modernity. The manifestation of this negative confluence occurs in Stravinsky's music. In perhaps direct contradiction to Souvtchinsky, Adorno asserts that Stravinsky "could be called, with some exaggeration, a Wagner who has come fully into his own, who has surrendered to ... the vacuity of the musical progression of the 'music drama' without using the bourgeois ideals of subjectivity and development to mask the regressive impulse."³⁴ This path from Wagner to Stravinsky passes through Debussy, whose music for Adorno represents a highly stylized development of stasis. It is notable that Debussy's music becomes, for Darmstadt composers like Stockhausen, the direct inspiration for 'statistical' conception of musical form.³⁵ As with Adorno's general critique of serialism, his perspective on Debussy is equally a source of influence as it is a point of contention.

Rather than the beginning of a new temporal paradigm, Adorno observes in Debussy the collapse of duration into spatialized time: pure duration becomes pure immanence, but an immanence of a present with no past or future, no expansion of time in which a work's development might meaningfully unfold, a renouncing of time. Adorno then expands his critique to Impressionism in general. "...French music, which renounced all metaphysics, even its pessimistic forms, objectively articulates this renunciation all the more strongly the more it

³³ Constantin Gröhn, *Dieter Schnebel Und Arvo Pärt: Komponisten Als "Theologen"*. (Verlag Münster, 2006). Henri Pousseur, "E. Bloch, La Musique Et La Pédagogie Musicale," *Marsyas: Revue de pédagogie musicale et chorégraphique* 1 (1987): 63-64.

³⁴ Theodor Adorno, *Philosophy of New Music*, trans. Robert Hullot-Kentor (Minneapolis: University of Minnesota Press, 2006), 140

³⁵ Grant, *Serial Music, Serial Aesthetics*.

contents itself with a happiness that—as a simple being here, as absolute momentariness—is no longer any happiness at all.³⁶ Adorno’s persistent critique of ‘living in the moment,’ the delusion of immanence, mere subjectivity alienating itself from its historical reality, does not find fault with one or the other concept of time, but shows how both collapse into each other.³⁷ And so, “Stravinsky and his school prepare the end of Bergsonianism in music. They play *temps espace* against *temps durée*. Their procedure, which was originally inspired by irrationalist philosophy, made itself the advocate of rationalization in the sense of an amnesic mensurableness and denumerableness.”³⁸ Neither spatial time nor pure duration offer any sufficient way out of the problem of musical time for Adorno. Adorno added a telling footnote to the above statement. The footnote is not to Bergson, but to a tangential analysis of the thematic content of Stravinsky’s *L’Histoire du Soldat*. In *L’Histoire du Soldat*, the bumbling soldier escapes the powers of the devil with some extreme luck in cards. Not to be completely beaten, the devil accepts his loss on the condition that the soldier does not return to the land of his youth. When the princess convinces him to attempt a homecoming anyway, the devil captures him once he crosses the border to his homeland: the impossibility of a return to the past or the redemption of memory is in tension with the very structure of the piece. Adorno’s hears *L’Histoire du Soldat* as an exemplary statement of the historical moment, a piece that “leads to the very threshold of consciousness of this situation” (that is, of the end of Bergsonianism in music): “That the soldier remains spellbound in the sphere of the merely present explains the taboo under which the whole of Stravinsky’s music stands. The spasmodic, piercingly present repetitions are to be interpreted as a means for extirpating memory—the safeguarded past—from the suspension of duration.”³⁹

The disjunctive narrative of *L’Histoire du Soldat*, its extreme repetitiveness both in form and motivic material, and the strong rhythmic character of much of the music articulate the contradictions of the historical moment, from which nothing escapes unscathed. Adorno ties this

³⁶ Adorno, *Philosophy of New Music*, 140.

³⁷ See Smith’s analysis of Adorno’s critique of phenomenology. Smith, “Awakening Dead Time: Adorno on Husserl, Benjamin, and the Temporality of Music.”

³⁸ Adorno, *Philosophy of New Music*, 142

³⁹ *Ibid.*, 192

state of affairs into the basic Marxian critique of alienation. “The passing away of subjective time in music appears so inescapable in the midst of a humanity that makes itself into a thing, into an object of its own organization, that at the extreme poles of composition something similar can be observed.”⁴⁰ It is in this context that Stravinsky’s formal principle (according to Adorno) can be simply that: “Time is suspended, as if in a circus scene, and complexes of time are presented as if they were spatial.”⁴¹

Adorno does not merely accept that both poles of composition (Schoenberg and Stravinsky) play the same role in a single rationalization of subjective time. Their differing technical accomplishments align with a parallel alienation of time in how audiences now judge new music. Adorno departs from the original Bergsonian emphasis on pure duration over spatialized time: both negate what Adorno called subjective time. Adorno’s distinction between pure duration and spatialized time articulates a social alienation between modes of listening, neither of which makes a stronger claim to nature. Adorno sees this contrast manifest itself as a historical reality, embedded in modes of listening, with the subjective and objective perspectives of time alienated from one another.

two types [of listening] can be discerned, not as given by nature but rather as historical constitutions with which prevailing character syndromes can respectively be associated. They are the expressive-dynamic and the rhythmic-spatial listening types. The former has its source in singing; it aims at surmounting time through its fulfillment and, in its supreme manifestations, inverts the heterogeneous movement of time as a force of the musical process. The other type obeys the beat of the drum, intent on the articulation of time through its division into equal quantities that virtually abrogate and spatialize time. The two types of listening diverge by virtue of social alienation, which tears apart subject and object.⁴²

The contrast between these two types of listening pivots on the distinction between the experience of flowing and pulsed time. Avoiding a typology of different musical times, or even of compositional structure, Adorno reaffirms the contrast between two temporal modes in terms of the Marxist subject-object alienation. Yet the Bergsonian theme is clear.

⁴⁰Ibid., 142

⁴¹ Ibid., 142-143

⁴²Ibid., 144

Over the course of the 1950s and 1960s, it seems that Adorno's Bergsonianism informs more general distinctions: between aesthetic or musical time, on one hand, and objective, empirical time on the other.⁴³ Yet in his famous lecture *Vers une musique informelle*, Adorno explicitly approaches Stockhausen's thesis about the unity of musical time from a Bergsonian perspective. Stockhausen seemed to be rationalizing both senses of time into a single dimension of frequency. Working from the acoustical principle that a single frequency spectrum can describe both the realm of meter and rhythm and that of pitch and timbre, Stockhausen seems to be passing over the fact that the heard experience of musical parameters of very high and low frequencies are quite different. Adorno reminds his Darmstadt audience that certain theses of Bergson are inescapable:

The objective time-factor in all parameters and the living experiential time of the phenomena are by no means identical. Duration and pitch belong to different musical realms, even if in acoustics they come under the same heading. In the controversy on this point the concept of time is used equivocally. It covers both *temps espace* and *temps durée*, physically measurable, quasi-spatial time and experiential time. Bergson's insight into their incompatibility cannot be erased.⁴⁴

Responding in part to Stockhausen's lecture that would be published as "...how time passes..." Adorno critiques Stockhausen's premise that the scientific concept of time used in acoustics can unify musical elements that find their meaning in the experience of music. Stockhausen's interest in the fact that periodic frequency over time could just as equally describe meter or rhythm as pitch or timbre is, for Adorno, an equivocation about the nature of time. Adorno reapplies Bergson's position: still at work is the difference in kind between the quantitative time of acoustics and the qualitative time of experience. From the quantitative perspective, pitch and rhythm both live on the same continuity of frequency; but understood as sorts of quality, they are experienced differently. Moreover, Adorno's point also reinforces Bergson's view that the spatialized concept of time is abstract and conceptual and thus not a question of musical

⁴³ Max Paddison, *Adorno's Aesthetics of Music*. Theodor Adorno, *Aesthetic Theory*. Translated by Robert Hullot-Kentor. Minneapolis: University of Minnesota Press, 1997. *Negative Dialectics*. Bloomsbury Academic, 1973. Max Paddison. "Adorno, Time, and Musical Time"; Stephen Smith, "Awakening Dead Time."

⁴⁴ Adorno, "vers une informelle" *Quasi una fantasia*, 312.

experience at all, while the pure level of duration is defined by its formation of concrete, immediate experience.

As I discuss below, it is not actually clear that Stockhausen is neglecting this Bergsonian premise. It is true that Stockhausen begins by seeking a perspective on musical elements that can be approached from a single dimension of time. The unity of tempo, meter, rhythm, pitch, and timbre under a more general concept of frequency provided what Stockhausen perceived to be an especially organic procedure of serializing rhythm in accordance to its relationship to pitch. However, there is another significant element of Bergson's thought that must be applied here. Even for an apparently quantitative context—like that of a bell tolling, to use Bergson's example—a rigorous account of time itself must find the qualitative character of that experience. What Adorno calls “objective, quasi-spatial time” is simply not truly time for a Bergsonian. To inquire into the truly time-like character of pitch and timbre is to study its qualitative character; but just as significantly, to inquire into the time-like character of rhythm must also articulate what it would mean to characterize the quality of a rhythmic pattern. This method, what I call below a ‘qualitative’ analytical perspective, takes Stockhausen's study of acoustics as an especially useful starting point, but not by any means a conclusion. If the study of acoustics identifies the nature of pitch and timbre with a quantitative description of frequency, then reciprocally, a qualitative methodology can equally take pitch and timbre as a means of dealing with a qualitative description of low level frequency, i.e. rhythm, where that frequency is most familiarly counted.

From Stockhausen's actual language and style of presentation, the idea that he is actually dispensing with a quantitatively scientific approach is not at all apparent. For many of Stockhausen's points, Adorno's critique is valid: the treatment of pitch and timbre from an abstract dimensionality of frequency obscures the fact that there is no access to these details within listening. Even a demonstration of the existence of upper partials and harmonic relations are, even more obviously than a series of tolling bells, primarily qualitative. My argument, though, maintains that Adorno does not consider the possibility that all musical duration—whether pitch or rhythm—could be considered qualitatively in a way appropriate to the music under question. Even if the nature of the qualitative experiences of a tone and a rhythmic passage differs from one another, they yet may be approached as occupying the same kind of time. Part

of the reason that Stockhausen did not detach his method from a quantitative perspective was that, as Bergson himself recognized, the immanence of qualitative temporal flow is most easily, and perhaps necessarily, mediated through abstract, linguistic and scientific forms. The challenge is thus to begin with the quantitative but point towards or move into the qualitative. A ‘qualitative’ analytical model that Stockhausen suggests very well could begin with a quantitative description.

Ultimately, however, the Bergsonian premise behind my reading of Stockhausen does not stem from Adorno’s perspective. Adorno, following his Marxist tradition, does not accept that there is any priority for the qualitative as a more accurate description of human perception. The trajectory of twentieth century music (and, along parallel paths, phenomenology) demonstrated for him that the fetishization of subjective experiential time, the “merely present” as he said, was just as destructive as the extreme rationalization of objective scientific time. My re-reading of Stockhausen’s method prioritizes the qualitative as a revival of Bergson’s own temporal priority. It is through this expansive application of the concept of quality that Stockhausen can then approach the problem of musical experience outside the question of what compositional patterns have been placed within the music.

Messiaen

Whether or not there is a direct line of influence, this aspect of Stockhausen’s thought resonates quite strongly with Messiaen, who was another influential figure to have absorbed Bergson’s philosophy. In the first chapter of the first volume of Messiaen’s *Traité de rythme, de couleur, et d’ornithologie*, the composer gives credit to Bergson as an important influence on his ideas on time.⁴⁵ As I discussed in my introduction, the particular character of Messiaen’s influence on this point is difficult to pin down. For the composers who attended Messiaen’s class after 1954, the year when his course officially became one on the philosophy of music, Bergson

⁴⁵ Andrew Shenton, "Observations on Time in Messiaen's *Traité* " in *Oliver Messiaen: Music, Art, and Literature*, ed. Christopher Dingle and Nigele Simeone (Burlington, VT: Ashgate, 2007); Christopher Dingle, review of *Traité de rythme, de couleur, et d’ornithologie*, vol. 1, *Music and Color – Conversations with Calude Samuel*, Messiaen: Apparition de l’Église éternelle; Messiaen: Complete Organ Works, *Tempo* 192 (1995).

would have certainly been a topic of study.⁴⁶ Prior to this year, Messiaen's class was neither a composition class nor a philosophy class, but a class on musical aesthetics, and prior to that, simply a class on harmony. Stockhausen did not even attend the full three year cycle on analysis, but only audited the course for a short period, so the specificity of influence is difficult to pin down. His reputation as a teacher, however, suggests that Messiaen's concept of 'analysis' was quite broad and could very well include discussion of the philosophy of time. Circumstantial evidence would suggest that the ideas present in the first volume of the *Traité* were part of Messiaen's earliest teaching, including the classes Stockhausen attended. Messiaen's earliest references to the project of compiling a collection of his teachings of any sort were only to a treatise on rhythm, which is the topic of the first two volumes of the *Traité*. This chronology suggests that these teachings were roughly the earliest to be articulated. Also, the writing of the *Traité* occurred, according to Loriod, between 1948 and Messiaen's death, which means the beginning of the project coincided with his teaching from the late 1940s onward. The content of the chapter does not conflict with this possibility: all of the literary and philosophical references in the section on time are before 1950, and most of them come from the 1930s and prior.⁴⁷ Whether or not the *Traité* is a direct reflection on the intellectual background of Messiaen's class in the late 1940s and early 1950s, it is likely that Messiaen's general spirit of eclecticism encouraged the approaches and discussion of "time" itself in the 1950s via a compositional and pedagogical aesthetics reliant on Bergsonian philosophy.

Whether it was an explicit topic of his instruction or an implicit background influence, the weight of Messiaen's critical Bergsonism has been missed by Messiaen scholarship, which has failed to fully recognize the specific route of reception that Messiaen takes and his reconstructive deployment of Bergson's ideas for his own efforts. Campbell, for example, reiterates Shenton's and Dingle's general conclusions that Messiaen was naively rehearsing secondary literature in the first chapter of the *Traité* and did not expand on them or give any

⁴⁶ Campbell discusses Messiaen's treatment of Bergson. Campbell, *Boulez, Music and Philosophy*, 230-31.

⁴⁷ Yves Balmer, "Religious Literature in Messiaen's Personal Library," in *Messiaen the Theologian*, ed. Andrew Shenton (Burlington, VT: Ashgate, 2010); Messiaen, *Traité de rythme, de couleur, et d'ornithologie*; Shenton, "Observations on Time in Messiaen's *Traité*."

personal interpretation.⁴⁸ While that may be true for some elements of Messiaen's discussion, Bergson takes a more privileged place. Among the twenty five authors cited in the first thirty pages of Messiaen's *Traité*, Bergson's philosophy is read the closest, and Messiaen makes some effort to reconcile Bergson's emphasis on pure duration with the composer's own appreciation for musical number. Messiaen accepts Bergson's contrast between qualitative duration and quantitative abstraction, but places it within a larger context in which a wide range of time-frames are synthesized—not juxtaposed or simply enumerated—as equally significant perspectives on time. This synthesis is driven, I argue, by a systematic eclecticism that does not simply list sources of ideas, but seeks a point of view that can accommodate the variety of perspectives. Messiaen's eclecticism is a methodology by which he retains Bergson's ideas for himself and rescues the necessarily numerical and quantitative foundations of his interest in rhythm from its pejorative rationalization of its earlier twentieth century reception.

Messiaen's eclectic reading of Bergson was greatly shaped by the perspective of André Souris, who in turn had absorbed Gaston Bachelard's critique of Bergson for his study of rhythm. Like Souvtchinsky, Souris was an active member in the European musical world who the avant-garde composers would have known.⁴⁹ Messiaen spends time summarizing Souris concept of rhythm within the first chapter of his *Traité*. Souris's short 1948 essay, reflecting both Bachelard and Bergson, puts into question the strategy of deploying a simple temporal binary within music. In this essay, Souris supplied an important concept to Messiaen, that of temporal superimposition. Souris developed this concept within a musical context, but Messiaen expands its scope to include a wide range of time-concepts that he felt were important to his music, even if the sources of his ideas were famously idiosyncratic. Just as Bachelard shows it is misleading

⁴⁸ Edward Campbell, *Boulez, Music and Philosophy*; Campbell, *Music after Deleuze*; Andrew Shenton, "Observations on Time in Messiaen's *Traité*"; Christopher Dingle, review of *Traité de rythme*.

⁴⁹ André Souris, "Notes Sur Le Rythme Concret," *Polyphonie* 2(1948): 4-11. Reprinted as "Notes Sur La Rythme Concret," in *Conditions De La Musique Et Autres Écrits* (Brussels: Editions de l'Université, 1976). Jan Christiaens, "Sounding Silence, Moving Stillness: Olivier Messiaen's Le Banquet Céleste," in *Collected Work: Silence, Music, Silent Music*. (2007). Campbell discusses Boulez's aversion to Souris's enthusiasm for Surrealism, but this issue is not directly influenced by topics of time. Campbell, *Boulez, Music and Philosophy*.

to posit a strict binary between pure qualitative duration and quantitative thought, Souris points out it is misleading to work within a binary between ‘rhythmic’ music and ‘non-rhythmic’ music. All musical elements are temporal and hence rhythm has no priority with respect to time. Within this critique, Souris makes a claim that is central to Messiaen’s understanding of Bergson: “Each factor in a musical language engenders a particular time, as well as a polyphony of them all in a temporal multiplicity, in which each affects the others. This results in the changes, absorptions, or superimpositions of [these] independent times.”⁵⁰ For Souris, the analytical abstractions of ‘rhythm’ or ‘pitch’ or ‘timbre’ are inaccurate compared with the more complex interplay of musical elements that occurs in actual music. Even if independent musical parameters can be thought abstractly, they are not so easily disentangled from one another in real music. At the same time, Souris’s Bachelardian premises reject that each musical element collapses into an undifferentiated immanence. Souris turns to examples of polyrhythmic realization of metric and melodic relations in Beethoven, or the ways in which instrumental timbre clarifies texture in Webern. In these examples of complex interplay between different musical elements, Souris employs Bachelard’s concept of dialectics to describe the complex synthesis that functions within music, one which does not necessarily collapse into undifferentiated unity (though this is a possibility), but upholds the ‘polyphonic,’ potentially ‘superimposed’ collection of different times.

Souris’s idea of superimposition provides the tool for contextualizing Messiaen’s eclectic approach to different concepts of time outside of music. A ‘polyphony of times’ is an apt image of Messiaen’s attempt to collect as many perspectives as he could for the opening chapter of his *Traité*. Unlike many of the other figures, who framed the problem by echoing the Bergsonian polarity between two versions of time, Messiaen sets Bergson and indeed all of his intellectual inspirations in an eclectic, or more accurately syncretic, superimposition, what could be seen as a ‘time-nesting’: beginning with eternity, and including biblical versions of time, the Aevum of angels, the time of galaxies and stars, mountains, touching on Einstein’s relativity and space-

⁵⁰ Souris, "Notes Sur Le Rythme Concret.", 245-246 “Chacun des facteurs du langage musical engendre un temps particulier et tout polyphonie une multiplicité temporelle, au sein de laquelle chaque temps agit sur les autres. Il en résulte des échanges, des absorptions ou des superpositions de temps indépendants.”

time, time of economic systems, psychological and physiological theories of time, human temporality, time of birds, and down even to the atomic and subatomic timeframes.⁵¹ The effort of gathering this diverse set of ideas together into a useful perspective was itself a statement about the relationship between different time scales.⁵² Whether or not Messiaen truly reflects Bachelard's understanding of dialectics in this syncretism is unclear, but the composer deploys a similar dialectic to preserve the numerical proportionality of rhythm while accepting the Bergsonian account of duration. Perhaps more than any philosophical system, it was Messiaen's personal theology and music's role in the spiritual that led him to find a point of view that could accommodate the flow of duration, the abstraction of number, the time of nature, and eternity itself.

It is thus misleading to see in Messiaen the simple binary between static and dynamic that Campbell for example connects to him and to other composers.⁵³ It is precisely his eclecticism that opens up a place for other composers to investigate "time" without the philosophical need to uphold a single 'true' time and a secondary 'derivative.' Instead, Bergson's contrast between qualitative and quantitative versions of time is included in Messiaen's time-nesting or superimposition, alongside his other temporal concerns: the issue of eternity, which I will take up later, the temporality of birdsong and nature, and Messiaen's other well-known sources of inspiration. This intellectual eclecticism is not merely a quaint gesture of being well-read, nor is it some undigested list of influences. His sources of ideas are placed within a syncretic superimposition of the concepts of time. This method allows Messiaen to move beyond Bergson while maintaining the value of the philosopher's ideas with respect to the relationship between music and time. With this tool, Messiaen was then prepared to enter back into the diversity of temporal factors within music—Souris's polyphony—in a way that did not over-emphasize a melodic or rhythmic sense of time, but accepted a plurality of different 'times' each based on significant musical details.

⁵¹ Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, vol. 1

⁵² It may be debatable as to whether each of Messiaen's perspectives on time could engage equally productively with music, but it is notable the extent to which the composer does attempt to in his work.

⁵³ Campbell, *Music after Deleuze*.

The reason that Messiaen could not completely accept Bergson's position was that it denied the priority of number and relative quantity of durations, which was essential for Messiaen's approach to rhythm. For Bergson, lived duration was primary and spatialized time was derivative, a mere abstraction. But rhythm and many musical elements are, for Messiaen, immanently numerical. Commentators have failed to note that here Messiaen breaks from his otherwise open acceptance of all sorts of versions of time. With Bergson, Messiaen makes an effort to reconcile the tension between the immanence of temporal flow and number, rather than just summarize the philosopher's ideas.

Bergson maintains that duration is one "immediate given of conscience": it is the title of his first book. In actuality, duration is present for us with the fluctuation of tempo, changes of speed: [our appreciation of] the experience of life, of heterogeneous durations, depends essentially on the number of exterior and interior events which fill each of us, in the present and in the past. In opposition to lived duration, one sets up abstract or structural time.⁵⁴

This statement is simultaneously a gloss of Bergson and a critique. Without denying the opposition between lived duration and abstract, 'structural' time, Messiaen notes a numerical character of temporal heterogeneity, the numbering of both internal and external events that fill duration. The composer's language suggests that there is a plurality of 'durations.' Still, Messiaen's reading of Bergson reinforces the quantitative-qualitative contrast as one between immediacy and mediation. Messiaen's solution to this tension is to add the two levels of Bergson's distinction into his method of superimposition: if pure immediate duration lacks number in the absolute present, the retention or memory of the immediate past productively contributes the quantitative element of comparison. Messiaen offers an alternative view of the relation between the two layers: "in the appreciation of musical time, recollection and attention play an important role, ensuring that memory and intuition are equal to and perhaps more important than the immediate, direct hearing."⁵⁵ The sides of the binary have been upset: the mediations of recollection, attention, memory and intuition do not stand against immediate,

⁵⁴ Messiaen, *Traité de rythme, de couleur, et d'ornithologie* vol. 1, 9. My translation.

⁵⁵ *Ibid.*, 24.

direct hearing.⁵⁶ The two readings of time are translated into complementary time frames whose additive significance will also, at some level, communicate with the diversity of other times: that of birds, for example, or even perhaps the eternity of divine life.

Messiaen's perspective on Bergson rescues the philosopher's relevance from a problematic interpretation that can be taken from Souvtchinsky—that flowing, rubato, or expressive music, is somehow 'qualitative' and repetitive, accented, and neatly metric music is more 'quantitative.'⁵⁷ As Souris argued, this is simply false: even expressive melodic lines have rhythm and duration. Musical as well as non-musical processes enter into a complex relationship within the music, but this relationship does not necessarily establish a single context of time as prior. Likewise, it is important to note that Bergson's thesis that there are two modes of time, one immanent and another abstract, does not describe two different, contrasting types of experiences, in the way music might contrast between pulsed and flowing. As a philosophical account of time perception as such, Bergson's distinction does not account for different musical emphasis on rhythm, but accounts for all perception. Messiaen quotes a large passage from Souris's essay about the "illusion" (implicitly Souvtchinskian) that there is a philosophical contrast between highly rhythmic, instrumental music and sustained, melodic music.⁵⁸ "One common opinion on rhythm accords value to a preponderance of percussion instruments and, in general, all music that is dry and abrupt, as opposed to sustained, allegedly more "melodic" music. This illusion is doubly instructive. First, it allows us to test the validity of the principle which confers to rhythm an absolute value as it organizes duration."⁵⁹ Souris proceeds to critique this opposition between rhythmic and melodic music with a simple contrast between a relatively slow melody played on a xylophone versus on a violin. He notes that the variety of different musical elements the

⁵⁶ As Deleuze notes in his study of Bergson, this was precisely the route Bergson himself took in the development of his thought. Gilles Deleuze, *Bergsonism*.

⁵⁷ See for example Jann Pasler, "Resituating the Spectral Revolution: French Antecedents and the Dialectic of Discontinuity and Continuity in Debussy's *Jeux*," *Musicae Scientiae: The Journal of the European Society for the Cognitive Sciences of Music* Aspects du temps dans la création musicale (2004).

⁵⁸ *Ibid.*, 24

⁵⁹ Souris, 242.

instruments alone determine —timbre, articulation, initial attack, the manner of suspension of each note—alter precisely those musical characteristics that would seem to define the distinction between ‘chrono-metric’ and ‘chrono-ametric’ music. This dichotomy, Souris concludes, is “incomplete.... We find that musical duration is not chronometric nor, even, that music unfolds in some prior ‘physical’ time, but that music creates its own times through contraction and expansion, color and quality.”⁶⁰ Souris does not attempt to return Souvtchinsky’s polarity to a traditionally Bergsonian one, but to accept a proliferation of times that all musical elements help to construct.

Messiaen’s Bergsonian position is thus quite different from both Souvtchinsky and Adorno. Moving beyond Souvtchinsky, musical time is no longer perceived as a strict binary, but returns to a more subtle Bergsonian thesis that acknowledges both as operational in musical experience. Further, musical time is not beholden to what Souris labeled “physical” time: in fact, there is no metaphysical priority to any perspective. In a certain sense opposite Adorno’s pessimistic negation of the two forms of time, Messiaen’s perspective affirms both, and enables time to enter into discussions of all musical parameters.

Bergson’s philosophy of time was certainly influential in the first half of the twentieth century, but not, as it quickly becomes apparent, as some orthodox system. Bergson’s thought distilled a number of traditional philosophical contexts into something like an artistic medium for a proliferation of revisions, appropriations and critiques. I have chosen to highlight these three influential lines of thought to contextualize Stockhausen, not simply because of their historical proximity, but also because of the way these Bergsonian traditions help to clarify what the composer means by ‘quality’ and ‘quantity’ and how this distinction clarifies the relationship between music and time. These Bergsonian traditions that reached the mid-century avant-garde cultivated a few particular points that are useful for interpreting Stockhausen. Souvtchinsky reinforced the discursive context of the avant-garde in which “time” – an immensely broad metaphysical problem – came to relate directly with music. More than simply exemplifying time,

⁶⁰ Ibid. Nous éprouvons par là que la durée musicale n’est point la durée chronométrique et, pour tout dire, que la musique ne se déroule point dans un temps préalable, dans un temps « physique », mais que c’est elle qui engendre son propre temps qu’elle étire, contracte, colore et qualifie. Quoted in Messiaen, *Traité*, 24.

as it had for a number of past philosophers, certain musical styles now become means of accessing and experiencing deeper, ‘ontological’ levels of time, escaping the subjective biases of experience. Adorno negated Bergson’s prioritization of “true” immanent duration and the abstracted, derivative concept of spatialized time: both pure “qualitative” duration and the abstract “quantitative” time dimension are, for Adorno, historical constructs. If they are incompatible, which Adorno did credit Bergson for elucidating, they are still flattened out, so to speak, as two characteristics that manifest themselves culturally within musical style and listening habits. Finally, Messiaen revived the possibility that both perspectives are accessible and necessary for a full understanding of musical time. In the following section, I view Stockhausen’s concept of time from the perspective of these Bergsonian traditions, emphasizing that his attempt to grapple with the listening experience of rhythmic complexity follows precisely those paths that were cleared for him. In particular, there is a persistent thesis that seems to stem directly from this discourse: that there is a mode of musical experience that must be described without recourse to quantity, and that by extension this type of qualitative experience can be applied to rhythm and meter, even though traditionally these musical parameters are the site of quantitative theory. For Stockhausen, it is precisely the challenging complexity of his compositional efforts that invites accounting for the listening experience as fundamentally qualitative.

Stockhausen

With the figures of Adorno, Souvtchinsky, and Messiaen so prominent for the mid-century avant-garde, the presence of Bergson’s premises about quantification would have been felt by Stockhausen in some form or another.⁶¹ There are certainly many distinctions that need to

⁶¹ A final Bergsonian who should be noted is Vlademir Jankélévitch, not for his presence in the discourse, but for his absence. Although taking up his position at the Sorbonne in 1950, and certainly influential on certain figures, his voice in the actual discourse of the avant-garde seems to be minimal. Perhaps, as I mentioned in my introduction, it was precisely his ascent to the academic position of authority that distanced his force of thought from the composer-intellectuals who lived at the margins of the academy. At any rate, his 1949 book, *Debussy et le mystere de l’instant*, and his well-known 1961 *Musique et l’ineffable* as well as his other writings on music channel interests that parallel the avant-garde, notably Debussy’s music and the question of musical time. Jankélévitch is known for his interest in the experience of music, not merely music in abstraction of compositional formality. The consequence of Jankélévitch’s

be made between each line of thought, but still, a major theme persisted concerning the qualitative character of experiential time. Stockhausen's effort (and Boulez's, who I will return to later) was to establish a perspective on music that retained this fundamentally qualitative character of experience. The idea of 'statistical' music was one tool Stockhausen used to work through these issues.⁶² The approximate character of statistical description, though, left room for a more specific qualitative method. Stockhausen's deployment of ideas from acoustics provides what can be read as the grounds for such an approach. 'Statistics' gives way to 'acoustics' as an inspiration for dealing with the qualitative experience of time within complex music.

Contrary to the mathematical connotation of the term, it is 'statistical' music that most clearly escapes quantitative analysis. Stockhausen gives an anecdote in a later 1971 lecture on statistical music recalling the early seeds of thought that grew into his ideas. In a story about his youth, Stockhausen's naive gestural innovation confronts the 'traditional' musical approach that identified compositional structure with an equally precise quantitative experience of that structure:

I still remember a moment during my musical education in the conservatory at Cologne when I was given a composition exercise. At the time I had no thought of ever becoming a composer. I showed it to my teacher: it was two measures of a great many notes in a small amount of time. And he said, who is going to hear that? Who can hear those notes? You don't control what you are writing. You see, what's the point in writing notes if people can't hear them? I said, oh well, I don't want you to count them. He said, well, what do you mean? Look at all these notes here. I said, I want this: frpp! He said, well, just put one note; be precise, it's better. So it was unthinkable.⁶³

absence can be felt in the relative absence of one line of thinking that Bergson's binary suggests: that abstraction and social discourse must be opposed to the basic ineffability of pure intuition, in short, that there is at some point an untouchable element to duration that cannot be captured in thought. This position is not argued by the avant-garde: for them, the qualitative level of duration is more or less successfully realized in certain music, but it always is conditioned on the patterns of the music and its relation to perception.

⁶² There are a number of explanations of Stockhausen's meaning of 'statistical.' See for example K.H. Wörner and B. Hopkins, *Stockhausen* (University of California Press, 1977), 96-100; Jennifer Iverson, "Statistical Form Amongst the Darmstadt School," *Music Analysis* 33 no. 3 (2014): 341-387.

⁶³ Stockhausen, "Composing Statistically," *Stockhausen on Music*, 44.

The older teacher's conflation between hearing and counting is upset by the young Stockhausen's radically innovative use of a rapid gesture that escapes a listening experience in which the specific compositional structure could be heard. Even if Stockhausen's modernist narrative of iconoclasm and innovation are a bit heavy handed, the debate between 'hearing' and 'counting' illustrates an important theme in Stockhausen's thought. By 'statistical,' then, Stockhausen does not suggest some empirical-mathematical mode of data collection that could model these complex passages even more precisely than subjective experience.⁶⁴ Rather than a precisely quantified vision of musical patterns, what emerge in 'statistical' musical moments are highly complex patterns that move the listening experience beyond quantification. Stockhausen adapts Bergson's claim that even the simplicity of tolling bells was basically a qualitative experience: here a qualitative approach most strongly suggests itself in the approach to highly complex musical patterns.

These 'statistical' musical instances encourage a qualitative approach over the quantitative. In "...how time passes..." Stockhausen describes this type of musical passage, in which time flows without recourse to rhythmic or metric quantification. "Clearly [in these cases], the flow of time can no longer be imagined as 'quantified'; displacement can come about gradually and continuously within time-fields, and the associated field-sizes cannot be thought of as a sort of discrete succession (the time alterations 'flow', as it were, continuously past an 'acoustical window', like a motion-picture)."⁶⁵ Two Bergsonian elements emerge in this comment. First, it is possible (though not necessary) that certain rhythmic patterns cease calling for counting. Stemming from Stockhausen's premise about the continuity between pitch and rhythm, certain rhythms call for a qualitative experience. Second, in order to grasp these 'time

⁶⁴ Campbell notes the correspondence between Boulez and Stockhausen about the obscurity of the concept of 'statistics' initially, and the extent to which Stockhausen had difficulty explaining it more extensively. Campbell, *Boulez, Music and Philosophy*, 99. Although Grant notes that Stockhausen's initial use of the term 'statistical' is caught up in the hyper-technicality of *die Riehe* and Darmstadt, she does take up the term as a useful concept for interpreting art through the historical moment of information theory. Grant, *Serial Music, Serial Aesthetics*, 120, 48. Iverson clarifies the relationship among the Darmstadt composers' interest in "statistics." Jennifer Iverson, "Statistical Form Amongst the Darmstadt School."

⁶⁵ Stockhausen, "...how time passes..." 31.

fields' it is necessary to think of these flowing continuities of music from a cinematographic perspective in order to isolate them for analysis.⁶⁶

In the context of 1950s and the attempt to serialize rhythm, it is notable that Stockhausen's interest as a composer would turn to the experience of music whose rhythmic patterns could no longer be precisely heard. If Stockhausen and others were organizing rhythm according to subdivisions or metric relations, then the admission that these durational patterns are not heard as exactly quantified in listening changed the character of the relationship between composing and listening. A theoretical perspective outside of the mere description of compositional technique would thus be required. If musical structure relied on serialized rhythmic durations, then what meaning do they have if the patterns of serial procedure have no audibility? Stockhausen's solution was to acknowledge that hearing this complexity falls back onto the recognition of a different type of pattern, a pattern that he describes later as "heard" and "felt." Rather than exact description of something like subdivision or proportion, only much more general gestures would be recognized. This mode of listening is captured in his explanation of statistical form from his 1954 radio lecture:

The statistical conception of form works with *approximate specifications* [*annähernden Bestimmungen*]. It is based on degrees of density of pitch collections, degrees of pitch location, direction of motion, tempo, tempo changes, the average volume, the volume change, the timbre and timbral mutation. Effectively, it now means that in such a composition (that is, with a similar degree of groups of aforementioned criteria) an awareness of connections will emerge. You can feel in some composition, for example, how it closely returns again to some previous corresponding gesture, but now the same density is linked with higher groups of notes, increased speed and darker timbre. In this case, density would be the criterion of the formal context. Or for example: now again the same threefold type of directed motion, namely a rising-falling-rising pitch relation—in contrast to an earlier moment, but now appearing as the same directional type (rising-falling-rising) with less reliance on the pattern's process and with a change in tone color from dark to light. These two invented examples show how to speak of note-based formal criteria. "On average," "mainly," "quite," "totally," and

⁶⁶ On this point, Stockhausen may or may not be taking a Bergsonian conception of cinematographic thought: Bergson's point was that this construction of continuity falls into the same problems as the quantitative. Thus the relationship between the composer and philosopher on this point depends on the interpretation of the ambiguous thrust of Stockhausen's point. On this concept, see Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (New York: Barnes and Noble, 2005).

“nearly similar” are the properties of change that allow us to speak of statistical form.⁶⁷

Statistical music is centered on comparisons that are not exactly calculated or quantified, but on felt groupings whose approximate relations connect them together. Stockhausen’s examples emphasize motivic relations among musical gestures, qualities, or even similar ‘densities.’ Stockhausen does not rely on precise, quantifiable comparisons among such musical moments, but lists a series of terms that better capture the more qualitative connections throughout the piece. The precision of quantified rhythmic relationships gives way to a no less rigorous but admittedly less quantitatively exact approach to formal relations. Furthermore, these relations are not merely compositional constructions, but, as Stockhausen said, rise to the “awareness” and “feeling” of approximate relations during listening.

As he was probably aware, though, Stockhausen’s concept of ‘statistics’ did not provide a strict methodology for approaching music outside of these sorts of approximate descriptions. Something more precise was needed. As I mentioned, this desire for rigor was realized in his reference to acoustics. In his essay “...how time passes...,” Stockhausen proposes one approach to a qualitative account of complex music by creatively interpreting the concept of frequency so that it provides a single time dimension that accommodates all musical parameters. Stockhausen’s studies with Meyer-Eppler and his time in the electronic music lab put him in a good place to develop more specific ideas from acoustical principles. Tapping into what he

⁶⁷ Stockhausen, “Von Webern Zu Debussy: Bemerkungen Zur Statistischen Form. ” My translation: “Die statistische Formvorstellung arbeitet mit annähernden Bestimmungen. Es geht um Grade der Dichte von Tongruppen, Grade der Tonhöhenlage, der Bewegungsrichtung; der Geschwindigkeit, der Geschwindigkeitsveränderung, der durchschnittlichen Lautstärke, der Lautstärkenveränderung; der Klangfarben und der Klangfarbenmutation. Das heißt nun: Treten in einer solchen Komposition gleiche Grade der eben genannten Gruppenkriterien auf, so wird ein Zusammenhangsbewußstein entstehen. Man spürt zum Beispiel in einer Komposition: jetzt ist wieder so dicht, wie in der entsprechenden früheren Bewegungsform; aber die gleiche Dichte ist jetzt mit höherin Tongruppen, höherer Geschwindigkeit und dunklerer Klangfarbe verbunden. Die Dichte wäre in diesem Fall das Kriterium des formalen Zusammenhangs. Oder wir spüren: jetzt wieder derselbe Dreiertyp der Bewegungsrichtung, nämlich steigende-fallende-steigende Tonhöhenlage. Im Gegensatz zu vorhin aber erscheint jetzt der gleiche Richtungstyp steigend-fallende-steigend mit geringerer Durchschnittslautstärke und mit der Klangfarbenveränderung von Dunkel zu Hell. Diese beiden improvisierten Beispiele sollen zeigen, wie man sich notlische Formkriterien spricht. Durchschnittlich, vorwiegend, ziemlich, insgesamt, annähernd und ähnliche Eigenschaftbestimmungen für Veränderungen lassen von Statistischer Form sprechen.

vaguely refers to as “a few well-known” traditions of acoustical research since the nineteenth century, Stockhausen begins with two related principles: first, that there is a threshold in human experience between slow frequencies that can be counted out as rhythm and faster frequencies that are experienced as pitch; and second, the timbre of a musical tone is determined by the tone’s upper partials, which are themselves higher frequencies with proportional relationships to the fundamental frequency.⁶⁸ With these ideas, however, Stockhausen is not primarily interested in the study of the acoustics of music, just as he did not seem especially interested in any actual study of statistics. In fact, it is more productive to read Stockhausen’s deployment of acoustics as an analogy for his more central concern, namely a qualitative but rigorous approach to musical complexity. Relationships between notable musical passages are identified through “approximate specifications,” to use Stockhausen’s phrase, or perhaps echoing Deleuze’s reading of Husserl, an “anexact yet rigorous” approach.

Stockhausen proposes an account of metric and rhythmic relations that do not rely on their numerically defined durations, but on a qualitative character akin to that of pitch—as though rhythmic patterns took on the quality of a musical note. In this way, Stockhausen disregards the difference in kind between the temporal nature of extremely low frequencies and higher ones. This move has two consequences and not, as Adorno would have it, only one. The scientific or mathematical approach deals with both pitch and rhythm quantitatively as a question of frequency. But it is also possible to invert this emphasis, and deal with both pitch and rhythm qualitatively as a question of subjective experience, as though the frequency of rhythm patterns were experienced as very low notes. His line of thought thus leaves open the possibility for the qualitative experience of pitch and tone color to enter into the realms of rhythm and tempo.

Stockhausen thus reinforced Messiaen’s argument that music can be approached in a qualitative mode, not only with respect to timbre or texture, but to aspects such as speed, rhythm and duration as well. Implicitly, Stockhausen follows Bergson’s insistence that even apparently discrete events are experienced in a flowing, qualitative time. Perhaps because of his commitment to the scientific method he was developing with respect to electronic music, though,

⁶⁸ Stockhausen, “...how time passes...,” 20. While any number of sources might supply these theories, all of Stockhausen’s discussion of acoustics can be reduced down to a summary of the work of Helmholtz.

Stockhausen did not take this conclusion to its end. His musical analyses in “...how time passes...” falls into a quantitative discussion of frequency and upper partials. Stockhausen’s approach uses a quantitative version of a qualitative phenomenon, approaching the alterations of speed, duration, and rhythm in a way analogous to the quantitative analysis of timbre through the distribution over a frequency spectrum. But this return to the scientific perspective does not align with the goal he sets out to accomplish, which is to provide a musical context in which the musician answers to what he called “the ‘proper time’ of the sound, and instead of mechanically quantifying durations...he now measures ‘sensory quanta’; he feels, discovers the time of the sounds; he lets them take ‘their’ time.”⁶⁹ In this context the ‘quanta’ of perception moves from numerical account of rhythm and tempo to that of the ‘sensory.’ Stockhausen’s explicit argument remains committed to the language of ‘rhythm formants,’ ‘sound spectra,’ and other acoustical or proto-acoustical ideas that, even upon leaving the quantitative realm are yet still discussed as though this perspective still took priority. However, implicit in Stockhausen’s method is a stronger argument, that there is a rigorous yet non-quantified way in which to compare rhythm patterns like different ‘notes’ whose ‘frequency’ is defined by rhythm, meter, and tempo.

Rather than rely on Stockhausen’s somewhat confusing terminology, it is more useful to rehearse his argument with a much simpler example before re-applying it to *Zeitmaße*. The basic acoustical principle Stockhausen relies on is that a single pitch, say A=440, can be measured quantitatively as a frequency, but is experienced qualitatively as a tone. Likewise, the musical experience of transposing down octave by octave can be described following a division by two: A₃=220 Hz, A₂= 110, and so on. At a certain point this pattern of division results in frequencies that human experience no longer hears as a continuous tone, but hears individual pulses. Continuing the pattern of division past this threshold, the “pitch” A reaches frequencies of 13.75, 6.875, 3.4375, and 1.71875 Hz. Even if these frequencies are related to a mathematically defined set, nominally labeled A, a pulse of 1.71875 Hz would obviously not be heard as a pitch, but, given a harsh waveform, as a steady beat, 103.125 beats per minute. A pulse at around 103 bpm, also invites the very obvious, quantitative description of the number of pulses and the organization of rhythmic subdivisions. In most music, the homogenous tempo of a particular

⁶⁹ Ibid. 37-38

movement would not provide much detail as to the formal process of the work. Yet given a certain consistency of this pulse within a piece with a wide variety of tempo changes, tempo becomes an identifying characteristic of similar passages over the span of a work. The strict identity between the time scale of tempo and that of actual heard pitches is not present, of course: upper frequencies are never heard as number, and rhythmic articulations are different in character than periodic waveforms. However, pitch now provides an image of qualitative consistency with which to compare different rhythms, meters, and tempi that occur throughout a piece of music. 'Faster' or 'slower' passages in this perspective have a direct parallel with the experience of 'higher' or 'lower' notes. Consistent tempo and subdivision between two passages can be grouped together as similar, even if they cannot be identified mathematically.

Stockhausen also connects timbre to rhythmic subdivision in a similar way. The timbre of different instruments, or of various vowel sounds from the human voice, is determined by the shape of the wave, whose complexity, as Fourier clarified, can be mathematically modeled as the addition of a series of different sine waves with greater or lesser proportionality with the strongest 'fundamental' wave form. Relatively consistent metric groups and rhythmic subdivisions thus roughly parallel the harmonic ratios of the partials of a tone. As with normal perception of instrumental tone color over the span of some musical piece, the continuity of the self-identical musical voice is not defined by a strict consistency of the ratios of upper partials, since the timbral continuity of acoustic instruments and the human voice often varies its spectrum to a large extent.⁷⁰ Continuing along Stockhausen's line of thought, if the relatively consistent division and subdivision of a metric unit were taken as periodicities of some imagined vibration, then passages with similar metric and rhythmic qualities can be described as sharing

⁷⁰ The human perception of timbral quality also models how perception could rigorously conceptualize 'approximate' qualitative identities. The heard timbral identity between different notes from the same source is based on only roughly consistent collections of upper partials that are not, in fact, precisely identical. Tones that, despite their common source, are not identical with respect to the strength of upper partials, can still be heard as belonging to the same source. Examples like the vowel differentiation in singing or the tripartite registration of a clarinet (into the chalumeau, clarion, and altissimo) illustrate that the heard identity of voice does not translate into self-identical wave form patterns. These variations of waveforms become complicated within a quantitative analysis, compared to the relative simplicity of the experience of an embodied voice or acoustic instrument moving through vowels or registers.

similar pitch and timbre. In this perspective, precise rhythms would not need to be heard as belonging, for example, to some rhythm motive series, but could be connected together based on relatively consistent rhythmic subdivisions. Take again, the note A=440 Hz, played on an instrument whose waveform is constituted by a large presence of upper partials. These partials can be modeled by the summation of waves at whole number proportions to the fundamental. With the fundamental being 440, the first upper partial is at $440 \times 2 = 880$, then $440 \times 3 = 1320$, $440 \times 4 = 1760$, and so on. Applying this pattern to the “notes” that land below the psychological threshold of pitch equates to rhythmic subdivision. The extremely low A=1.71875 Hz has a first overtone at 3.4375 Hz (the “octave”), 5.15625 (the “fifth”), 6.875 (second octave) and so on. But given that the “fundamental” frequency approaches the duration of a quarter note, these “upper partials” are simply rhythmic subdivisions: eighth note, eighth note triplet, sixteenth note, and so on. This is not to say (though Stockhausen falls into this language at times) that a musical passage with a particular composite rhythm really is a musical note at an extremely low frequency. Rather, rhythmic and metric contrasts can be compared against each other by their relative “timbral” consistency. In such a ‘qualitative’ analysis, distinct musical phrases become “notes,” rhythmic subdivision becomes “timbre,” and tempo becomes “pitch.” These transformations provide a specific image of the ‘quality’ of musical passages without necessitating the conscious identity between the quantitative similarities among rhythmic patterns.

Zeitmaße

In order to better illustrate the consequences of this line of thought, it is worth turning to Stockhausen’s woodwind quintet *Zeitmaße* with special attention to the roles that tempo, meter, and rhythm play in formal organization. Stockhausen himself uses this piece as an example of his techniques in “...how time passes...” One of the defining works of the 1950s, *Zeitmaße* has received considerable attention, and scholars have thoroughly examined the serial structures of each musical element and the other compositional patterns that organize the work.⁷¹ As

⁷¹ Genevieve Marcus, "Stockhausen's *Zeitmasse*," *The Music Review* 29, no. 2 (1968); Pascal Decroupet, "Gravitationsfeld Gruppen: Zur Verschränkung Der Werke Gesang Der Jünglinge, Gruppen, Und *Zeitmasse* Und Deren Auswirkung Auf Stockhausens Musikdenken in Der Zweiten Hälfte Der Fünfziger Jahre," *Analysieren und Hören neuer Musik* 12, no. 1 (1997);

Decroupet's analysis points out, the clarity of the work's contrast in tempo and meter is highly ordered, though the tempi themselves are famously embodied in the performer's technical abilities with the indications to go as fast or as slow as possible.⁷² As the name of the piece implies, the contrasting passages of *Zeitmaße* are characterized by different qualities of meter, rhythm, and tempo. In the following 'qualitative' analysis, three operations occur, which use the idea of rhythm, timbre, and pitch as models for a qualitative description of phrasing, subdivision, and tempo. First, clear phrases will be imagined as durations of a single "note"; second, consistent rhythmic subdivisions are categorized into distinct timbres or "voices"; and third, prominent metric units and related tempo changes will translate roughly into a contour of some low, approximate pitch space. This analysis of *Zeitmaße* thereby bypasses the precision of mathematically defined rhythmic relations (even those based on serial organization). Durations of phrases, while measured out by metric units, are not counted but felt as relative length of notes. Similarities in rhythm and meter can be identified in the same way that timbres are more obviously identified in listening: as the heard consistency of a distinct voice as it changes register, vowel timbre and pitch within a performance. And the contrasting tempi of different passages can be imagined as the 'fundamental' frequency of some very low pitch.

The first step in this method will be to 'transpose' durations of distinct passages into single notes following a 12:1 ratio. Thus, a musical passage with a duration that is notated in the original score approaching the length of twelve eighth notes will be represented in the analysis as a single eighth note, and so on, summarized in Table 2.1. This diminution offers a simple notation system, since many passages in *Zeitmaße* approximate a length that fits into a simple subdivision of a basic 12:1 proportion.

Heinz-Klaus Metzger and Rainer Riehn, *Musik-Konzepte: Darmstadt-Dokumente. I* (München: Edition text + kritik München, 1999); François Nicolas, "Comment Passer Le Temps...Selon Stockhausen," *The passing of time according to Stockhausen*, no. 6 (1987); Dieter Schnebel, "Zeitmaße Oder Geschwindigkeit Als Aspekt Der Zeit," in *Denkbare Musik: Schriften 1952–1972*, pp. 230-235 (1972).

⁷² Pascal Decroupet, "Une Genèse, Une Oeuvre, Une Pensée Musicale... En Mouvement: Zeitmaße De Karlheinz Stockhausen," *Collected Work: Liber amicorum Célestin Deliège*. 52(1998).








Original 8 th note count	Transcribed duration
6	
9	
12	
18	
24	
36	
48	

Table 2.1: *Phrase transposition from original durations*

The opening passage models how succinctly many of the sections of *Zeitmaße* fall into roughly proportional lengths. In Figure 1, the first eight measures of *Zeitmaße* are shown (reduced to two staves) with five distinct phrases, with the phrases labeled with brackets 1-5. The first and third phrases are both articulated by short rests shared by all the instruments, which in each case create short passages that are nearly 18 eighth notes in length. Following the “transposition” outlined in Table 2.1, an 18 -eighth note phrase length can be symbolized by a single duration of a dotted eighth.

The image shows a musical score for a woodwind ensemble, specifically a reduction of measures 1-8. The score is in 4/4 time. It features five numbered brackets (1-5) highlighting specific rhythmic passages. Bracket 1 is above the flute and bassoon staves. Bracket 2 is below the clarinet staff. Bracket 3 is above the bassoon staff. Bracket 4 is above the english horn staff. Bracket 5 is above the english horn staff. The score includes dynamics like 'pppp' and a tempo marking 'verlangsamen'.

Figure 2.1: Zeitmaße Reduction mm. 1-8, with brackets 1-5

The contrasting rhythmic gesture in the clarinet bracketed in passage 2 is three eighth notes long, bracket 4 is 12 eighth notes long, and bracket 5 is 15 eighth notes. These short passages are either articulated by rests that cut through the entire ensemble, or, in the clarinet interpolation in bracket 2, by distinct contrast in rhythmic character. Following a rule of diminution by 12, the opening passage could be notated with the summarizing note shown above each bracket. Below,

I apply this transposition rule to the entire piece, using individual notes to represent distinct musical passages. In this method of transcription, passages with precisely the number of eighth notes will be notated normally, and phrases with approximate number of eighth notes will have a tremolo mark, a sustain, or some articulation sign that illustrates the *quality* of the duration. Only a minority of passages fit precisely into the 12:1 ratio, but a large number of passages approach these durations. In the passage labeled with bracket 5 in Figure 1, for example, the duration of the sustained notes in each voice end after 15 eighth notes. This passage exemplifies the sometimes ambiguous character of this transformation. Accounting for the actual fluctuations in tempo that occur in the piece, the relative durations of each passage can be altered not by a change in rhythmic proportion, but of the quality of articulation. Phrase 5 is marked by a large diminuendo as well as an indication to slow down. The quality of this duration and the time it take can thus be approximated by a dotted eighth note with a staccato mark. It also could have been more precisely notated with an eighth note and tied thirty-second note. This ambiguity reflects the parallel difference between articulation and duration. Overall, however, retaining the approximate duration and altering the articulation is a useful means of translating the phrasing of the work into a qualitative formal transcription.

The second reductive transformation follows Stockhausen's logic that correlates rhythmic subdivision with the characteristic upper partials of an instrument's timbre. It is notable that there is a relatively distinct set of subdivision rules in *Zeitmaße*. These rules are deployed by using even or odd tuplet groupings. Hence, a passage that follows a certain mode of subdivision can be heard to share a certain "timbral" identity. In this analysis, the diversity of subdivisions reduces down to three rules that results in three distinct "voices." In order to avoid Stockhausen's distracting connotations between timbral 'formants' and motivic relations, it is useful to describe them in a more abstract manner. I refer to them here not as 'formant groups' or 'timbres' but as 'composite voice' sets, or CV sets. That is, musical passages belong to a particular composite voice set if their composite rhythmic subdivision aligns analogously to some imagined timbre of a distinct instrument. This metaphorical instrument that defines a CV set does not produce exactly identical upper partials in each case, but is recognizable by a relatively consistent emphasis on characteristic rhythmic subdivision. In *Zeitmaße*, there are a wide variety of combinations of subdivision, but overall, a single relatively consistent rhythmic idea dominates

each passage. It is thus possible to reduce this CV set “ensemble” into three voices. CV-set A includes any passages with predominantly odd tuplets which subdivide either the measure or metric unit into 3,5,7,9, or 11. CV-set B includes any passage whose rhythms establish a pattern of mostly even subdivisions, that is, keeping with half, quarter, eighth, sixteenth, thirty-second, and sixty-fourth. CV-set C includes any passages with long sustained durations with brief interruptions that do not establish a consistent feeling of subdivision. For example, returning to the opening measures of the piece, the opening passage (Figure 1, bracket 1) is most clearly characterized by the duple subdivision of the bassoon line, while the short clarinet flourish at the end of the second measure (marked 2b in the full transcription) is constructed mainly out of five and three tuplet divisions. The lack of rhythmic activity in bracket 5 results in a sustained moment that does not express any clear subdivision, and so exemplifies CV-set C.

Phrase 4 also illustrates that there are often actually both duple and triple divisions, but certain characteristic gestures emphasize 3- or 5- division over a series of less definitive duple durations. Each CV set, after all, is rarely purely ‘harmonic,’ that is, rarely follows the model of the upper partial series precisely. Thus the result is less of a homogenous pitch space and more akin to a collection of cymbals or other non-pitched percussion of different sizes. “Pitch” contour within the transcription is thus only a relative description of tempo. Phrases with especially ‘noisy’ composite rhythms are given an X note head.

The purpose of the CV set is not simply to recognize relative metric consistency across the piece, but to clarify that these consistencies function thematically. The ‘ensemble’ of the three CV-sets thus presents a map of one modality of motivic relationship that spans the entire work. Rather than follow the development of a single motivic idea in the traditional realm of melodic or rhythmic gesture, the piece is brought together by loose connections relating to metric subdivision, toward what Stockhausen described as a ‘statistical’ picture of the musical form.

The third transformation represents the tempo of a particular passage by imagining the ‘frequency’ of the metric unit as a sort of fundamental pitch. This step provides a relative comparison that is affected by the local tempo of each passage, the alignment of composite rhythms among the voices, and the extent of subdivision. The relative contour of the metric ‘frequencies’ translate somewhat better if the CV sets are imagined to be something like non-

pitched percussion groups. A very slow metric pulse is now imagined as a 'lower' note in relation to passages which maintain a faster steady pulse.

Odd (CV-A)

Even (CV-B)

Sus (CV-C)

Passage transcribing the reduction in Figure 2.1

measure: 2b 5b 11 16 24 27b 29 [53/8]

measure: 1 3b 12 14 18 21 22

measure: 7 9 26

4

73 79 81b 85b [84]

45 49 53 55 104b 110

41 59 67 126

8

154 161 165 166 171 172b 173 177 178 186

134 137 140 141 144 [28]

172 187

Figure 2.2: Qualitative Transcription of *Zeitmaße*

This transcription captures the idea of the plurality of time measures, or tempi, ‘*Zeitmaße*,’ that sectionalized the piece. Each of the above ‘notes’ represent a fairly clear phrase articulation (labeled with measure numbers underneath), which is set off with a brief pause, clear attack, or some other event. In certain cases (for example, the passage beginning at measure 207) there is considerable interpenetration among the different phrases, but still some sort of articulation. The groups of phrases retain their plurality, but it is not primarily through precise quantification that they are accounted for.

The formal layout of *Zeitmaße* could be described in a number of ways, but the preceding transcription provides a “statistical” version of the form, in which the CV-sets each represent a thread of continuity among similarities that are potentially motivic. If precise rhythmic motives are difficult to latch onto while listening to this piece, it is much easier to recognize a consistent departure and return odd tuplets, or connect moments of purely sustained sonorities together to organize the piece. The form is thus not a simple, overarching schematic, but like many mid-

century pieces, weaves a number of different thematic principles throughout its fluid, through-composed form.

Conclusion

As I will pursue further in the next chapter, there is a more complicated historical connection between the two versions of time in which Stockhausen is situated. Bergson's critique of dimensional time opposed the conflation of time with space, but he did not dispense with the more basic characterization of time as a *multiplicity*. Bergson's term *multiplicité* was translated into German as *Mannigfaltige*, which is more commonly translated into English as 'manifold.' If time was not merely another spatial dimension, it was yet some sort of manifold, and Bergson's task was to clarify the nature of this manifold. This way of framing the question of time also provided a point of departure for Helmholtz and opens up another aspect to the history of time that the mid-century avant-garde was engaged with. Stockhausen's re-hashing of basic principles of acoustics rest on foundational ideas about sound that had been codified and clarified by Helmholtz, but more broadly, Helmholtz in turn was responding to nineteenth century developments in his approach to perception, such as the mathematician Bernhard Riemann's theory of manifolds. For Helmholtz, the treatment of time as a manifold was a useful but limiting starting point provided by Kant. Helmholtz was more interested in the malleability and plurality of perceptual manifolds that could provide a scientific enrichment to the philosophical approach to time and perception.⁷³ Helmholtz's method brought together both the physical properties and the physiological reception of the world, and investigated the consequent threshold between human perception and brute reality. Whether or not Gilles Deleuze is correct in suggesting a historical connection between the mathematician Bernhard Riemann, Helmholtz and Bergson with respect to the concept of multiplicity, it nevertheless defines a persistent thread which frames Stockhausen's problem, as well as Boulez's, which I will return to later: can there be a musical experience in which there is a plurality of events that escape quantification in time? Even further, can music more generally provide a model of the qualitative flow of passing time that provides an escape from mere dimensionality?

⁷³ See Hyder's analysis of 'manifolds' in Helmholtz, Hertz and others. David Hyder, *The Mechanics of Meaning : Propositional Content and the Logical Space of Wittgenstein's "Tractatus"* (Berlin: Walter de Gruyter, 2002).

In my analysis of *Zeitmaße* above, these two questions were conflated with respect to the analysis of rhythm, but become clarified again at the level of form. There is nothing about Stockhausen's description of rhythmic relations that could not be applied to any music that had a consistent meter. To take a stark contrast from *Zeitmaße*, say a march by Sousa, the metric subdivisions would create an almost completely homogenous composite voice set and so does not provide any means of formal distinction. For Stockhausen, though, the rigorous contrast between meters, rhythmic patterns, and tempi lifted these musical parameters up to the level of thematic functionality. From this perspective, Stockhausen's position is more easily defended. It is not necessarily the case that 'time itself' is revealed, or as Kramer might suggest, that there becomes a plurality of 'times.'⁷⁴ Instead, my move away from an architectonic formal schema towards a more dynamic traversal of the piece provides a means of setting the qualitative version of time into relief from abstract dimensionality. In *Zeitmaße*, this move was driven by relationships among metric and rhythmic similarities that were themselves difficult to pin down because of the often dense level of detail. However, the perspective that Stockhausen invites is not limited to highly complex music. If pitch and timbre can combine with meter and rhythm, not in a quantitative dimension, but a qualitative manifold, "time" becomes the common ground in which the different parameters can be related. Time in this context is thought of as a manifold in which heterogeneous contents flow qualitatively, rather than a single dimension in which all periodicity can be calculated. With this ultimately Bergsonian concept of time, it is possible to give Stockhausen's position a more sympathetic interpretation than is possible within the scientific context his ideas are ostensibly set.

⁷⁴ Jonathan Kramer, "New Temporalities in Music.,"; Kramer, "Postmodern Concepts of Musical Time," *Indiana theory review* 17, no. 2 (1996); Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (Schirmer/Mosel Verlag GmbH, 1988).

Chapter 3: The Mathematical and Philosophical Construction of Boulez's Smooth Time

In Boulez's lectures at the Darmstadt courses in 1960, he introduced the now well-known contrast between 'smooth' and 'striated.'⁷⁵ On the surface, the distinction is a simple one: 'smoothness' describes the distribution of some musical element within a continuous, non-partitioned gamut, while the 'striated' is articulated by modules, temperament or pulse. At the time, Boulez considered the smooth-striated distinction central to his compositional perspective: "...my whole formal time system is based on these two categories and on them alone," he claimed.⁷⁶ By proposing this 'formal time system,' Boulez sought to apply these concepts in a generalized manner, beyond their application to any single musical element. Boulez established the smooth and striated as 'axiomatic' structures, employing the concept of 'axiom' he took from the philosopher Louis Rougier. From this perspective, the smooth-striated logic could apply to any musical element, whether the temperament of pitch space, the periodicity of metric patterns, or the formal layout of a piece of music.⁷⁷ The concept does not so easily apply universally, though. Smooth or striated pitch space, for example, is fairly clear in its application: the frequency spectrum can be easily imagined as either a smooth continuum or a tempered scale. Amplitude, too, can be understood as a smooth spectrum that lives behind the traditional striation of dynamic markings. Smooth rhythm or meter, though, presents a special set of problems that do not immediately arise with pitch or dynamics. As Boulez recognized, the articulations of rhythmic and metric patterns are events that tend toward striation, marking borders and establishing units and proportions of duration. Smoothing over rhythm and meter cannot merely

⁷⁵ Later published in Pierre Boulez, *On Music Today*, trans. Susan Bradshaw and Richard Rodney Bennett (London: Faber and Faber, 1971); *Orientalions*, trans. Martin Cooper (Cambridge, MA: Harvard University Press, 1986).

⁷⁶ *Orientalions*, 87.

⁷⁷ *On Music Today*, 30. Boulez quotes Rougier: "I could do no better than to quote these sentences by Louis Rougier on axiomatic method", in which "...a single form may apply to diverse material, to groups of differing objects, provided only that these objects respect the same relationships among themselves as those present among the undefined symbols of the theory.' I feel that such a statement is fundamental to contemporary musical thought...."

be a matter of avoiding metric patterns of repetition or clear proportions among note values. Music without apparent metric or rhythmic regularity is marked with moments of rupture, radically discontinuous passages riddled with unexpected events. That such music should be called ‘smooth’ departs from most normal connotations of the term, for the music itself is not smooth; what Boulez asserts as smooth is the musical time. Boulez recognized that this divergence between music and musical time was central to his theoretical perspective, and that it was necessary to clarify the musical issues that brought him to that point. Boulez responded to these compositional and perceptual challenges by evoking a large number of mathematical, psychological and philosophical concepts that informed the construction of ‘smooth time.’ After describing this lineage of thought in more detail, I will demonstrate how Boulez worked through these problems in his 1957 song, ‘Une dentelle s’abolit,’ which became a movement of *Pli selon Pli*. As a piece that was contemporary with his interest in the smooth-striated contrast, it represents a number of different compositional decisions with which he attempted to construct smooth time.

A number of scholars have pointed out that Boulez’s massive intellectual world influenced the composer’s ideas about time in many different ways.⁷⁸ With respect to the concept of smooth time, a difficulty arises in deciding which of Boulez’s many influences are most historically significant for interpreting his ideas and his music. Boulez’s generally mathematical and scientific sounding language is certainly well-known, but in many cases it is unclear whether his terminology was meant to have some recognizable point of reference, or whether he relied on the vocabulary to simply sound more technical.⁷⁹ Campbell admits that Boulez’s explicit references to the scientific and mathematical work of Pasch, Broullion, and Rougier do not represent Boulez’s thorough understanding of their respective fields but seems to rely on a

⁷⁸ Edward Campbell, *Boulez, Music and Philosophy* (New York: Cambridge University Press, 2010); Martin Iddon, *New Music at Darmstadt: Nono, Stockhausen, Cage, and Boulez* (Cambridge, UK; New York: Cambridge University Press, 2013); Peter Stacey, *Boulez and the Modern Concept* (Lincoln: University of Nebraska Press, 1997).

⁷⁹ Campbell, *Boulez, Music and Philosophy*; Iddon, *New Music at Darmstadt*; Stacey, *Boulez and the Modern Concept*; Jonathan Goldman, *The Musical Language of Pierre Boulez: Writings and Compositions* (New York: Cambridge University Press, 2011).

somewhat undeveloped appeal to authority.⁸⁰ And as Jonathan Goldman observes, “[Boulez] adopts a strategy of what could be termed ‘rhetorical displacement’: the ever-combative Boulez is scientific in literary society, and poetic among technocrats, both strategies that aim at dominating discursive space.”⁸¹ The brute force of his technical style in the lectures at Darmstadt might be an exception: this time attempting to beat the technicians at their own game. Georgina Born recognizes this tension in Boulez’s strategy concerning the question of mathematics in his 1960 Darmstadt lectures.⁸² On one hand, Boulez rails against the trend in approaching music mathematically. “What is called the ‘mathematical’ – and is in fact the para-scientific – mania is a convenience because it gives the illusion of an exact, irrefutable science based on precise facts.”⁸³ However, concluding his lectures, he is obliged to give an account for his own extensive use of mathematics. “Why all these analogies with mathematical method, you may be asking. I have never established any direct relationship between music and mathematics, only simple relations of comparison. Because mathematics is the science with the most developed methodology at the present time, I have taken it as an example that may help us to fill the gaps in our present system.”⁸⁴ Berating actual connections with mathematics while upholding ‘analogical’ connections belies the sort of militancy Boulez was engaged in. With these sorts of tensions in his approach, it is tempting to dismiss Boulez’s technical language in his 1960 lectures as intellectual posturing. However, as I argued with the case of Stockhausen, Boulez’s mathematical language is an aggressive rhetorical strategy that produces, then obscures, important music-theoretical ideas about time. Instead of simply reading Boulez’s references as an empty rhetorical posturing, his attempt at deploying mathematics can provide one facet of his notion of time—one facet among others, for Boulez’s concept of time does not actually reduce down to mathematical dimensionality. There is an additional factor for Boulez, one which must

⁸⁰ Campbell, *Boulez, Music, and Philosophy*, 105.

⁸¹ Goldman, *The Musical Language of Pierre Boulez*, 35.

⁸² Georgina Born, *Rationalizing Culture: Ircam, Boulez, and the Institutionalization of the Musical Avant-Garde* (Berkeley: University of California Press, 1995), 96.

⁸³ Boulez, *Orientations*, 73.

⁸⁴ *Ibid.*, 98.

incorporate the listener and performer as much as the composer, and thereby must account for experience, of movement through time as much as the dimension itself.

In fact, Boulez shared Stockhausen's strategic position to a large extent. Boulez's technical language created an ostensibly mathematical metaphor for dealing with music, but relies on conceptions of time more closely attuned to the heritage of Bergsonian background of his intellectual world I described in the previous chapter. On one hand, their most pronounced discussions of time at Darmstadt in the late 1950s and early 1960s cast time in a language that borrowed extensively from a mathematical-scientific paradigm. The extent of this borrowing, as I will show in this chapter, is much more considerable than scholarship has appreciated. In tension with this style, their use of the concept of 'time' helped to focus their approach to the questions of musical experience that their serial and post-serial techniques had developed. Considering that Boulez shared the same intellectual world I described in the previous chapter, most pertinently the Bergsonian premises about time that defined a large portion of his intellectual horizon, Boulez's ideas stand in a tension between a dimensional concept of time and a durational, or 'intuitional' one, as I described in my introduction. This tension not only contextualized his and Stockhausen's views on time, but indeed much of the twentieth century.

While differing in detail, the strategies for the two composers also follow a similar path. Both composers avoid situating themselves within any particular tradition of thought, and present their ideas in famously dense, technical sounding language with few specific references. Their ideas borrowed extensively from fields of study that the composers were familiar with: for Stockhausen, the principles of acoustics he engaged with during his studies in Cologne; and for Boulez, his mathematical background with which he began his academic career. The terms 'statistical' and 'smooth' are both lifted from the realm of science and math, though the relationship between the composers' usage and the original sense of these terms are not so straightforward. As I discussed, by 'statistical' Stockhausen did not seek to evoke a sense of mathematics, but of the approximate awareness of musical patterns. And as I will expand on later, by the early twentieth century, 'smooth' was a reference to an infinitely differentiable function or manifold. Boulez's subtle deployment of this concept exemplifies precisely that tension Born recognized in his general attitude to mathematics. Below, I will clarify the specific lineage of thought with respect to the mathematical language Boulez uses, and argue that his

concept of 'smooth' shares strong resemblances with the development of calculus since the 1800s. His ideas are not merely reducible to this concept of time however, and it is the point of excess in Boulez's thought which reveals that his idea of 'smooth' lives within the question of the concrete experience of music, not of abstract models. A close reading of his 1960 Darmstadt lectures reveals that the fundamental project was not foremost a scientific or mathematical one, then, but phenomenological in character.

At the same time, it is also true that both Boulez and Stockhausen deploy more than merely a stylistic penchant for scientific-like obscurantism. Both composers actually do take substantial content from their respective fields. Boulez uses concepts from calculus to illustrate a means of avoiding inadvertent patterns introduced into music by listener expectations. Even these concepts, though, while cast in a language that seemed to establish these composers as truly *avant-garde*, relied on concepts that fall back on ideas that lay at the foundation, not the cutting edge, of their mathematical and scientific fields. Stockhausen's conception of 'statistical' revolved around a somewhat loose reading of the acoustical ideas that Helmholtz codified in the mid-nineteenth century, while Boulez's conception of 'smooth' seems to be re-hashing the basic premises of calculus as it was articulated by Bernhard Riemann and others. Rather than simply rehearsing nineteenth century mathematics, however, Boulez takes another step and deploys these concepts in response to the Bergsonian lines of influence that helped shape the discussion of time around him. As will become clear with 'Une dentelle s'abolit,' Boulez's goal with smooth time was not merely to create music that occupied a smooth time dimension, but to form an experience of this smoothness within music. Boulez found a productive tension within the question of time: not to cast music into dimensionality, but bring dimensionality into musical experience—as Gilles Deleuze aptly summarized, "to make sound the medium which renders time sensible."⁸⁵

To fully capture the concept of the 'smooth,' Boulez's idea must be contextualized within this particular historical frame, and not in the isolation of an utterly innovative music theory. This is not to say, though, that Boulez's ideas are mere appropriations of the past. It is too simplistic, for example, to identify Bergson's qualitative-quantitative distinction with Boulez's smooth-

⁸⁵ Gilles Deleuze, "Boulez, Proust, and Time: 'Occupying without Counting,'" *Angelaki: Journal of the Theoretical Humanities* 3, no. 2 (1998): 72.

striated contrast. There are many similarities, to be sure. “In smooth time,” says Boulez in an especially Bergsonian moment, “time is filled without counting; in striated time, time is filled by counting.”⁸⁶ However, while on one level counting is identified with the striated, both the smooth and the striated could be thought from the perspective of the quantified, dimensional model of time, or alternately from an approach concerned with the qualitative flow of perception.

The Continuous and the Discrete

Additionally, the general technique of polarizing two different modes of time could be easily traced back well before Bergson. Since antiquity, philosophers distinguished between number and measure by similar means as Boulez. This contrast served as the basis for a range of philosophical clarifications into the nature of time. Boethius even noted that “According to Pythagoras all quantity is either continuous or discrete. But that which is continuous is called ‘magnitude,’ whereas that which is discrete is called ‘multitude.’ The property of these is different and almost contrary.”⁸⁷ Another influential figure for Boethius—and much of history—Aristotle’s discussion of time also directly deals with a similar contrast, and is likely one source for the nineteenth century discourse that contextualizes Boulez. While neither Bergson nor the mathematical world claimed to make a radical departure from past thought, it is important to

⁸⁶ Boulez, *On Music Today*, 94.

⁸⁷ See also Boethius’s development of a concept of ‘multiplicity.’ Calvin Martin Bower, “Boethius’ the Principles of Music: An Introduction, Translation, and Commentary” (Peabody College for Teachers, 1966), 106. These differentiations—between number and measure, quantity and quality, space and time, continuous and discrete, magnitude and multitude—are not only older than Bergson, they are inscribed within a basic conceptual apparatus in philosophy. Bergson’s task was not then to invent them, but to articulate their misapplication and correct the failure of the distinction on a systematic and historical level.

In Plato’s *Philebus*, to take another example, Socrates differentiates the judgment of the unlimited relativity of less/more, higher/lower, or /stronger /weaker, etc., with the limits established by quantitative judgment: “Wherever they [ie, ‘more’ and ‘less’] apply, they prevent everything from adopting definite quantity.... but let quantity and measurement take a foothold in the domain of the more and less...they will be driven out of their own territory....” In this late Platonic moment, unlimited relations “are always in flux and never remain, while definite quantity means standstill and the end of all progression.” The ‘proto-Bergsonian’ flavor of the *Philebus* is even inscribed in the unfolding of the dialogue, though the limited is championed rather than the unlimited: above the flux of the realm of unlimited pleasure stands the quantified limitation of knowledge.

clarify that, contrary to their image and to certain modernist views of the twentieth century, Boulez and Stockhausen built on ideas that do not escape the past.

These historical connections are important because they do not align with scholarship that relies on the work of Deleuze, whose reading of Boulez, Bergson, and the mathematician Bernhard Riemann reinforces a modernist interpretation of Boulez and his compatriots as radically creative and original figures who push history forward with their compositional and theoretical innovations.⁸⁸ In Deleuze and Guattari's *A Thousand Plateaus*, Boulez gets credit as being "the first to develop a set of simple oppositions and complex differences...between smooth and striated space."⁸⁹ This statement is dubious, considering that even within the context of *A Thousand Plateaus* this binary is described in a fundamentally Bergsonian character, fed by the mathematical innovations of Riemann. Deleuze and Guattari reinforce the same sense of modernism Boulez relied on to construct his iconoclastic image that played so heavily in the composer's success. At the same time, Deleuze's approach to both Boulez and Bergson relies on a very useful narrative that sheds light the matter in an interesting, if historically problematic way.

Deleuze makes a connection between Bergson and Bernhard Riemann that is based on proximity and resonance with respect to the question of *multiplicity* or *manifold*.⁹⁰ This

⁸⁸ See: Campbell, *Boulez, Music and Philosophy*; Simon Duffy, *Deleuze and the History of Mathematics: In Defence of the 'New'* (London: Bloomsbury, 2013); Graham Jones and Jon Roffe, *Deleuze's Philosophical Lineage* (Edinburgh: Edinburgh University Press, 2009); Campbell, *Music after Deleuze* (Bloomsbury Publishing, 2013). Deleuze and Guattari's modernism with respect to music has been discussed by Scherzinger. Martin Scherzinger, "Musical Modernism in the Thought of "Mille Plateaux," and Its Twofold Politics," *Perspectives of New Music* 46, no. 2 (2008).

⁸⁹ Gilles and Guattari Deleuze, Felix, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minneapolis Press, 1987), 477. In the chapter "the Smooth and the Striated," Boulez's musical model is in fact chronologically the last expression of this difference.

⁹⁰ Contrary to current mathematical usage, but in line with historical philosophy, I will take 'manifold' and 'multiplicity' to refer to the same concept. Bergson uses the term *multiplicité* in his descriptions of the nature of space and time. While the philosophical senses of the terms are similar, the mathematical senses are not. According to Deleuze and Guattari, *Mannigfaltigkeit* had first been used as a noun by Riemann—presumably in contrast to merely *das Mannigfaltige*, which is equally 'manifold' in many cases, and equally a noun. It is difficult to verify this claim. While Deleuze uses *multiplicité* as a translation of Riemann's term *Mannigfaltigkeit* (which in

connection is a provocative thesis because of its implications for the history of the concept of time, but Deleuze does not note any catalog of explicit textual reference in Bergson's writing to support it. In any case, his association is apt from a conceptual perspective. Bergson did spend considerable time critiquing the general mathematical and scientific world of his time, which was directly indebted to Riemann in many ways. Furthermore, if Deleuze heard Boulez responding to Riemann, it is also possible to hear Boulez responding to the mathematician as well, and I will demonstrate that the conceptual similarities do suggest some sort of historical relationships among them. Both Boulez and Bergson began as promising students of mathematics, before moving on to their more famous accomplishments, and so would have at least been familiar with the basic principles of calculus that were codified by Riemann. Boulez's invocation of mathematics in his 1960 lectures rest on a language borrowed from Riemannian concepts that inform the study of calculus since the late 19th century, possibly channeled through Boulez's interest in structuralism. Most pertinently, Hermann Weyl's description of Riemann surfaces as 'smooth' are but one element of mathematics presaging Boulez's lectures, in which the composer also includes references to 'surfaces,' 'integration,' 'limit', and other key terms that would have been available to him. This language also flows into the study of topology, from which Boulez also seemed to be taking certain concepts.

Riemann, and, with respect to Stockhausen's acoustics references, Helmholtz, were influenced in part by the paradigm established by Immanuel Kant. The scientific version of neo-Kantianism that developed in the nineteenth century accepted, in the broadest terms, Kant's conception of time as a manifold of intuition.⁹¹ As Peter Pesic notes, Kant's conception of time

turn translated Bergson's *multiplicité* into German for *Zeit und Freiheit*) Riemann's term became translated by mathematicians into English as *manifold* and into French as *variété*, while 'multiplicity' has come to be used in a different sense in mathematics (relating to relations of multiples in number theory). Duffy follows Deleuze and takes multiplicity and manifold as equivalent, but no translations of nineteenth or twentieth century texts, such as those of Riemann, Helmholtz, Weyl, or Einstein use the term 'multiplicity' for 'manifold.' Duffy, *Deleuze and the History of Mathematics: In Defence of the 'New'*.

⁹¹ David Hyder, *The Mechanics of Meaning: Propositional Content and the Logical Space of Wittgenstein's "Tractatus"* (Berlin: Walter de Gruyter, 2002); Peter Pesic, "Helmholtz, Riemann, and the Sirens: Sound, Color, and the "Problem of Space",*" Physics in Perspective* 15, no. 3 (2013).

as a single dimensional manifold established a trajectory of thought about time that was significant for nineteenth century science and math.⁹² While it is true, as Bonds demonstrates in his history of spatial representation of musical form, that the use of spatial representation for time is historically conditioned, this historical context spans a large part of the eighteenth, nineteenth and twentieth centuries.⁹³ One reason for this breadth is that the dimensionality of time is inscribed in the interpretation of geometry and calculus that founds almost all discussions of physical processes after the eighteenth century, at least.⁹⁴ Although many specific elements of Newtonian physics and Kantian philosophy were being radically developed in the nineteenth century by mathematicians—Neo-Kantian and otherwise—they still represent a paradigm of thinking about time in a way Bergson would come to address.

For Kant, time is not a naively ‘objective’ dimension of reality. The manifold of time is an inescapable cognitive structure, a ‘form of intuition’, through which human reality is constructed. “Time,” Kant says, “is nothing but the form of inner sense, i.e., of the intuiting we

⁹²Ibid.

⁹³ Mark Evan Bonds, "The Spatial Representation of Musical Form," *The Journal of Musicology* 27, no. 3 (2010). In addition to the philosophical and mathematical developments of the conception of time, by the end of the eighteenth century, the dimensional conception of time finally became a common sense way of presenting information. Bonds refers to a number of thorough historical accounts. See for example, Daniel Grafton and Anthony Rosenberg, *Cartographies of Time* (New York: Princeton Architectural Press, 2010).

⁹⁴ Prior to Kant, Newton’s system of calculus also relied on a time-dimension distributed geometrically. In the English publication of his *Fluxions*, the commentator John Colson offered the following explanation of Newton’s approach to time in his calculus: “In settling the Laws of his calculus of Fluxions, [Newton]...judiciously disengages himself from all consideration of Time, as being a thing of too Physical or Metaphysical a nature to be admitted here... For tho’ all Motions, and Velocities of Motion, when they come to be compared or measured, may seem necessarily to include a notion of Time; yet Time, like all other quantities, may be represented by lines and Symbols... especially when we conceive them to increase uniformly. And these representatives or proxies of Time, which in some measure may be made the objects of Sense, will answer the present purpose as well as the thing itself. So that Time, in some sense, may be said to be eliminated and excluded out of the inquiry.” John Colson, Commentary in Isaac Newton, *The Method of Fluxions and Infinite Series* (London: Henry Woodfall, 1736), 239.

do of ourselves and our inner state.”⁹⁵ Although admitting that time is a form of subjective intuition, Kant’s model of that intuition is basically a one dimensional line: “We present time sequences by a line progressing *ad infinitum*, a line in which the manifold [Mannigfaltige] constitutes a series of only one dimension. And from the properties of that line we infer all the properties of time, except of the one difference that the parts of the line are simultaneous whereas the parts of time are always sequential.”⁹⁶ A one dimensional manifold of sequential parts also serves as the basis for the definition of time by science both before and after Kant.⁹⁷ This sense of time is a basic mode of subjective human perception, but since it forms the most fundamental level of sense experience, it is a fixed and universal structure of Kant’s version of human knowledge. This temporal structure of human reality, a mode of intuition, is a one-dimensional manifold. Even for those nineteenth century figures who did not accept Kant’s system outright, the provocative divergence between the intuition of space and time and the un-reachable ‘noumenal’ world became a useful framework for the way in which neo-Kantian scientific models of human knowledge construct reality. In Heinrich Hertz’s influential *Principles of Mechanics*, for example, he directly attributes his conception of time to Kant.⁹⁸ Hertz’s scientific insight into Kant’s models of space and time invited a more diverse and complex set of manifolds than Kant’s dual forms of intuition. Hertz proposed that “the manifold of the actual universe must be greater than the manifold of the universe which is directly revealed to us by our senses.”⁹⁹ Human knowledge must be distinguished from brute reality, which has no form of intuition, but it must also be freed from the simple manifolds of Kant’s epistemology. Constructing the most powerful temporal manifold was thus a task to be undertaken, rather than

⁹⁵ Immanuel Kant, *Critique of Pure Reason*, trans. Werner Pluhar (Indianapolis: Hackett Publishing, 1996 [1781]), 88.

⁹⁶ *Ibid.*

⁹⁷ Kant’s temporal intuition is the explicit reference for Hertz’s influential text on mechanics. Heinrich Hertz, *The Principles of Mechanics Presented in a New Form* (New York: Macmillan and Co., 1899).

⁹⁸ *Ibid.*, 45.

⁹⁹ *Ibid.*, 25.

a self-evident given. It is from this neo-Kantian context, that of Hertz, Helmholtz, Riemann and others, where the task of formalizing the nature of the temporal manifold, or multiplicity, is taken up.

Bernhardt Riemann's famous 1854 lecture, "On the Hypotheses That Lie at the Foundations of Geometry" extended this project by describing two sorts of geometrical manifolds.¹⁰⁰ The lecture takes the first steps towards a much more complex notion of geometry that would come to provide a starting point for many scientific advancements in the twentieth century. Although Riemann's mathematical innovations were somewhat revolutionary, it seems as though his general conception of manifolds actually begin with a formulation of the problem that is even older than the Kantian conception, that of Aristotle. Relying on the essentially Aristotelian dichotomy of number and measure I mentioned above, Riemann expands these concepts to describe manifolds based on the criteria of continuity or discontinuity. Like his classical predecessors, Riemann begins by distinguishing between the continuous and the discrete: "Concepts of magnitude are only possible where there is a more generic concept that admits of various modes of determination. Depending on whether these modes of determination take place in a continuous transition from one to another or not, they form a continuous or discrete manifold [Mannigfaltigkeit, *variété*]..."¹⁰¹ Riemann's contrast between continuous and discrete remains at the same conceptual level as the more traditional comparison between number and measure. Since at least Aristotle, this contrast has depended on the character of the boundaries between relevant areas. Riemann thus contrasts counting and measuring as modes of calculating each type of manifold. "Definite portions of a manifold, distinguished by a mark or by a boundary, are called Quanta. Their comparison with regard to quantity is accomplished in the case of discrete magnitudes by counting, in the case of continuous magnitudes by

¹⁰⁰ Bernhard Riemann, *Gesammelte Mathematische Werke Und Wissenschaftlicher Nachlass* (Leipzig: B.G. Teubner, 1876).

¹⁰¹ My translation amended from *ibid.*, 255-56; Peter Pesic, *Beyond Geometry: Classic Papers from Riemann to Einstein* (Mineola, N.Y.: Dover Publications, 2007); and also noting Riemann, *Sur Les Hypothèses Qui Servent De Fondement À La Géométrie: Mémoire Posthume*, trans. Guillaume Jules Hoüel (1867), 3-4.

measuring.”¹⁰² If Riemann’s formalization of this difference was a major development of mathematics, his general conceptual apparatus is simply Aristotelian. Compare, for example, Aristotle’s distinction between number and measure: “A quantum is a plurality if it is numberable, a magnitude if it is measurable. Plurality means that which is divisible potentially into non-continuous parts, ‘magnitude’ that which is divisible into continuous parts...”¹⁰³ Aristotle even allies the continuity of magnitude with time in a general response to Zeno’s paradox: “Because magnitude is continuous, then movement too must be continuous, and if the movement, then the time.”¹⁰⁴ Notably, Aristotle defines continuity based on the malleability of borders: “things are called continuous when the touching limits of each become one and the same and are, as the word implies, contained in each other...continuity belongs to things that naturally in virtue of their mutual contact form a unity.”¹⁰⁵ Riemann’s contribution was thus the formalization of continuity in such a way that manifolds could be treated formally, even when they became manifolds of more than one dimension, whether a ‘surface’ or some even higher, ‘n-dimensional’ manifold.

The contrast between discrete and continuous that was rigorously formalized by Riemann with respect to manifolds came to influence the twentieth century development of topology that was largely responsible for providing Einstein a mathematical model of relative space-time. In an influential set of lectures in 1911-1912, later published as *The Concept of a Riemann Surface*, Hermann Weyl expands Riemann’s concept of manifolds and his innovations of formalized calculus to a rigorous approach to topology. Weyl describes a topological surface (‘surface’ here denoting a ‘two-dimensional manifold’) that is continuously or infinitely differentiable as “smooth.”¹⁰⁶ In a more technical language, Weyl says that a topological surface made up of a

¹⁰² Ibid.

¹⁰³ *Metaphysics*, Book 5. Aristotle, *The Basic Works of Aristotle*, trans. W.D. Ross (New York: Random House, 1941), 766-67.

¹⁰⁴ Aristotle, *Physics* Book 4. *The Basic Works of Aristotle*, 291.

¹⁰⁵ Ibid., 307.

¹⁰⁶ Riemann does not use the term ‘smooth’ in his writings; Weyl seems to be the earliest and one of the most influential sources for discussing functions and surfaces as ‘smooth.’ Ibid.

“group of local differentiable maps” is smooth, and demonstrates that “every Riemann surface is a smooth oriented surface.”¹⁰⁷ The implications of Weyl’s work led into many complex innovations of mathematics in the twentieth century, not least of all models of Einstein’s theory of relativity. Even before Weyl and Einstein worked together at Princeton, Weyl was developing the mathematical model for relativity out of Riemann’s conception of manifolds that was more powerful than Minkowski’s ‘pseudo-Euclidean’ four-dimensional space-time in modeling the complexities that gravity introduced to astronomical calculations.¹⁰⁸ The concept of smoothness, while applicable to these complex surfaces, was also a very general characteristic of functions or manifolds that rested on the principles of integrals and differentials. These famous operations of calculus do not require an understanding of new developments in topology and other new fields of mathematics. The criterion of smoothness of a surface or a function now becomes a formalized concept of continuity that is infinitely differentiable. Even more relevant for understanding Boulez, however, was that the surface, whether a two-dimensional Euclidean plane or a more complicated sphere or torus, was now both a manifold that could be manipulated and also a surface on which a linear function could traverse. Both the space and the path through it could be modeled and related to each other.

It is undeniable that the mathematical rigor that Weyl and Riemann provided was able to advance the precision of understanding about the complexity of the space-time of the universe. However, the mathematical concept of “smoothness” rests on a more fundamental statement about continuity that grew from philosophical traditions concerned with time. Bergson’s response to the mathematical model of time was to return to the question of continuity, and clarify what sort of manifold, or multiplicity that time was—not simply what sort of manifold would most closely approximate time. In Bergson’s understanding of pure, qualitative time, “...states of consciousness ... permeate one another” and do not have the discrete quantifiability

¹⁰⁷Hermann Weyl, *The Concept of a Riemann Surface*, trans. Gerald R. Maclane (Reading, MA: Addison-Wesley, 1964), 36.

¹⁰⁸"Gravitation and Electricity," in *The Principal of Relativity* (New York: Dover, 1952 [1918]).

of objects juxtaposed in space.¹⁰⁹ Bergson frames this difference in terms of ‘multiplicité’, translated to English as multiplicity, and into German as ‘Mannigfaltigkeit,’ the same term Riemann had used.¹¹⁰ Bergson’s two multiplicities are characterized by the spatial and the temporal, and his task was to clarify their difference.

[T]here are two very different kinds of multiplicity. When we speak of material objects, refer to the possibility of seeing and touching them; we localize them in space....It is no longer the same case when we consider purely affective psychic states, or even images other than those built up by means of sight and touch. Here, the terms being no longer given in space, it seems, *a priori*, that we can hardly count them except by some process of symbolic representation.¹¹¹

Bergson’s correction of the mathematical conception of time began with the same classical distinction on which Riemann based his conception of manifold. Bergson argued further, though, that the significance of this distinction brought the meaning of time out of any mathematical model.¹¹² The particular nature of temporal continuity was not simply an opposition to discrete localized objects, but also to an account of temporal continuity that retains some character of durational movement.

Whether or not Bergson was addressing Riemann in particular (which is Deleuze’s conjecture) or simply the entire enterprise of dimensionality, it was Einstein’s theory of relativity and Minkowski’s mathematical models of space-time against which he made most of his explicit arguments. The tension between the temporality of duration and the dimensionality of space-time lived both within philosophical discourse and public narratives. The famous public debate between Bergson and Einstein in 1922 brought these tensions into focus. As Jimena Canales has shown, the Bergson-Einstein debate went well beyond the particular issue of time, and was as

¹⁰⁹ Henri Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness*, trans. F.L. Pogson (New York: Dover, 2001), 98.

¹¹⁰ *Zeit und Freiheit*. (Bremen: Verlag, 2012).

¹¹¹ *Time and Free Will*, 85-86

¹¹² It is also notable that Bergson’s second doctoral thesis—the latin thesis required by the Ecole Normale—was on Aristotle’s concept of place, a topic in which the questions of edges and continuity were of central importance.

much about basic methodological principles and even political solidarity.¹¹³ Not only does their divergence in method constitute one major background to the issue of time in post-war Europe, it exemplified the persistent tension between scientific and humanistic forces of thought in the twentieth century. For those optimistic about scientific method, a single four dimensional manifold to model all of reality held considerable appeal. Summing up the advancements in mathematical models of the universe early in the twentieth century, Minkowski famously claimed that “space by itself, and time by itself, are doomed to fade away into mere shadows, and only a kind of union of the two will preserve an independent reality.”¹¹⁴ But even with its more complicated level of dimensionality, Bergson argued that “Minkowski’s and Einstein’s space-time remains a *species* of which the ordinary spatialization of time in a four-dimensional space is the *genus*.”¹¹⁵ It is easy to argue Bergson’s argument further: even when Minkowski’s ‘pseudo-Euclidean’ four dimensional space was no longer sufficient for relativity, Weyl’s Riemannian, non-Euclidean spaces would still have not satisfied Bergson’s criteria. Moving through the twentieth century, Bergson’s ideas appealed to any perspective that felt that the mathematical model of time, whether a simple time line or a cosmological space-time continuum, lacked the actual property of time that was of primary importance: its vital, flowing character.

Historically, Bergson’s specific critique of Einstein and Minkowski is taken to be flawed, especially with respect to the so-called ‘twin’ paradox, in which the timeline of a relatively stationary observer diverges with the timeline of an observer who is traveling at speeds approaching that of light. The remarkable conclusion of Einstein’s theory has since been verified experimentally, and so the portion of Bergson’s critique of Einstein that relied on this puzzle is now put to rest. With such a powerful theory as relativity verified empirically and developed mathematically, it was inevitable that Bergson’s position would be dismissed by many who saw

¹¹³ Jimena Canales, *The Physicist & the Philosopher: Einstein, Bergson, and the Debate That Changed Our Understanding of Time* (Princeton: Princeton University Press, 2015); Canales, "Einstein, Bergson, and the Experiment That Failed: Intellectual Cooperation at the League of Nations," *Modern Language Notes* 120 (2005).

¹¹⁴ Minkowski, “Space and Time,” *The Principle of Relativity*, 75

¹¹⁵ Bergson, *Duration and Simultaneity*, 134

in it a direct opposition to science. However, Deleuze and others have revived Bergson's thought by pointing out that this, admittedly historically prominent point of Bergson's argument, was peripheral to a more central and persistent critique of the dimensionality of time, relative or otherwise.¹¹⁶ Bergson's more substantive critique of time was built upon the rejection of the empiricist identity of time with abstract dimensionality, in favor of a model of time illustrated by life and the flow of perception. The mistake of materialism and its empirical manifestations, according to Bergson, was the confusion between the ways that time and space are conceptualized. "For the living unity, we substitute the factitious unity of an empty diagram as lifeless as the parts which it holds together. Empiricism and dogmatism are, at bottom, agreed in starting from phenomena so reconstructed."¹¹⁷ Bergson's conception of time, parallel to the tradition of phenomenological thinking, offered something of a response to the dimensional formulation of time that was being developed by Einstein and others.¹¹⁸

Bergson's most relevant argument was not merely that the dimensionality of time was flawed simply because it confused the nature of the temporal manifold, nor that it unexpectedly allowed a proliferation of different time lines rather than the single unfolding of duration as the vital actualization of a univocal reality. His central challenge was that both numbers and spatialized abstraction shared the same problem: the permeability of boundaries within a field defined as a continuous multiplicity or manifold did not account for the perceptual unity of duration through time. Bergson's temporal continuity must somehow include movement through the manifold as a unifying act, what Boulez will come to call 'occupation.' Mere continuity could not fully capture temporality unless the method of thought was somehow able to capture, as he

¹¹⁶ Gilles Deleuze, *Bergsonism*, trans. Hugh Tomlinson and Barbara Habberjam, (New York: Zone Books, 1988). See also: Milic Capek, *Bergson and Modern Physics: A Reinterpretation and Re-evaluation* (Netherlands: Springer, 1971).

¹¹⁷ Henri Bergson, trans. Nancy Margaret Paul and William Scott Palmer, *Matter and Memory* (New York: Zone Books, 1988), 183.

¹¹⁸ Husserl's concern with time was equally situated in a broader methodological reaction to science, holding that the "fundamental theses of empiricism need a more precise analysis." Edmund Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*, ed. Rudolph Bernet, trans. F. Kersten, 7 vols., vol. 2, Edmund Husserl: Collected Works (Boston: Kluwer Academic Publishers, 1998), 38.

said, “the living unity” of duration. Bergson expressed this difference most clearly as that between the qualitative and the quantitative multiplicity. The critique of ‘quantification’ in Boulez and Stockhausen can be connected to this question of multiplicity, but it is important to clarify that mere quantity, the numbering of events, was problematic only insofar as it obscured the more essential temporal characteristic of music. For the interpenetration and permeability of the boundaries of continuity formed a unity, but this unity was that of human experience, of the synthesis of subjective listening. For Boulez, as I will show, smooth time must go beyond Weyl’s version. Boulez’s smooth musical time implies that the permeable boundaries between musical events do not create abstract borders within the perceptual manifold of time, that the traversal or occupation of smooth time is not as disjunctive or discontinuous as the musical events, viewed from abstraction, seem to be.

Boulez

Boulez’s lexicon of mathematic terminology that he employs in his lectures has a coherence that stems from the development of calculus in the nineteenth century. Boulez would likely have been introduced these ideas in his mathematical studies at Lyon. However, a remarkable amount of Boulez’s more obscure vocabulary in his 1960 Darmstadt lectures can be found in a single source of much more advanced mathematical studies, the seminars and publications of Nicolas Bourbaki from 1950-1960. Nicolas Bourbaki is a pseudonym under which an organization of mathematicians has been working since the 1930s to write a systematic treatment of mathematics.¹¹⁹ Nicolas Bourbaki—or more accurately, “the association of collaborators of Nicolas Bourbaki”—envisioned a large-scale project of presenting advanced mathematics in a systematic and pedagogical way. The first three volumes in their “Elements of Mathematics” were set theory, algebra, and topology, and both the series as a whole and the volumes themselves have continued to grow to the present day. The seminars have generally occurred three times a year and are collected into published volumes. If Boulez believed mathematics was “the science with the most developed methodology at the present time,” the

¹¹⁹ David Aubin, "The Withering Immortality of Nicolas Bourbaki: A Cultural Connector at the Confluence of Mathematics, Structuralism, and the Oulipo in France," *Science in Context* 10, no. 2 (1997).

prevalence of the Bourbaki project would be at least a probable exemplar of this science, if not a feasible source of Boulez's terminology.¹²⁰

As Campbell and others mention, the Bourbaki group was also seen, at least for a certain time, as a mathematical expression of Structuralism. Andre Weil, a central figure in the Bourbaki group, became interested in the work of Claude Lévi-Strauss and provided a mathematically formalized interpretation of one of Lévi-Strauss's studies of family relations.¹²¹ The influential psychologist Jean Piaget retrospectively ties the two together in his general understanding of structuralism.¹²² The extent to which they were actually allied is a matter of debate, as is the true extent of Boulez's own structuralist orientation.¹²³ While Boulez definitely laid claim to a structuralist influence in his lectures by quoting Lévi-Strauss, the question became difficult when Lévi-Strauss then strongly criticized Boulez's serialism on structuralist grounds. As Campbell has discussed, the ensuing discussion by Eco, Ruwet, and others took up Boulez's cause, or critiqued it, in different ways. Whatever the actual import of this relation, Boulez's quotation of Lévi-Strauss in his lectures shares a formalist style that parallels Weil's position.¹²⁴ In either case, the mathematical structuralism that was interested in discovering 'axiomatic' structures, displays strong resonances with Boulez.¹²⁵

Without any explicit reference, it is difficult to verify that Boulez was familiar with the work of this group. However, it would be surprising that Boulez did not feel some presence of

¹²⁰ Quoted above, *Orientations*, 98. Alain Badiou aligns Boulez and the Bourbaki group as two parallel exemplars of discursive "terror" that France felt in the 1950 and 1960s. Alain Badiou, *Logics of Worlds*.

¹²¹ Paul Lavoie, "Claude Lévi-Strauss et les Mathématiques."

¹²² Jean Piaget, *Structuralism* (1970).

¹²³ Campbell, *Boulez, Music and Philosophy*.

¹²⁴ Claude Lévi-Strauss, *The Raw and the Cooked*, trans. John Weightman and Doreen Weightman (Chicago: University of Chicago Press, 1990).

¹²⁵ The Bourbaki text on set theory begins with a discussion of 'the axiomatic method' which, though does not quote Rougier directly, describes precisely the same conception of systematic abstraction that Boulez deploys. Nicolas Bourbaki, *Éléments De Mathématique* (Paris: Hermann, 1951).

the Bourbaki collaborators. The mathematical concepts that Boulez used may have been general enough that he may have been introduced to them elsewhere, but the simple concentration of his vocabulary within their textbooks on set theory, algebra, and topology, and two published volumes of the Bourbaki seminars (1958-1960 and 1960-1961) provides, at the very least, a microcosm of a mathematical world Boulez was attempting to channel.

The following terminology I highlight suggests a two-tiered strategy in Boulez's rhetoric. First, there are references which seem to have very little expository usefulness for Boulez. These terms mostly stem from the study of topology, whose development in the Bourbaki texts is so technically advanced that its usefulness for understanding developments in musical thought are difficult to assess. Second, though, there are a number of related terms that form an analogy between music and calculus, defining the continuity of a musical passage by using Riemannian smoothness as a metaphor for musical smoothness. Calculus may still be relatively complex, but its wide application in various fields and its prevalent use in mathematics pedagogy make its central concepts somewhat more accessible. As such, the distinction between intellectual posturing and heuristic usefulness is difficult to pin down, even if it does seem to operate within Boulez's thought. Furthermore, characterizing this distinction would be as much an account of the intellectual climate at Darmstadt as it would the technical training of Boulez himself. As Boulez says, "these studies were written in Darmstadt for Darmstadt."¹²⁶ Having reached a broader audience, Boulez's references to math and science vary in obscurity and explanatory power.

Besides the specific scientists and mathematicians Boulez refers to in his introductory lecture, there are a number of scientific references that point to the composer's strategic efforts at touching on recent developments in mathematics. At one point in the lectures, for example, he claims that "...the real interest in distribution lies in the creation of "Brownian movements" within a mass, or volume of sound, so to speak..."¹²⁷ The intriguing issue of the musical application of the chaos of stochastic processes themselves was not new at the time (Iannis Xenakis, for example, much more explicitly connected his compositional technique to them

¹²⁶ Boulez, *On Music Today*. 6

¹²⁷ *Ibid.*, 67.

earlier in the 1950s). While Brownian movement was not a new topic, its mathematical modeling, and also its relation to Fourier analysis, was a topic in the Bourbaki seminars. In the mathematician Jean-Pierre Kahane's 1960 Bourbaki lecture, it is notable that 'Brownian movements' can be related to 'harmonic analysis' of Fourier transforms in the study of 'aleatoric' stochastic processes.¹²⁸ Whether or not any of the technical insights of Kahane on Fourier analysis, aleatorics, or Brownian movement might shed light on Boulez's music is unclear, but a single paper unifying all these topics illustrates the intellectual capital that Boulez's language was seeking.

There are moments in Boulez's lectures that are even more technical sounding but leave little in the way of explanatory power. One such passage relates to certain 'fibrous' situations of music form. "During performance the listener travels through the music following a kind of graining process [*fibrage*] – comparable to the 'grained space' [*espace fibrage*] of ensemble theory – noting as he passes the 'markers' provided by the criteria of form. He will therefore not be conscious of the form, and his 'angle of hearing' will be established only *a posteriori*, when the form has been completed."¹²⁹ "Grained space," more commonly translated as 'fibrous space,' is a term within the field of topology that the Bourbaki texts gave extensive exposition on.¹³⁰ 'Ensemble theory,' the *theorie des ensembles*, is more familiarly named 'set theory' in English, and was both the foundation and the content of the first volume of the Bourbaki textbook series. Boulez's connection between set theory and topology here is difficult to bridge outside of some influence of Bourbaki. Topology has no more or less reliance on set theory than any other field of mathematics, but the relation between the two is not so distant when viewed from the work of the Bourbaki group, whose first publications of *Elements de mathematique* begin with set theory and moves to topology in a systematic and tightly related development.¹³¹

¹²⁸ Kahane, Jean-Pierre, "Séries de Fourier aléatoires," Lecture No. 200, *Seminaire Bourbaki*, Vol. 5 (1960) p. 441-450.

¹²⁹ *Orientations*, 94.

¹³⁰ Bourbaki, *Topology*.

¹³¹ Bourbaki, *Topology*.

In still other cases, Boulez's references rely on fairly well-known fields or somewhat general topics, such as above with the concept of 'ensemble' or set. Boulez uses 'ensemble' freely as a description of any set of musical material, including the serial row, but also an 'ensemble of ensembles' and other formulations that are parallel with the advances of set theory into the mid-century. There are a number of similar terms that Boulez employs that can either be read as specific mathematical concepts or general terms that occur in many scientific fields. Another such fairly generic term Boulez employs, for example, is 'vector.' The notion that various musical elements interact with each other as 'forces' that mutually interact is not a new one, nor does it immediately call to mind the algebraic procedure of vector composition. Yet Boulez brings up this image to illustrate the interdependence of musical elements in a certain musical situation. "This interaction or interdependence does not function by a means of arithmetical addition, but as a vectorial compound [composition vectorielle], each vector having, from the nature of its material, its own structural properties."¹³² The term vector has a number of different meanings, but in this context, the 'vectorial composition' of different musical 'forces' combine in more subtle ways than merely additive listing of serialized parameters. Musically, the notion that each musical element is dependent on others is fairly clear in itself (and articulated by Boulez's compatriot Souris, as we saw previously). Adding an additional layer of convolution, Boulez's usage could even be read in line with the 'vector space' of the topological puzzles of the like the mathematician Jean-Louis Koszul discusses in his 1957 Bourbaki lecture, or that are developed in the Bourbaki textbooks on algebra and topology.¹³³ The description of especially complex topological spaces as 'fibrous' or having 'vectors' take on a particular meaning within the Bourbaki perspective on topology. The algebraic manipulation of vectors is also covered in the Bourbaki texts on algebra. Whether Boulez's uses of the terms like vector or fiber have any resemblance to topological themes would be a difficult technical comparison whose explanation could hardly assist in clarifying Boulez's thought.

¹³² Boulez, *On Music Today*, 36.

¹³³ Jean-Louis Koszul, "Fibrés vectoriels sur les courbes elliptiques" Lecture 154, *Séminaire Bourbak* vol. 4 (December, 1957), p. 245.

Like many other terms Boulez uses, phrases like ‘partially symmetrical manifest isomorphic figures’ is at once a general appeal to science and also a specific mathematical term that can be found in a number of essays of the Bourbaki seminars.¹³⁴ The ‘symmetry of isomorphisms’ is, again, part of a description of certain topological transformations in the Bourbaki topology textbook.¹³⁵ Here, too, the reference seems to have a general scientific value. For example, ‘isomorphism’ has a meaning within gestalt psychology, which comes into play with respect to the question of experience and time for Boulez as well. There are, then, a number of terms Boulez employs whose musical significance is obscured by the references to mathematics. This highly technical lexicon of mathematical terms may have significant explanatory power for those in Boulez’s audience who were well-versed in recent developments in mathematics, but few others would find them useful.

But, like Stockhausen’s lectures, hidden in the obscure reference are useful metaphors for Boulez’s efforts at innovative musical organization. Other technical references do, after all, call to mind relatively accessible concepts. One is the concept of integration, the foundational operation for the study of calculus. The analogy to calculus represents a second, and more persistent, layer of mathematical references that span Boulez’s lectures. It seems likely that Boulez’s calculus metaphor developed earlier than any engagement with Bourbaki mathematics, which does not use the term smooth in its textbooks, even perhaps relying in part on his mathematics training at Lyon.¹³⁶ In one of Boulez’s explanation of pitch space, he resorts to using the concept of integration to approach a musical continuum: “...to complete the picture, I must describe the *integration* of ... intervals. This method gives us, so to speak, sound ‘surfaces’ using either the true continuum by the aggregation of all the unitary intervals included within the given limits.”¹³⁷ Boulez’s step, from the ‘integration’ of intervals to sound ‘surfaces,’ could be

¹³⁴ Boulez, *On Music Today*, 76.

¹³⁵ *General Topology*, Chapter 3, 244.

¹³⁶ The term ‘lisse’ was not used in the Bourbaki seminars until Alain Guichardet’s December 1960 lecture on possible algebraic systems that were available in complex spaces, in which he used it without comment. Alain Guichardet, “Représentations des algèbres involutives” *Séminaire Bourbaki*, 6 (1960-1961), no. 207 : p. 8.

¹³⁷ Boulez, *On Music Today*, 44.

easily traced back to any introductory Calculus textbook. One of the simplest illustrations of the concept of integration comes from working through the idea of a ‘Riemann sum,’ where the space below a particular function can be approximated with increasing accuracy by decreasing the size of the rectangular unit, or, as Boulez says, “an aggregation of intervals within given limits.” One of Riemann’s major contributions to the formalization of calculus was to show that the ‘integration’ of the surface of the space below a curve can be described by a summative process by which the partition of the space by rectangular regions become smaller and smaller, approaching the infinitely small partition of pure continuity of the smooth function. This decreasing unit is termed ‘epsilon’, and the famous ‘epsilon-delta’ proof defines continuity as the value of epsilon becomes infinitely small. Boulez adds to this image of the epsilon, the ‘slice,’ *coupure*, proposing that this formalization of continuity not merely mathematically or physically defined, but also perceptually: “The finer the partition becomes, tending toward an epsilon of perception, the more it will tend toward true continuity, this being not only a physical, but also physiological limit.”¹³⁸ This conception of a limit, the ‘epsilon’ of perception uses the mathematical notion of continuity that forms a parallel explanation of the infinitely differentiable manifold that came to be called smooth. As Judith Grabiner clarifies, the Newtonian and Leibnizian notions of continuity were only later rigorously defined by the “epsilon-delta” definition by Augustin-Louis Cauchy in the early 19th century. Parallel to Riemann’s formalization of calculus, Cauchy’s rigorous method became a major influence on French mathematics pedagogy.¹³⁹ Whatever specific form of calculus Boulez was familiar with, it provided him the image of a decreasing unit, approaching the infinitely small, that provides the smoothness of a continuous musical time, and so Boulez says that “...smooth time will neither

¹³⁸ Ibid., 85. Translation slightly amended.

¹³⁹ R.E. Bradley and C.E. Sandifer, *Cauchy’s Cours d’Analyse: An Annotated Translation* (Springer New York, 2010), 21-23; Judith Grabiner, M. Anderson, V. Katz, and R. Wilson, *Who Gave You the Epsilon?: And Other Tales of Mathematical History* (Mathematical Association of America, 2009). Weyl also expands Cauchy’s notion of continuity onto the topological issues that he approaches in his lectures on Riemann.

have partition nor module.”¹⁴⁰ Yet Boulez emphasizes an element that is absent from the mathematical concept, namely that the topic at hand is that of perception.

If the calculus analogy can be taken here, the smoothness of a surface is defined by its differentiable continuity. It does not mean, however, that any function on the surface is equally smooth. In the context of music, it is precisely the most discontinuous musical passages that Boulez identifies as producing smooth time. In order to fully capture Boulez’s apparent paradox of calling highly discontinuous music ‘smooth’ it is necessary to conceptualize the surface the music implies so to speak, rather than the character of the music itself. Whether this process could actually be modeled mathematically is unclear, but it serves as a useful metaphor for Boulez to explain his idea of smoothness.

Boulez’s metaphor of a smooth surface does not rely on any particular content of Bourbaki, but on even older principles of mathematics that were established by nineteenth and early twentieth century mathematicians. Some of Boulez’s phrases are undecidably obscure: to what extent could the form of a musical work establish a model of ‘fibrous topological space’? Those terms that invoke the calculus metaphor, though, do form a consistent image of an interesting approach to musical organization within time. The Riemannian character of Boulez’s thought can be described by the relatively simple concept of the Riemann sum—simple, at least, in relation to the other technical advancements that Riemann contributed to mathematics.

The particularly useful aspect of Boulez’s metaphor is that the dimension of time is understood as a surface that is then occupied by musical events. Just like the pulse of a well-determined meter establishes a unit without slavishly repeating that unit in its rhythms, the amorphous musical patterns that emphasizes the smoothness of time is guaranteed by the anti-metric efforts which actively avoid the organization of the music into units. Boulez recognized that in order to truly accomplish a smooth musical time, it would be necessary to work against human perception itself, and the active role it plays in constructing patterns. In this line of thought, Boulez confronts another lineage of Bergsonian influence in the psychological world,

¹⁴⁰ Boulez, *On Music Today*, 93.

the principles of Gestalt psychology, which Campbell notes he based mainly on the work of Paul Guillaume.¹⁴¹

Boulez recognized the psychological factor that the listener's traversal through a smooth or striated surface will bring along with it a tendency to striate. It is not simply the socialized or scientific mind that applies striated spatial forms onto the immanent temporal flux. Part of Boulez's argument maintains that the active search for patterns by the mind persistently introduces striation as a constant gravitational force that music must avoid. One of Boulez's themes in his lectures is the attempt at overcoming "the ear's tendency to simplify," including, for example, the attention that certain intervals like the octave receive.¹⁴² His differentiation between a 'virtual' versus 'actual' octave—a Bergsonian phraseology, as Campbell points out—illustrates the effort to avoid the especially attractive quality of certain intervals. Boulez describes these forms as having *pregnanz*, the term from Gestalt psychology. Influenced in part by Bergson's thesis about the unity of perception, Gestalt psychologists like Wolfgang Köhler were interested in the active construction of reality by the mind. Finding patterns and grouping stimuli together in meaningful ways is not a matter of analytical breaking down of perception, but of accounting for its overall unity. To realize truly 'smooth' time, the *pregnanz* of an 'ensemble' (that is, "set" of musical events) must avoid coalescing into a directional gesture. *Pregnanz* is a psychological force that, left unchecked, will place striations where none were intended. In order to avoid the abstraction into counting or even reifying a particular gesture into a specific unit of musical significance, it is necessary to maintain the virtuality of the pulse. Boulez employs the concept to explain how virtuality and actuality within perception depend on the 'pregnance' of the 'ensemble': "...an object is generally virtual in a given structure when this structure has a lesser pregnancy than others in which the object also appears; the object is actual in the structures having the greatest pregnancy. If this concept is widened to include ensembles, the virtual or actual structures will be defined according to the pregnancy of the ensemble."¹⁴³ Although his point verges on becoming mired in technical jargon, Boulez is making a notable

¹⁴¹ Campbell, *Boulez, Music and Philosophy*, 23.

¹⁴² Boulez, *On Music Today*, 47.

¹⁴³ Boulez, *On Music Today*, 135.

claim about the dependence of the listener that his concept of actuality relies on. The ‘actualization’ of a certain structures, or to put it differently, the realization of significant musical patterns, depends on the act of listening as much as composition. An important aspect of the principle of Gestalt pattern recognition is that it is as much the psychological experience of a certain pattern as it is the inner logic of a pattern that imbues it with significance. The experience of smooth or striated time is a very particular instance of this general observation. Boulez observes that in certain conditions, a musical passage that is constructed with certain striated rules will sound as though it were smooth. When there is a collection of musical events that create a sense of stasis, avoiding directed motion in phrasing, or by introducing disjunctive pauses, for example, the striation is suspended, leaving a sense of smoothness. In a similar manner, a passage that was constructed as ‘smooth’ with respect to meter or phrasing may gain a sort of metric striation if there is directed motion akin to an anacrusis-downbeat or some hint of metric regularity: “...a static distribution in striated time will tend to give the impression of smooth time, whereas a differentiated and *directed* distribution in smooth time, especially when based on adjacent values, may easily be confused with the usual results of striated time.”¹⁴⁴ Boulez recognized that there is a major difficulty that emerges in the performance and listening experience: there is a strong tendency for listeners to organize music into patterns, even patterns were not intended to be heard. A collection of musical events that suggest a directed gesture will suggest a striation of pulse, or perhaps even of some sort of cadential movement.¹⁴⁵ Boulez takes the challenge of purifying smooth time to the extreme. Even in a context where the performer uses chronometric notation, where notes are distributed along a timeline marked off with fractions of seconds, Boulez claims that the performer will reintroduce the striation of the second. “The performer, instead of producing smooth time, will automatically return to striated time, where the unit of reference will be the second—he will fall back on the metronomic unit

¹⁴⁴ Ibid., 94.

¹⁴⁵ Boulez’s observation here anticipates Hasty’s concept of meter as originating out of the duration of a musical process. Hasty discusses this concept within his analysis of *Le marteau sans maître*. Even a directed distribution of events implies what Hasty would come to call a continuation, thereby setting up metric relations between the beginning and conclusion of a gesture. Christopher Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1997), 286.

equal to 60.”¹⁴⁶ Here, though, Boulez is overstating his critique of quantification. If his suggestion is that notating music dictated by a timeline with minutes and seconds, like some of Stockhausen’s and John Cage’s works, introduced the striation of the second into the music, then it still does not follow that this striation will be experienced by anyone. The audible subdivision of time-units would provide no more or less ‘chronometric’ sense of the music than any traditional metric notation. Perhaps this excessively naïve thesis about the danger of numerical units stems from a Bergsonian distrust with the counting of time. In any real musical context, it would require a patently mistaken performance to introduce feelings of pulse that had any relation to the clock time used in the notation. More significantly, if smoothness is understood through concepts of Gestalt principles as an auditory phenomenon, then it requires the active avoidance of musical units, and not merely abstract schematics, to accomplish or upset. The actualization of Boulez’s concept of time occurs in the listening experience. If Boulez problematically argues that “[t]rue smooth time is that over which the performer has no control,” he also seems to recognize that the composer himself only has partial control.¹⁴⁷

Boulez attempts to retain the ultimately dimensional character of time that he gained from his mathematical sources. The truly smooth space-time that was built upon Riemann’s work was precisely the dimensionality that allowed Boulez to formulate his escape of temporal partition, seemingly at the cost of the qualitative flow of human experience. However, this conclusion is not allowed for Boulez. Ultimately, his discussions concern the experience of music, realized in performance (notably his emphasis on the “phenomenology” of the matter.¹⁴⁸) In this context, the ‘time’ in question is how the music experience reinforces various perceptions of time passing, whether by recognizable sequential units or by background continuity that is populated by events that avoid perceptual organization. The dimensionality of smooth time is superseded by the experience of smoothness.

Boulez contributes another interesting perspective: that this movement from dimensionality to experience is reciprocal. For Bergson, the dimensional model of time failed

¹⁴⁶ Boulez, *On Music Today*, 94.

¹⁴⁷ *Ibid.*, 94

¹⁴⁸ *Ibid.*, 55

because it incompletely provided the understanding of the unity of temporal flow. A tonal melody illustrates this flow in its larger unity, but the unity that was given by an abstract spatialized version of the melody subtracted precisely its temporal character. The continuity of time was doubled by the continuity of music. Entering into the musical world of Boulez, however, offers a new form of experience akin to grasping the abstract dimensionality of time within the flow of music. In this context, though the flow of time is inescapable, a smooth musical passage does not reinscribe that temporal flow, but sets the dimensionality of time into relief instead.

Improvisations sur Mallarmé II—‘Une dentelle s’abolit’

‘Une dentelle s’abolit’ is a useful piece to examine in the light of these questions of smooth time because of the way it can help to differentiate between different stages of Boulez’s thought. This piece stands at an intersection of Boulez’s most persistent concerns through the 1950s and 60s. It is one of Boulez’s forays into indeterminacy, as well as being an example of the inspiration of Mallarmé on Boulez and the problem of musical setting of his poetry. It was written in 1957 for soprano and a chamber ensemble consisting of harp, vibraphone, piano, celeste, and four percussionists in charge of a variety of non-pitched auxiliary instruments. As Miller and McCalla have argued in their analyses of *Pli Selon Pli*, the multi-movement work that would later come to include ‘Une dentelle s’abolit,’ these songs represent a significant effort on the part of Boulez to rethink music-text relationships, including the influence of the poem on the form of a musical setting.¹⁴⁹ In addition to the issue of form, much of the scholarship about Mallarmé’s influence on Boulez is captivated by the idea of chance, and how Mallarmé’s formal innovations opened up certain possibilities for Boulez in the realm of music. This line of thought is of course historically significant in the light of the question of chance and indeterminacy in the post-war era. However, the somewhat subdued use of indeterminate notation in this setting of Mallarmé suggests a different focus: that in this case, indeterminacy was a means to an end, a way of encouraging the singer and conductor to realize certain smooth musical passages.

¹⁴⁹ Roger Miller, "Pli Selon Pli: Pierre Boulez and the 'New Lyricism'," (1978); James McCalla, "Sea-Changes: Boulez's Improvisations Sur Mallarmé," *The Journal of Musicology* 6, no. 1 (1988).

‘Une dentelle s’abolit’ was the second of three ‘improvisations’ on Mallarmé, but for Boulez, improvisation is merely a subtraction of specific indications, “the forcible insertion of a free dimension into the music.”¹⁵⁰ In essence, Boulez’s concept of improvisation is the consequence of local compositional indeterminacy. In comparison to his other efforts at indeterminacy, Boulez admits that the ‘improvisational’ character of ‘*Une dentelle s’abolit*’ is somewhat conservative.¹⁵¹ It is limited, in fact, to only a few particular modes of performative flexibility: the extensive use of smaller, ornamental notation for the singer, flexible indications like *fermati*, and tempo markings like *senza tempo* and *cédez*. Leaving rhythmic or metric relations indeterminate by means of these indications does not necessarily erase rhythm, since, as Boulez described with a simpler example in his lectures, musicians would be able to reinscribe their performance within an implicit chronometric ‘striation.’ These moments of indeterminacy, then, vary in their proclivity to fall back into a striated metric context. It is more accurate to approach these performance freedoms as different factors distinguishing between smooth and striated (and do not, as a surface analysis might suggest, a contrast between smooth and striated itself).

It is also important to note the particular nature of Mallarmé’s influence on Boulez’s ideas in this instance. Unlike Mallarmé’s more famous *Une coupe de dés*, *Une dentelle s’abolit* is a fairly strict sonnet, which Boulez reads according to a clear contrast between two images that he sees within the poem, the lace (*dentelle*) of a curtain in the breeze, and the crystalline glass of the window pane (*vitre*). The form of the song as a whole could not be described as ‘smooth,’ but proceeds as equally strictly as the poem: instrumental ‘ritornelli’ as they could be called, mark off each stanza and notable textual breaks. Figure 3.1 illustrates the division between sections and the stylistic contrast between two types of vocal writing as a function of the text. These two types of writing, described by Boulez as the A, ornamental type of singing, and a more ‘crystalline’ B type, do not correlate with smooth and striated, but provide two different sets of techniques that fall into smooth and striated moments at various times in various ways.

¹⁵⁰ Boulez, “Constructing an Improvisation,” *Orientations*, 155.

¹⁵¹ *Ibid.*, 156

The contrast between the A type and B type vocal style stems from Boulez's own explanation of the piece. In a 1961 lecture (at Strasburg, not Darmstadt), Boulez summarizes his compositional ideas for 'Une dentelle s'abolit.' "The whole piece is built on two contrasting structures, which we will call A and B. A is ornamental, and here the melody consists chiefly of melismas and ornaments..."; while the B structure consists of syllabic declamation, mostly with the indication *senza tempo* and marked by fermati.¹⁵² Boulez clarifies an aspect of this in a later interview for the British journal *Tempo*: "The ... the lace implies all kinds of decorative line, and on the other side, the glass implies a kind of crystalline sonority. But once you have said that you haven't said very much really."¹⁵³

This overall binary is often 'folded' in on itself and developed a variety of different ways, with Boulez finding methods of complicating the initial simplicity of the contrast. The overall formal distinctions, however, are very clear. The instrumental sections are always striated with specific tempo and meter, so the A and B styles only describe contrasting manners of text setting for the soprano. My analysis below articulates the tension within each style that shifts the sense of time towards smooth or striated. These two methods of text setting are certainly not the only means by which Boulez attempted to realize smooth time throughout his corpus. They do, though, illustrate that there are different ways of giving sense, or making sensible, smooth time, and represents the trajectory of thought that he expressed in his lectures. The A (ornamental) and B (crystalline) 'structures' or styles of text setting each have their own smooth and striated modalities. For the A style, Boulez indicates the performative freedom with the traditional indication for ornaments in small note heads. The B style gives each syllable of the text a fermata. The purely instrumental passages are always explicitly marked with tempi, and very clear in the meter and the phrasing, maintaining a consistent metric and phrase 'striation.' As I said before, the contrast between ornamental and crystalline does not correspond to smooth and striated directly, but each style illustrates a different set of factors that lead to experiencing smooth or striated time. That is, within the A type of vocal writing, there are contrasting

¹⁵² *Orientations*, 169-170

¹⁵³ Erling E. Guldbrandsen, "Pierre Boulez in Interview (1996). III: Mallarmé, Musical Form and Articulation," *Tempo: A Quarterly Review of Modern Music* 65, no. 257 (2011): 16.

Measure	<i>Lent, flexible</i> <i>cedez presser tres peu. . . revenir</i>	A
11	Une dent-elle s'abolit <i>presser tres peu---cedez cedez</i>	
16	Dans le dou-----te du Jeu suprême <i>presser tres peu. . . revenir cedez cedez</i>	
22	A n'entrouvrir comme un blasphème <i>presser cedez presser revenir</i>	
27	Qu'absence éternelle de lit.	
32	<i>Assez Vif--Vif----Large, très calm----Assez Vif—Vif</i> [Instrumental] -----	Rit.
45	<i>Senza tempo - Andante</i> ^ ^ ^ ^ ^ ^ ^ ^ Cet un-an-i-me blanc con-flit [Instrumental] <i>Senza tempo - Andante</i> ^ ^ ^ ^ ^ ^ ^ ^	B→
55	D'une guirlande avec la même, [Instrumental] ^ ^ ^ ^ ^ ^ ^ ^	
65	Enfui contre la vitre <i>Senza tempo</i>	
68	{blême / Flotte} ^	A
69	<i>Andante Senza tempo Andante Senza tempo Andante Senza tempo Andante</i> plus qu'il n'en-----se-----ve-----lit.	A/B
81	<i>Vif-Assez Vif</i> [Instrumental]	Rit.
84	<i>Lent, flexible</i> <i>(Un peu cédé) (un peu pressé --- revenez) (cedéz)</i> Mais chez qui du rêve se do-----re	A→
89	<i>Calme Très calme Vif-Assez Vif</i> Tristement dort une mandore [Instrumental] <i>Senza tempo ad libitum</i> ^ ^ ^ ^ ^ ^ ^ ^	B
106	<i>Modéré – Assez Vif</i> [Instrumental]	Rit.
113	<i>Lent, flexible</i> Telle que vers quelque fenêtre <i>Senza tempo Adagio Senza tempo Piu Adagio</i>	A
120	Selon nul ventre que le sien, <i>Lent, retenu</i>	
131	Filial on aurait pu naître.	
134-139 <i>fin.</i>	<i>Modere Assez Vif</i> [Instrumental]	Rit.

Table 3.1: Formal-Textual Layout of *Une dentelle s'abolit*

moments of smooth and striated material, and likewise within the B type. Thus four contrasting examples can illustrate how different compositional efforts can result in similar evocations of smooth and striated time. Four examples below—striated and smooth A sections, and likewise striated and smooth B sections—capture many of the concerns that Boulez brings up in his lectures about the realization of smooth time. The task, as Boulez seems to recognize in this piece, involves the active avoidance of any inadvertent slippage by the performers or listeners into a striated experience of time. The performative freedoms that the composer allowed, however, are both given and circumscribed to directly facilitate the change between smooth and striated.

The ‘ornamental’ A passages are usually given the initial tempo *Lent, flexible*, then with continual indications on how to fluctuate the tempo for the rest of the phrase. There are clear time signatures, and the syllabic pattern of the text is set with a variety of different note values (in contrast to the B section, in which each syllable is simple given a whole note). Upsetting this illusory regularity, many syllables begin or end with extended melismas notated in small note values, indicating *ad libitum* ornamental singing. Within the ornaments themselves, there are also different note values, and so there is only a limited freedom of duration and flexibility of performance. Limitations to the ornamental melismas come from within the music: the requirements of the conductor and instrumental ensemble to achieve notated simultaneities, the strictly notated dynamic contour, or even the frequent specific instructions the composer gives in the score. In many cases, there are few options for freedom because the notated rhythms which provide scaffolding for the ornaments (and align with the instrumental ensemble) provide only small windows of time for the melismas to occur.

The ornament, however, is defined by its departure from the metric subdivision that orders the simple precision of the notated rhythm. Their relative concentration and their relation to the ensemble determine much of their power to disrupt metric continuation. If the durational values of the ornamental notes have no distinct subdivision, then they imply an anti-metric continuity that rests underneath the melodic line. Boulez recognized that indeterminacy with regard to subdivision was not sufficient; metric smoothness must also guarantee the avoidance of directed movement in the melodic construction. A total escape of directed movement in the soprano must also arise out of the content and voicing of the serial pitch collections. In figure

3.2, the opening passage of the soprano at measure 12 illustrates how decisions about pitch, meter, and rhythm work together to avoid directed gestures.

Without going into detail about the instrumental ensemble and overall pitch organization of the piece, it is useful to note one local process that occurs in the soprano's opening phrase at measure 12.¹⁵⁴ After the text, *Une*, ascends an interval 6, the phrase is constructed around three sustained anchor notes with ornamental collections surrounding them. These three gestures contain very similar pitch class material, in a sort of 'expanding' pitch class set:

den- [0,1,5,8]
telle [0,1,4,6,8]
s'abolit [0,1,2,5,6,8]

While the unordered pitch content follows a fairly simple transformation, the clarity of the inner logic is obscured by extremely wide voicing, melodic contours whose large intervals upset their relationship. As such, there is very little, if any, suggestion that the phrase as a whole is directed toward the completion of the poetic line, or of some compositional process. The metric emphasis on the downbeats of measures 14 and 15 are disconnected from each of the preceding beats, first by the breath in measure 13, then by the large descending leap in *-telle*. The *cédez* ornamentation at the end of *dentelle* and the agogic accent of the E-flat of *-bo-* only serve to prepare the surprise of the sustained notes. With these combined forces, the first line of the text implies a smooth temporal surface underneath its disjunctive lyricism, a melodic

The image shows a musical score for voice, measures 12-15. The score is written on a single staff with a treble clef and a key signature of one flat (B-flat). The lyrics are: "U - ne den - - - - - tel - - - - - le s'a - - - - - bo - - - - - lit". Above the staff, there are metric markings: a 3/4 time signature above measure 12, a 2/4 time signature above measure 13, a 3/4 time signature above measure 14, and a 2/4 time signature above measure 15. A circled number 13 is placed above measure 13. There are also performance instructions: "(cédez - - -)" above measure 13 and "(presser très peu - - - - revenir)" above measure 14. Below the staff, there are three boxes containing pitch class sets: [0,1,5,8] under measure 12, [0,1,4,6,8] under measure 13, and [0,1,2,5,6,8] under measure 14. The word "Voix" is written to the left of the staff.

Example 3.1: Measures 12-15, *Une dentelle s'abolit*

¹⁵⁴ Miller's analysis describes the loosely serial procedure for the production of the material, and notes what Boulez would later explain as a free use of that material in composition. Miller, "Pli Selon Pli: Pierre Boulez and the 'New Lyricism'."

construction that is not beholden to the directed movement implied by the meter or the pitch content.

The ornamental A type of singing also has the potential to slide into a striated context. Within two significant ornamental A passages, the tempo and rhythm solidify into fairly clear, temporally stable, ‘striated’ phrases. In measure 89-91, the tempo indication is *Calme*, then *trés Calme*, and the text, *tristement dort, une mendore*, contains no ornamentation and is precisely notated. Another clear illustration is found in measures 131-133, the poem’s final lines—*filial on aurait pu naître*. This passage exemplifies striation of the ornamental style both in its relative metric regularity and with the melodic construction of the vocal line. Along with the tempo indication *Lent, retenu*, the soprano is given a clear but terse instruction above the text: “La flexibilité dans les petites notes—non dans le tempo.” This indication also reinforces the shift in the amount of ornamentation. Unlike measure 12, measure 131 is constructed with a more active triplet rhythm that is reinforced by the harp, preventing the two isolated ornamental notes in the soprano from upsetting the strict tempo. This emphasis on the forward moving tempo is also reflected in the relatively sparse use of ornamental notes—only eight in the passage in Figure 3, predominantly in line with the natural respiration in the middle of the phrase, opposed to the thirteen of the passage in Figure 2, which were distributed throughout the phrase. The one large ornamental gesture that sets the words *au-raït pu* follow a simple descending pattern that is shaped with a decrescendo. The strict musical tempo also allows for a relatively natural declamation for all the vowels, which, as throughout the song, follow Boulez’s close attention to the implicit stresses of the French. The final word, *naître*, is set in strict rhythm reinforcing the word’s metric pattern, and, with a sense of phrase unity, repeats the descending E_b-C that began the line of text. The anchoring pitches sit within an octave of each other, with only three of the ornamental gestures move outside this range. The instrumental ensemble enters on the final beat of measure 133 with a very soft simultaneity, completing the closure of the text and phrase.

In the ‘crystalline’ B style of text setting, there are a number of complimentary indications that allow the performer to construct a smooth passage by removing notated suggestions of a striated order. These indications are different than the compositional devices used in the A style. Measure 45 is the first instance of this B style, and illustrates how these indications work to suggest smoothness.

Measure 45, in Figure 3.4, illustrates many of the challenges Boulez posed for himself to manifest smooth time. The indication *Senza tempo*, which marks off all of the B passages, is not in itself sufficient to accomplish the goal of truly smooth time. In tension with the tempo marking, the time signature is given as 8/1, each syllable is given the same duration, and the singer is to perform the passage as slow as possible, but in a single breath. As with many ostensibly improvisatory styles, this feat requires advanced planning, and thus some sort of proportionality or measurement of how long each syllable can be sustained. The octosyllabic line from the sonnet also implies a certain metric relation among the notes, and Boulez chooses to use the same fermata style for each pause, unlike other passages in the piece that employ different shapes of fermati. Finally, there is a strong crescendo from the initial pianissimo to the final fortissimo that reinforces the ascending gesture of the line as a whole. All these forces work together to suggest a context of measured, directed movement, and Boulez is obliged to indicate in a note below the staff that on no account should the whole notes have equal duration (“...les rondes ne doivent surtout pas avoir une durée égale”). The challenge of a truly *Senza tempo* passage is here handed over to the singer under the name of improvisation, which, as mentioned above, is simply the subtraction of determinate performance indications. A few performance considerations thus come into play here. Given the almost exponential growth in the crescendo, with the last increase labeled ‘molto,’ preserving enough air for the final fortissimo note would probably demand that earlier notes receive much less than the default 1/8th of the singer’s breath. In the approach to the single word ‘unanime,’ the performative challenge in creating a smooth moment is foremost an avoidance of durational equality. At the same time, the durations must avoid approximating a proportion that could be gathered together in a metric way. The similar consonant sounds of *n* and *m* also tend toward a feeling of repetitive articulation, which would make the approach to the attack and release of each note decisive as well.

The instructions to the singer, though, are purely negative: do not create any sense of equality. The accomplishment of smoothness is thus handed over to the singer in many ways. If she can avoid introducing any sort of regularity into the phrase, then the experience of this passage escapes the implied periodicity that leads to an expectation of continuation. If the singer can avoid expectation and anticipation, any recognition of some pattern, then each syllable comes as a surprise. Discontinuity among notes thus becomes the mark of smoothness. The result

of this sort of passage is not that the music itself sounds ‘smooth,’ since there will be unexpected, disjunctive transitions among each musical event. At this point the music has broken the illusion that time has been characterized by it. Now the listener must find a different, prior surface that can accommodate the unpredictable duration and contour of the phrase. Smooth time is not manifested within the music here; rather, listening has become reflexive to the transparency of time. The music forces experience out of the search for order into smooth time.

There are moments when the sustained quality of the B type of singing fails to escape a directed gesture, simply because the forces within the music imply a continuation too strongly. As with the passage in Figure 3.3, the forces of striation outnumber the tendency toward smoothness. In measure 68, shown in Figure 3.4, a striated phrasing is even more difficult to escape. Here, a single sustained whole note with an ornamental final syllable, *blême*, takes the entire breath. This note gradually fades into the last, brief ornamental syllable, an exaggeration of the natural declamation. Rather than attempt to upset this organic directionality, the degradation of the piano harmonics and the extremely brief left hand attack reinforces the word’s implied metric accent. Here the attempt at smoothness collapses and finds the metric striation in the directed degradation of the note. As I mentioned above, the long pause that precedes this passage, characterized by the square fermata, contrasts with the rounded fermata that characterizes the B type vocal settings. However, with only two fermati, this single word is still performed with an entire breath, suggesting the coherence of the single, two syllable phrase. This final example also presents the possibility that the smooth and striated are not entirely dependent on the composition and the performance, but also relies on the listener. If Boulez’s criteria for smooth and striated were cast in terms of his criteria of the ‘occupation’ of these respective time-surfaces then it is ultimately the listener who occupies the temporal surface as much as the performer. Whether the listener is thrown into a smooth or a striated time-character is in part determined by the predisposition of that listener.

Conclusion

By attempting to construct music without partition, Boulez brought dimensionality into experience. Boulez names this smooth time. By avoiding metric or rhythmic patterns from musical passages, and disrupting melodic contour and direction, Boulez had still not subtracted

the flow of experiential time itself. If we occupy smooth time without counting, it is still a matter of traversal or movement over a smooth surface. The rhetorical strategy that led him to use obscure vocabulary gains its effectiveness from an intellectual background in which the mathematical model of time lives in tension with the flow of duration. This context took as much from the realm of science and math as it did from the philosophical, especially Bergsonian, critique of mere dimensionality that I pursued in the previous chapter.

Like his compatriots, Boulez was concerned with musical experience when he discussed ‘time.’ As such, a concept of time modeled as a simple linear manifold was incomplete, because the way in which this time becomes populated shapes the surface through which perception flows. In a way, Boulez’s smooth manifold provides a fitting musical response to Kant’s restriction against experiencing the manifold of time, which had initiated many elements of this historical development. “For as regards time” Kant says, “which after all is not an object of outer intuition at all, we cannot present it to ourselves...,” except, Kant admits, “under the image of a line insofar as we draw that line; without exhibiting time in this way, we could not cognize the singleness of its dimension.”¹⁵⁵ Moving beyond the mathematical models that shaped his conception of the temporal surface, it was, as Boulez said, the occupation of this surface that music supplies in certain conditions. It is not so much the view from some position in time, but of the traversal over that surface which most clearly gives us a presentation of it. Time becomes heard, not drawn. In the end, the fidelity to Bergson is kept: one occupies smooth time by hearing, and not necessarily visualizing.

¹⁵⁵ Kant, *Critique of Pure Reason*, 194.

Senza tempo

Harpe

Piano

Cel.

Mar.

Cymb. susp.

Voix

8 (45) 1 3 2

ppp (poser le Maracas et prendre une deuxième baguette de timbale)

pp

Aussi lent que possible sans respirer
cres - - cen - - do

pp Cet u - - na - - ni - - me blanc con - - flit

* Chaque fois ce signe indique que la chanteuse doit énoncer la phrase en un seul souffle.
Le tempo dépendra donc de la durée de ce souffle, suivant le nombre de notes et suivant la dynamique.
Les instruments suivent le chef, qui dirigera par signes, uniquement.
(L'indication de mesure n'est mise que pour mémoire; les rondes ne doivent surtout pas avoir une durée égale.)

** Pour l'explication voir page suivante.

Figure 3.3: Boulez, 'Une dentelle s'abolit,' Measure 45

staccatissimo
 Harpe Sol^b *grêle*
 Cloches (Crotales)
 Piano *avec l'avant-bras, immédiatement après que le son direct a disparu, sur les harmoniques*
 Cel. *très p*
 67
 1 4 4 1
 1 Crotales aigues *avec la Harpe*
 2 Mar.
 3 Cymb. susp.
 4 Crot. graves
aussi long que possible
Assez court; le temps d'une pleine respiration
 bis - - - me
 (simile)

Figure 3.4: Boulez, 'Une dentelle s'abolit,' Measure 67

Chapter 4: Adorno's Philosophy of Time and Karel Goeyvaerts's *Sonata for Two Pianos*

In the now legendary Darmstadt composition course of the summer of 1951, Karel Goeyvaerts and Karlheinz Stockhausen performed the second movement of Goeyvaerts's *Sonata for Two Pianos*. Theodor Adorno, who was leading that particular seminar, offered a famously negative reaction to the piece, and an equally critical response to the analytical discussion that followed. Composed as a nominally four-movement sonata, Goeyvaerts's work was one of the first to employ 'integral' or 'total' serialism, and his deployment of this compositional practice resulted in what both the composer and critics at Darmstadt described as 'static' music, also later described as 'punctual' or 'point' music.¹⁵⁶ This performance became a flashpoint for a larger debate about serialism that spanned the next decade of Adorno's participation at Darmstadt. At the center of the philosopher's critique of the static character of Goeyvaerts music and integral serialism in general was his arguments about the nature of time in music.¹⁵⁷ Unlike other composers I discuss in this dissertation, the interaction between the music of Goeyvaerts and the philosophy of Adorno was not one of productive engagement. Instead, I will demonstrate that there were a number of illuminating elements in Adorno's approach to serialism, as well as philosophically useful qualities to Goeyvaerts's work, but that these points were lost in a mutual failure to interpret Goeyvaerts's music within mutual conceptions of 'stasis' in the post-war era.

¹⁵⁶ Karel Goeyvaerts, "Paris: Darmstadt 1947-1956. Excerpt from the Autobiographical Portrait," *Revue Belge de Musicologie* 48 (1994): 45; Martin Iddon, *New Music at Darmstadt: Nono, Stockhausen, Cage, and Boulez* (New York: Cambridge University Press, 2013), 85. "Pointillistic" music also is a common term, but Pointillism in post-impressionist painting was concerned with creating familiar scenes from small colored spots, not, in the case of 'punctual' music, a disconnected array of pitches. Jankélévitch, by contrast, relates Debussy's music to 'pointillism.' Vladimir Jankélévitch, *Debussy et le mystère de l'instant* (Paris: Plon, 1949).

¹⁵⁷ Iddon, *New Music at Darmstadt*; Herman Sabbe, "Goeyvaerts and the Beginnings of 'Punctual' Serialism and Electronic Music," *Collected Work: Revue Belge de Musicologie*. 48 (1994); Gianmario Borio, "Die Positionen Adornos Zur Musikalischen Avantgarde Zwischen 1954 Und 1966," in *Adorno in Seinen Musikalischen Schriften*, ed. Brunhilde Sonntag (Bamberg: Gustav Bosse Verlag, 1987); Borio, "Dire Cela, Sans Savoir Quoi: The Question of Meaning in Adorno and the Musical Avant-Garde," in *Apparitions: New Perspectives on Adorno and Twentieth Century Music*, ed. Berthold Hoeckner (New York: Routledge, 2006).

The issue of stasis and time stood at the center of these contentions, and these philosophical issues explain in part the lack of agreement about the nature of music analysis and its role at Darmstadt.

In his influential book *Philosophy of New Music*, published two years prior to his meeting with Goeyvaerts, Adorno had situated the static character of serialism into his larger philosophical narrative about history, subjectivity, time, and music. What Adorno meant by ‘musical’ or ‘subjective’ time, and why he thought it had normative meaning for composers like Goeyvaerts who were no longer concerned with subjectivity, rests on how his philosophy of time informed his critical response to the Darmstadt school’s own discursive biases. Specifically, these biases—toward compositional technique—marginalized the question of musical experience. The contention between Adorno and Goeyvaerts exemplifies how Adorno’s philosophy of time supplies an account of musical experience for Darmstadt, but one that was not well received for a variety of reasons. Approaching Goeyvaerts’s *Sonata* from a perspective informed by Adorno’s philosophy of time clarifies the complicated relationship between Adorno and the concerns of the composers he engaged with at Darmstadt.

Adorno’s *Philosophy of New Music* is often read as an oppositional comparison between two influential composers of the first half of the twentieth century, Arnold Schoenberg and Igor Stravinsky. Daniel Chua critiques this naïve perspective, noting how Adorno’s reception at Darmstadt relied in part on this over-simplified reception of the philosopher’s arguments ‘for’ serialism and ‘against’ neo-classicism. The role that the question of ‘static’ music plays in Chua’s argument is instructive of the subtle nature of Adorno’s philosophy of time. Demonstrating the oppositional rhetorical surface of *Philosophy of New Music*, Chua lays out a table of these oppositions that he finds crude, yet “not inherently untrue.”¹⁵⁸ This table includes a contrast between Schoenberg’s ‘dynamic’ character and Stravinsky’s ‘static’ character. With respect to this opposition, Chua’s argument should be much stronger: the idea that Schoenberg retains a sort of temporality while Stravinsky is the one who falls into the static *is* ‘inherently untrue’ for Adorno. In 12-tone technique, “the music becomes a result of the process to which the material is subjected and which the music itself keeps from being unveiled. Accordingly, the music becomes

¹⁵⁸ Daniel Chua, "Drifting: The Dialectics of Adorno's *Philosophy of New Music*," in *Apparitions: New Perspectives on Adorno and Twentieth-Century Music*, ed. Berthold Hoeckner (New York: Routledge, 2006), 3-4.

static.”¹⁵⁹ Indeed, with respect to Adorno’s most general thesis about musical time in the twentieth century, “[l]ate Schoenberg shares with jazz—and incidentally, also with Stravinsky—the dissociation of musical time. Music drafts the image of a world that—for better or for worse—no longer knows history.”¹⁶⁰ Adorno’s most important opposition is not, then, between the static and dynamic: static music is the fate of the twentieth century. Rather, the problem lies in the technical means by which music achieves this ‘dissociation’ of time. With respect to Goeuvaerts and post-war serialism, what becomes most critical is the historical interpretation of the static character of serialism, opposed to jazz and Stravinsky.

In *Philosophy of New Music*, Adorno points out two different modes of the destruction of musical time. With respect to serialism, it is the change in the character of subjectivity itself, the turning into itself of unconsciousness, the Freudian conception of time that creates ‘empty time.’ With respect to the music of Debussy, Stravinsky and the thought of Bergson, the dissociation emerges from the act of spatialization of time. “In the former [Schoenberg], music immerses itself in the unconscious depth of its structure, in the historical fate of its consciousness of time. In the latter—in Stravinsky—music...prompts the listeners to forget the experience of time and deliver themselves over to its spatialization.”¹⁶¹ The differentiation between the ‘spatialization’ of time versus the ‘immersion into the unconscious depths’ offers up two different ways in which music realizes the dissociation of musical time. Although I noted earlier how Adorno engaged Stockhausen via a Bergsonian critique of spatialization in a subsequent meeting at Darmstadt, Adorno initially characterized the heritage of serialism from a different perspective, one that relied on concepts taken from psychoanalysis. “Expressionist music extracted the principle of expression from traditional romanticism so faithfully that expression acquired a depositional character.”¹⁶² The psychoanalytic ‘deposition’ is not an avenue for the self-expression of inner

¹⁵⁹ Adorno, *Philosophy of New Music*, 50.

¹⁶⁰ *Ibid.*, 50.

¹⁶¹ *Philosophy of New Music*, 142.

¹⁶² *Ibid.*, 42.

subjectivity. Instead, it is a procedure of clinical therapy from which the contents of subjectivity are extracted and recorded.

...the seismographic record of traumatic shock ... becomes the technical law of music's form. It forbids continuity and development. The musical language is polarized into its extremes: on the one hand, into gestures of shock—almost bodily convulsions—and on the other, into the brittle immobility of a person paralyzed by anxiety. The entire world of mature Schoenberg's form, as well as that of Webern, derives from this polarization. The musical "mediation," which their school had previously intensified to an undreamt-of degree, is destroyed by this polarization, and its destruction has taken with it the distinction of theme and development, the steadiness of harmonic flow, and the unbroken melodic line as well.¹⁶³

Adorno's Freudian language offers a diagnosis of serialism with three specific symptoms: the end of formal development in music, the dismissal of harmony, and the disruption of melody. These symptoms arise because of the 'objectification' of the mode of expressivity that served the basis of his conception of the formal, harmonic, and melodic manifestations of the subject within nineteenth-century music. Rather than find subjective content mediated through the musical construction of expressive gestures, musical subjectivity now lives within the 'bodily convulsions' and 'brittle immobility' of serial music. The damage that was incurred by the subject is evident in the static, non-flowing character of serialism. Bringing this shift from subjective, dialectical time to a traumatic stasis established Adorno's critique of serialism that he felt also applied to the integral serialism that Goeyvaerts employed. Moreover, it was not merely serialism, but its analytical interpretation that was at stake in this critique. Adorno's persistent disappointment with theoretical discourse at Darmstadt was as much about composition as about the mode of interpretation whereby he saw compositional practice gain its voice. It is at this level where Chua and others rightly recognize the ethical dimension of Adorno's argument, which addresses serialism not in a dismissive way, but, as the "message in the bottle," in the historically appropriate mode of fatalism.

Historical Background and Serial Structure

There are a number of accounts of the incident between Goeyvaerts and Adorno. One of the more famous perspectives on the performance comes from Stockhausen:

¹⁶³ Ibid., 37.

At the 1951 Darmstadt summer school for new music Goeyvaerts and I played his piano sonata. Only the middle movement: the two fast movements were too complicated for me to learn so quickly. We played it in public during the open seminar on composition, and it was violently attacked by Theodor Adorno. At the time Adorno was considered to be an authority on the avant-garde movement: he had just written *Philosophie der neuen Musik* and in this book had literally destroyed Stravinsky as a reactionary, Schoenberg being the only name he would accept. Adorno was actually conducting the seminar in place of Schoenberg, who was very ill and died later in the year, and he attacked this music of Goeyvaerts, saying it was nonsense, it was only in a preliminary state, was not through-composed, but only a sketch for a piece that was still to be written.

The second movement of this *Sonata* was indeed 'point music': just isolated tones, though nowadays it sounds strangely melodic. Adorno couldn't understand it at all. He said, there is no motivic work. So I stood there on the stage in short pants, looking like a schoolboy, and defended this piece, because the Belgian couldn't speak German. I said, but Professor, you are looking for a chicken in an abstract painting.¹⁶⁴

This version of Stockhausen's experience comes from an interview twenty years later, though the problems he mentions align with other accounts, and with Adorno's more general criticism of the Darmstadt composers throughout the 1950s. The question of motivic content is significant: I will return to the issue of what constitutes a 'motive' within this work later. Also, Adorno's ideal of 'through-composition,' and the comment that integral serialist works offer 'preliminary sketches of future works' align with the philosopher's general writings on integral serialism before and after this meeting.¹⁶⁵

Jan Christiaens notes another line of discussion that occurred in this seminar, in which someone made the conjecture that the work was especially Heideggerian.¹⁶⁶ Perhaps in conjunction with this comment, Heinz Klaus Metzger, in his 1957 response to Adorno's

¹⁶⁴ Karlheinz Stockhausen, *Stockhausen on Music* (New York: Marion Boyars, 1989), 35-36.

¹⁶⁵ Goeyvaerts himself, in a perhaps more gracious mode of recollection than others, points out that Adorno's first question was simply why the piece was written for two pianos, which the composer admits was a consequence of playing the slow second movement out of context: the relatively sparse texture in this movement often makes the second piano seem superfluous without the context of the much richer texture of the other movements. Goeyvaerts, "Paris: Darmstadt 1947-1956. Excerpt from the Autobiographical Portrait," 44.

¹⁶⁶ Jan Christiaens, "'Absolute Purity Projected into Sound': Goeyvaerts, Heidegger and Early Serialism," *Perspectives of New Music* 41, no. 1 (2003).

criticisms of serialism at Darmstadt, recalls that Adorno did accuse Goeyvaerts of being an existentialist in this seminar, which the composer denied.¹⁶⁷ Adorno also leveled this criticism later in a more general context, saying that in integral serialist works, “meaninglessness becomes the program, though sometimes dressed up as Existentialism: in place of subjective intention, Being itself is supposed to be heard.”¹⁶⁸ Using archival materials, Christiaens points out that Goeyvaerts did indeed contemplate how music can relate to an absolute, immobile ‘Being.’ Contrary to both Adorno and Christiaens (who follows the Heideggerian thread), his ontology does not seem to channel an ‘existential’ leaning, but rather more strongly echoes a neo-Platonic or Christian sense of ontological hierarchy:

In a note of October 23rd, 1952 [Goeyvaerts] writes that it is the task of music "to present 'Being' in time and in sound matter." This view is on a par with another note, in which Goeyvaerts makes a hierarchical distinction between three fundamental levels of a composition. At the top of this scheme Goeyvaerts places: "absolute 'Being': immobile." At the second level is the general structure of the composition, and at the lowest level he places the concrete composition as it exists in time and space...¹⁶⁹

As I will develop in the next chapter, this hierarchical conception of time and timelessness suggests the influence of Goeyvaerts’s teacher in the late 1940s, Olivier Messiaen. Messiaen’s interest in theological interpretations of numerological patterns (already publicized in his *Technique de mon langage musicale* in 1941) lays out a clear historical precedent. Goeyvaerts, himself Catholic, composed much of his *Sonata* right after his three years in Messiaen’s class. Hence there is little reason to look beyond this tradition of Christian ontology to find a suitable inspiration to Goeyvaerts’s rumination on being and time. At any rate, Goeyvaerts’s philosophical concerns did not seem to directly participate in discussions of ‘existential’ time and

¹⁶⁷ Theodor Adorno, "The Aging of the New Music," in *Essays on Music*, ed. Richard Leppert (Los Angeles: University of California Press, 2002); Heinz-Klaus Metzger, "Just Who Is Growing Old?," *die Reihe* IV (1960).

¹⁶⁸ "The Aging of the New Music," 192.

¹⁶⁹ "On the Problem of Music Analysis," in *Essays on Music*, ed. Richard Leppert (Berkeley: University of California Press, 2002), 170.

issues of ‘authenticity’ that stood at the center of Adorno’s persistent criticisms of both Heidegger and Stravinsky.¹⁷⁰

From the compositional perspective, the underlying logic of Goeyvaerts’s *Sonata* begins with simple organizational patterns whose interactions create a highly complex musical construction. The composer himself only gave passing comments about the details of his piece, but these comments are reinforced by two major analyses: Hermann Sabbe’s authoritative analyses of the *Sonata* reveal how remarkably intricate the musical process indeed is, and Richard Toop’s 1973 analysis points out the unique character of the composer’s serial techniques compared with the other integral serialist works of the early 1950s.¹⁷¹ Toop clarifies that the *Sonata* is not a dodecaphonic piece, but is integrally organized in an idiosyncratic way. As these analyses show, numerological patterns, likely inspired by Christian theological uses of number, abound in the *Sonata*: pitches organized into overlapping heptachords, with serializations of six dynamics and five articulation types, as well as a corresponding serialization of rhythm based on seven- and three-heavy patterns. The number three is used to further organize the voicing and distributions of local pitch structures. Sabbe and Toop both point to Goeyvaerts’s interest in Christian symbolism as a compositional motivation for these orderings. The clarity of abstract structure, however, lives in tension with the complexity of its temporal unfolding. Sabbe admits that it would be difficult to hear the ‘transcendental’ compositional structure of the piece. Indeed, the compositional process seems at times to actively upset any audible recognition of its ordering

¹⁷⁰ Theodor Adorno, *Philosophy of New Music*, trans. Robert Hullot-Kentor (Minneapolis: University of Minnesota Press, 2006); *Negative Dialectics* (Bloomsbury Academic, 1973); *The Jargon of Authenticity* (Evanston, Ill.: Northwestern University Press, 1973). It might be argued, however, that in *The Jargon of Authenticity* Adorno directs his critique to Christian theology on a broader plane.

¹⁷¹ Iddon also presents an analysis of this piece, but his discussion of the *Sonata* simply rehearses Saabe’s findings. Iddon, *New Music at Darmstadt : Nono, Stockhausen, Cage, and Boulez*; Richard Toop, "Messiaen/Goeyvaerts, Fano/Stockhausen, Boulez," *Perspectives of New Music* 13, no. 1 (1974); Herman Sabbe, *Musik-Konzepte*. 19 (1981): *Karlheinz Stockhausen... Wie Die Zeit Verging...: Neue Erkenntnismöglichkeiten Der Seriellen Entwicklung Anhand Des Frühen Wirkens Von Stockhausen Und Goeyvaerts—Dargestellt Aufgrund Der Briefe Stockhausens an Goeyvaerts* (München: Edition text + kritik München, 1981), 7-11. "Karel Goeyvaerts (1923-1993): Aesthetic Radicalism and Ideology," in *Neue Musik, Ästhetik Und Ideologie*(1995), 193-94.

principles. The piece establishes a strong tension between a lucid compositional process and complex audible patterns that prompts the question about the relationship between the composed and the heard.

All of the musical elements follow interrelated serialized patterns, but the treatment of pitch is especially telling. Sabbe's analysis of pitch in the second movement exemplifies the polarity between simplicity of material and complexity of its realization. The movement is built out of a single 14-note collection, which varies according to registration. The 14 note collection is constructed from two heptachords (in Sabbe's analysis labeled **I** and **II**), simplified in figure 1:



Figure 4.1: pitch content of first and second heptachords both belong to [0,1,2,5,6,8,9]

The second heptachord in every musical instance is a whole-step transposition of the first, and there are no other transpositions of these collections. Together they account for all 12 chromatic pitches and then double the D# and A. These two pitches remain fixed in a single register, A5 and D#3, while the other pitch classes follow a process of registral contraction and expansion. All that changes is the distribution of the pitch classes over various registers and grouped in different three and four note cells. At the beginning of the second movement, the initial pitches are distributed over six octaves, then the pair of heptachords are repeated in different combinations and voicings until they all occur within A5 and D#3. The process then runs in retrograde in the following movement, returning to the wide voicing.

In the third movement, the retrograde process also occurs twice as fast. This mirroring makes second and third movements close to palindromes, but adds another alteration: a second process involves the 'crossing over' of the content of each hand of the two piano parts, with each playing the 14 note collection in such a way that the heptachords will be constructed linearly within a single part and combinatorially between the two pianos.

Unlike a work whose compositional logic unfolds through the development of a distinctly heard musical theme, or that is organized with leitmotifs to mark significant events,

Goeyvaerts's *Sonata* does not establish a clear hierarchy between motivic and non-motivic material. The pitch and interval content of this organization is more prescribed than that of a 12-tone row, which might seem to delimit the possible interconnections. But in reality, the system creates a proliferation of possible relations. The entire compositional structure is based on a clear, systematic rigor that in some ways, such as the strict repetition of the exact same hexachord forty times over, delimits the complexity of the process. Yet the manifestation of this process obscures this seemingly clear compositional organization. While the composer's technique gives a clear and direct way to elaborate a limited amount of material, the compositional patterns are not heard directly: the lack of differentiation of timbre between the two pianos, along with the overlaid serialization of duration, and the difficulty in identifying the same note in different registers, does not prioritize these compositionally primary groupings over other ways of listening.

At the same time, the work does not present an undifferentiated surface. The compositional structure creates a diversity of relations that a listener or performer may easily catch on to: registral similarities, upward or downward gestures, emergence of voice leading in the later, more registrally concentrated sections, etc. As I will elaborate later, certain "motivic" connections do in fact emerge more prominently out of the complexity of the texture: for example, even the simple fact that D#3 and A5 are both repeated in both heptachords of the collection, while maintaining the same register, makes them stand out in particular ways. Their quality, however, is not one of clarity and order—the hallmark of the compositional technique considered in itself—but of vague recognition, dark obscurity rather than crystalline transparency.

In following Goeyvaerts's compositional processes, Sabbe's and Toop's detailed analyses about the timeless numerological structure of the piece have contributed a considerable amount to the understanding of the complexity of integral serialist technique, but ultimately only a partial perspective on the aesthetic issues of the audible apprehension of its inner logic. From a heritage of analysis that grew out of an interest in precisely such compositional techniques, of course, minimizing the audible dimension is merely a manner of prioritization. Yet there are unspoken consequences for this technique that reaffirm Adorno's interpretation of its fatalism toward

human temporality, not at the technical level, but within the possibilities of its heard performance.

Adorno's Perspective on Serialism, Analysis and the Nature of Time

Adorno's specific criticisms of Goeyvaerts informed part of the philosopher's more general response to the enthusiasm for serialism at Darmstadt.¹⁷² Many of these points were expanded in Adorno's 1954 lecture he initially gave at a music festival at Stuttgart, later published as "The Aging of the New Music."¹⁷³ Heinz-Klaus Metzger provided a response to this lecture by voicing a number of criticisms that would come to be common themes for addressing Adorno: that he was toeing a conservative line; that he did not truly understand integral serial technique; that he was unaware of more recent developments; and that his entire point of view of integral serialism rested on his single experience of Goeyvaerts's piece.¹⁷⁴ There is some truth to many of these points. It is indeed easy to be misled by Adorno's famous lecture: the philosopher makes a number of claims that rely on implicit premises found in his larger perspective on music, and also includes lamentations on a host of other issues that seem especially conservative within the context of Darmstadt (the new generation of composers' inability to harmonize chorales or handle 16th century counterpoint, for example.)¹⁷⁵ Even further, it is necessary to admit that Adorno's entire philosophy of music relies on a somewhat controversial interpretation of nineteenth and twentieth century history, which unites problems of subjectivity, historical events, and musical technique into a perspective which, even by the mid-century, seemed to be founded on an incredulously large and somewhat schematized philosophical sweep.

¹⁷² Heinz-Klaus Metzger, "Just Who Is Growing Old?," *die Reihe* IV (1960); Edward Campbell, *Boulez, Music and Philosophy* (New York: Cambridge University Press, 2010); Morag Josephine Grant, *Serial Music, Serial Aesthetics: Compositional Theory in Post-War Europe* (Cambridge: Cambridge University Press, 2001).

¹⁷³ See Richard Leppert's Commentary on the history of the lecture. Theodor Adorno, *Essays on Music* (Berkeley: University of California Press, 2002), 107-09.

¹⁷⁴ Metzger, "Just Who Is Growing Old?"

¹⁷⁵ See also Max Paddison, *Adorno's Aesthetics of Music* (New York: Cambridge University Press, 1997)

From Adorno's perspective, though, his response to Goeyvaerts was not inspired by his incomprehension or conservatism, but from a feeling that post-war integral serialism was unable to move beyond the aesthetic problems that he had already articulated two years earlier in *Philosophy of New Music*. According to Adorno, by isolating Anton Webern's techniques without working through the historical reasons for them, the new generation of composers had lost the path that serialism had initially promised. Most scholarship that deals with Adorno's criticisms of serialism rehearses his critique of a naïve relationship between composer and musical material, the problem of *Materialfetishismus*, which, as Zagorsky summarizes, "assumes that material is something natural and elevates ... it to the status of pure being, instead of recognizing that the material with which a composer works is historically ... determined."¹⁷⁶ To deny the historically mediated character of any artistic technique or philosophical concept was a cardinal sin of Adorno's aesthetics. But what remains undecided is whether it was the music itself, or whether it was simply Darmstadt's mode of discussion of the music, that committed the sin to an unpardonable degree.

Many years after the incident, Adorno brought up his Darmstadt experience to suggest that much of his problem arose from the composer's analytical approach as much as the music itself.

It is precisely... when faced with aleatory or serial music, that analysis is frequently confused with the mere recording of facts. This then results in the kind of absurdity once reserved for me at Darmstadt, where a composer (who, to his credit, has since given up the vocation) showed me a composition which seemed to me to be the purest nonsense. When I asked him what this or that meant, what meaning, what kind of musical sense this or that particular phrase or development had, he simply referred me to correspondences between dynamic markings and pitches and so on—things which have nothing whatever to do with the musical phenomenon as such. This kind of description of the compositional process, of what the composer has done in the composition, is totally unproductive....¹⁷⁷

¹⁷⁶ Zagorsky, "'Nach Dem Weltuntergang': Adorno's Engagement with Postwar Music," 682; Max Paddison, "Stravinsky as Devil: Adorno's Three Critiques," (2003); "Adorno, Time, and Musical Time Response to Stephen Decatur Smith," *The Opera Quarterly* 29, no. 3-4 (2013); "The Language-Character of Music: Some Motifs in Adorno," *Journal of the Royal Music Association* 116, no. 2 (1991); Borio, "Die Positionen Adornos Zur Musikalischen Avantgarde Zwischen 1954 Und 1966."

¹⁷⁷ Adorno, "On the Problem of Music Analysis," 172-73.

That Goeyvaerts indeed stopped composing for many years after his time at Darmstadt suggests that this comment is referring to his encounter with the Belgian composer. Or perhaps such an experience was common for Adorno: Darmstadt was, after all, a place for studying composition, and so the festival was fated to produce highly descriptive analyses emphasizing compositional practice. This incongruity between the composers' and Adorno's expectations may have resulted in multiple incidents of similarly frustrating interactions.

If Adorno's perspective was ultimately too conservative or relied too much on his broad philosophical perspective, it is nevertheless true that main thrust of his critique does inform one perennial dispute about integral serialism, namely, to what extent there is a divergence between compositional patterns and listeners' experiences.¹⁷⁸ What can be heard of Goeyvaerts's complex integrally serial process? In my analysis, I will argue that the way in which Adorno relates this challenge to the historical conditions of time within subjectivity does supply the beginning of a convincing interpretation of the possibilities and bounds of experience of serial music. These possibilities, discursively obscured by the emphasis on compositional structure, actually do provide an account of Goeyvaerts's *Sonata* that elucidates the 'temporal' side, rather than the 'ontological' side of the music.

Stepping back from the details of the encounter, it becomes clear that much of the contention between Goeyvaerts and Adorno rested on the problem of time, and what it means to attempt to create 'static' music. It has been noted that Adorno's philosophy of time is central to understanding his response to serialism and his large influence on the music-theoretical discourse at Darmstadt.¹⁷⁹ However, it is necessary to more extensively differentiate a number of different stages of Adorno's philosophy, and emphasize the psychoanalytic themes that he develops in his

¹⁷⁸ It is true that some theorists have defended the audibility of complex serial procedures. My more limited argument with respect to Goeyvaerts, however, is not that the serial structure is inaudible, but that it only provides a limited explanation of the more critical processes that define the work.

¹⁷⁹ Borio, "Dire Cela, Sans Savoir Quoi: The Question of Meaning in Adorno and the Musical Avant-Garde."; Stephen Decatur Smith, "'Even Money Decays': Transience and Hope in Adorno, Benjamin, and *Wozzeck*," *The Opera Quarterly* 29, no. 3-4 (2013); Marcus Zagorsky, "'Nach Dem Weltuntergang': Adorno's Engagement with Postwar Music," *The Journal of Musicology* 22, no. 4 (2005).

history of musical time. This dialectical concept of time may be fatalistic, but does not thereby require a purely negative dismissal of integral serialism. Below, I will offer an analysis of Goeyvaerts's *Sonata* that takes elements of Adorno's perspective to be more compatible with integral serialism than has been traditionally understood.

By employing Adorno's thought in the construction of my analytical method, I hope to show that Adorno's systematic pessimism does not lead into a simple rejection of the significance of integral serialism, but actually provides a powerful image for the aesthetic principle of integral serial stasis: that of the dream as it was described by psychoanalytic thought. If the dream-state is difficult to grasp yet preserves the trauma that haunts the subject, it accomplishes this power by way of the unconscious. In the context of Goeyvaerts's music, it is complexity rather than sleep, and structure rather than unconscious, but equally approached by analysis, if the analogy can be stretched that far. The basis for this comparison lies in *Philosophy of New Music*, where Adorno aligned subjective content of serialism with that of the traumatized subject of psychoanalytic thought. I will argue Adorno latched on to Freud's notion that the dream is basically atemporal, and that time is part of the psyche's way of filtering the myriad experiences of life as it seeks to avoid the potential traumatic shocks of the world.¹⁸⁰ The immanent atemporality of Freud's traumatized subject is quite different than the transcendent atemporality of the ontological musical structure that Goeyvaerts grounds his conception of 'static' music. Thus while Adorno and Goeyvaerts confront the same set of musical questions, the ideological difference between the stasis of a traumatized subject and the stasis of an ontological transcendence provide the subtle yet decisive point on which Adorno's complex assessment of serialism functions. Adorno's distinctions between different modes of stasis in twentieth century music provide a philosophical structure to his complex critique of serialism, and these distinctions followed from his dialectical philosophy of time.

¹⁸⁰ For Freud's concept of time, its function as a shield, and the timeless character of the id, see: *Beyond the Pleasure Principle*, trans. James Strachey (New York: Norton, 1961); Sigmund Freud, *New Introductory Lectures in Psycho-Analysis*, trans. James Strachey (New York: Norton, 1965). See also Jacques Lacan, *The Seminar of Jacques Lacan: Freud's Papers on Technique, 1953-1954* trans. John Forrester (New York: Norton, 1988). Spivak also provides an important interpretation of this Freudian theme for Derrida in her introduction to *Of Grammatology*. Gayatri Spivak, introduction to *Of Grammatology*, by Jacques Derrida (Baltimore: Johns Hopkins University Press, 1974), xl.

Articulating the historical dialectic within Adorno's sense of time is crucial to a full understanding of his position. Adorno's philosophy of time has been a recent matter of study, and as referenced in the previous chapter, the Bergsonian background has received a large amount of attention, as well as his critical responses to Husserl and other philosophers.¹⁸¹ Adorno argued that both post-World War II society and serialism shared a similar sense of time that was neither the mere flow of perception, nor the pure abstract dimensionality of a spatialized time. Instead, time is a structure of conscious thought that provides order to experience, protecting the unconscious—which for Freud was an exclusively spatial realm—from the chaos that, left unfiltered, would traumatize the inner life of the psyche. But simply enumerating all the myriad sources of Adorno's philosophy of time fails to grasp Adorno's commitment to the historicity of concepts themselves. For Adorno, 'musical time' as a concept follows the historical dialectic of 'real time' and subjectivity that forms the center of his philosophy. As he explained in the mid-1950s,

For the music of Webern and that of Bach, the experience of time that is specifically unique to it and that characterizes its structure may well be more

¹⁸¹ Adorno's general philosophy of time has been discussed by various scholars, and has recently gained increased attention. One is Robert Adlington, "Musical Temporality: Perspectives from Adorno and de Man," *Repercussions* 6, no. 1 (1997). However, a few critical issues make Adlington's summary difficult to rely on here. First, his dependence on vaguely translated passages of the older English translation, *Philosophy of Modern Music* presents Adorno's ideas without emphasis on the historical narrative of his thought. Second, Adlington's ahistorical unification of Adorno's writings of the 1940s, 50s, and 60s, in which key conceptions of time and assessments of past philosophers change in important ways, does not recognize the distinct character of Adorno's philosophy as presented in his writings of the late 1940s with his significant sections on time in, for example, *Negative Dialectics* of 1966. Also, as I discuss below, the central distinction Adorno makes between the semblance of musical time and the time of reality is not emphasized in Adlington's discussion.

Stephen Smith corrects much of this perspective by noting Adorno's contrast between musical and empirical time in the context of his reading of Benjamin and Husserl. See Stephen Decatur Smith, "Awakening Dead Time: Adorno on Husserl, Benjamin, and the Temporality of Music," *Contemporary Music Review* 31, no. 5-6 (2012) and Smith, "'Even Money Decays': Transience and Hope in Adorno, Benjamin, and *Wozzeck*," *The Opera Quarterly* 29, no. 3-4 (2013), as well as Max Paddison's response, Max Paddison, "Adorno, Time, and Musical Time Response to Stephen Decatur Smith," *The Opera Quarterly* 29, no. 3-4 (2013). Other discussions of Adorno's conception of time focus on the historical perspective and its relationship to other ideas. See Seth Brodsky, "Utopian Strain: Ambivalent Absolutes in European Composition, 1968-2001" (University of Rochester, 2007); and Edward Campbell, *Boulez, Music and Philosophy* (New York: Cambridge University Press, 2010).

essential than the fact that both unfold in time, or even that in both cases the musically established time does not coincide with that of its chronometric duration. But just as the temporal form of every music, its inner historicity, varies historically, so this inner historicity also always reflects real, external time.¹⁸²

Adorno does not want to indicate that there is a single, metaphysically constant concept of ‘real, external time,’ though. Like all of Adorno’s concepts, the idea of time itself has a history. The ‘real’ time of Viennese classicism was “the very same time that constituted the rhythm of the emancipated bourgeois society”; Beethoven captured the Hegelian concept of temporality; the static time of Stravinsky is the rationalized collapse of Bergson’s temporal duality; Webern and late Schoenberg invoke the Freudian temporality of the damaged psyche; and integral serialism attempts to gain “empirical time” that, in an extension of his Freudian interpretation, finally repressed every element of meaning or expression.¹⁸³ For Adorno, “the time that is immanent in every music, its inner historicity, *is* real historical time, reflected as appearance.”¹⁸⁴ The ‘appearance’ of real, historical time within music not only means that music reflects the historical moment in which it was composed, but that it is necessary to tie both music and time to the history of the subject; and that music, time and history are all dimensions of the larger (explicitly and implicitly Hegelian) assumption about the unity of these topics.¹⁸⁵ It is from these philosophical starting points that Adorno constructs a historical polarity between ‘subjective,’ flowing, dialectical, time on one hand, and empty, empirical, or rationalized time on the other.¹⁸⁶

¹⁸² Theodor Adorno, "The Relationship of Philosophy and Music," in *Essays on Music*, ed. Richard Leppert (Berkeley: University of California Press, 2002), 143-44.

¹⁸³ *Ibid.*

¹⁸⁴ *Ibid.*, 144.

¹⁸⁵ As will become clear, even the very mode of reflection between ‘real’ time and its musical semblance is also itself historically conditioned. For Adorno, the wish to do away with the semblance character of time within serial music defines its central aesthetic challenge.

¹⁸⁶ Unlike the Bergsonian premises that I discussed earlier, this polarity follows the same historical narrative Adorno uses for other philosophical developments, meaning that there is a slow historical progression from one to another, rather than a mutually oppositional but synchronic division.

Adorno's formulation that musical time is not "mere" time or "empty" time rests on a significant element of his philosophy, the concept of semblance, illusion, or appearance—variously translating the German concept *Schein*. Thus one of the most striking characteristics of Adorno's conception of musical time is its non-existence. Adorno's traditional, subjective version of musical time lives in the 'illusion' or 'semblance' that the music is actually dialectically coming into being in its performance, in contrast to 'empirical' time.¹⁸⁷ In his late writing, *Aesthetic Theory*, Adorno illustrates how subjective musical time seems to unfold in a process of becoming when in reality its nature as a work of art assumes it is not actually coming into being, since it has been constructed beforehand.

The semblance-character [der Scheincharakter] of artworks is immanently mediated by their own objectivity. Once a text, a painting, a musical composition is fixed, the work is factually existent and merely feigns the becoming—the content—that it encompasses; even the most extreme developmental tensions in aesthetic time are fictive insofar as they are cast in the work in advance; actually aesthetic time is to a degree indifferent to empirical time, which it neutralizes.¹⁸⁸

The process that is manifested in a traditional musical work is not actually 'becoming'; development is ultimately an illusion if the work is established in advance. This is not to say, however, that aesthetic time is less significant for its lack of reality. On the contrary, "...the semblance character of art is at the same time its methexis in truth."¹⁸⁹ As Adorno will argue throughout his writings, the non-reality of art preserves its significance: "Artworks detach

¹⁸⁷ The complex meaning of *Schein*, semblance or illusion in Adorno's thought is closely tied to his conception of dialectics, which begins with Kant's in which dialectics becomes "a critique of dialectical illusion" Immanuel Kant, *Critique of Pure Reason*, trans. Werner Pluhar, (Indianapolis: Hackett Publishing, 1996), 115. With respect to the apparent contradictions involving the temporality of being and becoming, Kant works from the antinomies in a dialectically pure reason that "must carry with it not a merely artificial illusion that immediately vanishes once we have insight into it, but a natural and unavoidable illusion that still continues to delude us—although not to deceive us—even when we are no longer tricked by it...", *Critique of Pure Reason*, 455. For Kant and then for Hegel, appearance was not merely illusory in the sense of being false, but defining a significant dimension of human reality.

¹⁸⁸ Theodor Adorno, *Aesthetic Theory*, trans. Robert Hullot-Kentor (Minneapolis: University of Minnesota Press, 1997), 107. See also Smith, "Awakening Dead Time: Adorno on Husserl, Benjamin, and the Temporality of Music."

¹⁸⁹ *Ibid.*, 108.

themselves from the empirical world and bring forth another world, one opposed to the empirical world.... Thus however tragic they appear, artworks tend a priori toward affirmation.”¹⁹⁰

The value of the semblance of becoming functions in *Philosophy of New Music* as well, but in its negative form. Adorno saw in serial music the attempt to escape semblance, and the attempt to escape from their role as something more than empirical reality.

Since the artwork, indeed, cannot be reality, the elimination of its characteristic elements of semblance only throws all the more glaringly into relief the semblance character of its existence.... The annulment of the artworks’ characteristic elements of semblance is demanded by its own consistency. But the process of annulment, which the meaning of the whole demands, makes the whole meaningless. The integral artwork is the absolutely absurd artwork.¹⁹¹

Adorno maintains that serial works are not merely reducible to their material reality as ordered sonic patterns. At the same time, the rationalized processes which seek objectivity outside the structures of subjective existence become alien to that existence. The attempt to escape the realm of semblance requires the artwork to deny any meaning that would have lived within that ‘illusory’ realm. The optimism or affirmation Adorno saw in art relied on its opposition to brute materiality, and so the effort to negate semblance was in turn a suspension of that affirmation. Adorno is clear that this negation is not merely a compositional issue, but a problem that he views to be part of the basic structure of subjective content of music in experience as well. Adorno notes that in serial music, “The continuum of subjective experiential time is no longer believed to have the power to integrate musical events and, as their unity, to give them meaning.”¹⁹² Adorno did not merely argue that subjective experiential time no longer grasps the meaning of complex musical events, which also happens to be true. Subjective experiential time *is* the unity of musical events and thus *gives* them meaning.

The thrust of Adorno’s claim goes back to his Hegelian commitments about the temporal nature of the subject, and how subjective experiential time is the particularized moment of the temporality of spirit in general. In the Hegelian paradigm, musical unity and subjective unity are closely intertwined. In Hegel’s discussion of music in his Aesthetics lectures, he says that “[i]f

¹⁹⁰ Ibid., 1.

¹⁹¹ *Philosophy of New Music*, 57.

¹⁹² Ibid., 50.

the work of art is of a genuine kind, the most perfect expression of the individual must at the same time be the production of supreme unity.”¹⁹³ This unity is not merely a category of aesthetic appreciation—a picturesque unity in variety—it is an alignment of musical unity with the unity of the artist as subject within the dialectics of spirit. Neither in music nor in the subject is time merely a dimension of duration. In his treatment of melody and rhythm, Hegel points out that “...the self is not an indeterminate continuity and unpunctuated duration, but only becomes a self by concentrating its momentary experiences and returning into itself from them.”¹⁹⁴ Music succeeds only on the condition that it follows this logic, in which “...the self can find itself again and be satisfied in this diversified definiteness of duration only if single *quanta* are brought into one unity.”¹⁹⁵ The significance of unity for Hegel lies in the affirmation of the spirituality of the subject—or more precisely the progressive dialectical spiritualization of the subject: “The inner life in virtue of its subjective unity is the active negation of accidental juxtaposition in space...”¹⁹⁶ Brute objectivity, accidental and meaningless, is empty of time.¹⁹⁷ A musical work, then, gains its temporal character from its status as an artifact of a creator’s subjectivity objectified in the work: “For music takes as its subject-matter the subjective inner life itself, with the aim of presenting itself, not as an external shape or as an objectively existing work, but as that inner life; consequently its expression must be the direct communication of a living individual who has put into it the entirety of his own inner life.”¹⁹⁸ Hegel’s model of expression seems at first glance akin to some communication theory model as though a musician or composer ‘communicates’ his or her subjective inner life ‘through’ the musical work to the

¹⁹³ G.W.F. Hegel, *Hegel's Aesthetics: Lectures on Fine Art*, trans. T.M. Knox, vol. II (New York: Oxford University Press, 1975), 896.

¹⁹⁴ *Ibid.*, 914-15.

¹⁹⁵ *Ibid.*

¹⁹⁶ *Ibid.*, 907.

¹⁹⁷ McTaggart, who was an expositor of Hegel in a quite different tradition than Adorno, essentially comes to this same conclusion: the non-reality of time outside of the subjective present. See J. Ellis McTaggart, "The Unreality of Time," *Mind* 17, no. 4 (1908).

¹⁹⁸ Hegel, *Hegel's Aesthetics: Lectures on Fine Art*, II.

listener. There is a fundamental difference, however, in that both the musical work and the composer's own subjective existence participate in the dialectical movement of spirit, and so share a common temporal ground. The sense of 'participation' is much stronger than any mere communication model, since there is a unity between time, subjectivity and music that Hegel describes with visceral images of music's power to 'penetrate' and 'grip the self in its simplest being':

The self is in time, and *time is the being of the subject himself*. Now since time, and not space as such, proves the essential element in which sound gains existence in respect of its musical value, and since the time of the sound is that of the subject too, sound on this principle penetrates the self, grips it in its simplest being, and by means of the temporal movement and its rhythm sets itself in motion...¹⁹⁹

Hegel unifies musical time and subjective time because for him, duration is primarily and exclusively the duration of subjectivity. And subjectivity, at least the Hegelian sort, spills well over the borders of actual composers, performers, or listeners, into the musical process itself and in doing so creates a continuity among them with respect to the artistic forms within music and the temporal forms within subjective experience.

Adorno's philosophical analysis of time relies on the historical transition of the concept itself as much as the conclusion. Hence it is not only necessary to describe the particular moment of the mid-century, but also how music got there. Adorno's narrative about the musical shift in Schoenberg and Webern away from a dialectical, subjective flow of human time to the traumatic, de-humanizing time uncovered by the twentieth century catastrophes includes the continual rationalization of subjectivity that integral serialism captures. If his historical contrast between nineteenth and twentieth century modes of subjective temporality is a bit stark, it nevertheless provides an image of the philosopher's continuity of thought. Adorno's effort to frame serial music within a larger historical-philosophical context was precisely the premise that proved to be contentious in his confrontation with the Darmstadt composers, but it is also the source of a few insightful interpretations of serialism.

The historical drama of the development of the concept of time itself, as well as its manifestation in music, lives within a tension between two senses of time, the temporality of

¹⁹⁹ Ibid., 908. My italics.

subjectivity and the brute force of empty time. Neither of these visions of time remains fixed, however, but are constantly changing breadth and meaning depending on the historical moment: it is even possible to see a significant shift between the 1940s and the 1960s, as his language shifts again from Bergsonian, Husserlian and Freudian critiques of empty or spatialized time, towards the consideration of a more scientifically-determined ‘empirical’ time.²⁰⁰

For the generation of composers at Darmstadt in the 1950s, Adorno’s philosophy of time was most clearly presented in his text *Philosophy of New Music*, published in 1949 but written over the course of the previous decade. Here Adorno frames music, time, and subjectivity within his view of history in which the optimism of the European Enlightenment descends into the pure negativity of post-World War II reality. Time as a dimension of human subjectivity lives on in Adorno’s thought largely through his reading of Kant and Hegel and their formulation of dialectics. In this late eighteenth and nineteenth century context, the semblance of subjective flowing time can be dramatized within a musical process of becoming which is captured in an objective, finished, work. The mid-twentieth century, however, was marked by the danger of overly rationalized subjectivity that falls into the ‘empty time’ of static schemas. Music that truly reflects the historical moment of the mid-twentieth century will avoid the illusion of temporal becoming at the cost of familiar modes of musical experience, in favor of a highly rationalized construction, yet thereby forfeiting any sense of optimism or meaning that music upheld. While Adorno’s philosophical contributions cannot be reduced to his intellectual heritage, his Hegelian roots, notably the temporal nature of the Hegelian subject, offer key elements of what Adorno took to be ‘subjective’ time.

To capture what Adorno means by ‘subjective’ time, it is most useful to examine the paradigm that Adorno saw his present musical moment abandoning: time within dialectics. Adorno’s philosophy of time, both with respect to music and to his broader philosophical position as a whole, has its deepest roots in the nature of dialectics. Dialectically formed time stands at the root of the concept of the directional, developmental, unifying drama of the (essentially Beethovenian) musical temporality Adorno viewed to be characteristic of the Enlightenment and Romantic subject. Less concerned with binaries, Adorno’s understanding of

²⁰⁰ Adorno’s discussion of time spans his entire corpus, in fact.

dialectics focused on the ontological problem initiated by the pre-Socratics and articulated by Kant and Hegel: the dialectical relationship between a whole and parts, or the one and the many, and under what conditions this relationship created a unity.

Within the sphere of music, Adorno's concept of dialectics follows a consistent use of the idea in twentieth century scholarship that concerns the process of becoming of a musical work from its many parts to the unified whole through the passing of time. This particular formulation, underlying much 19th century musical aesthetics, rests in the dialectical logic developed in German philosophy of Kant and Hegel. Outside this late 18th and early 19th-century German context, *dialectic* can simply mean dialogue or dialogical, the interaction between two potentially valid points of view in an argument. Within theories of music, however, *dialectical* came to mean something quite different than *dialogical*. Dialectics became a perspective from which aesthetic questions about formal organization, melodic or harmonic expression, even rhythm and tempo, were treated within a single, unified work.²⁰¹ The development of music in which opposing musical forces created a drama that, over its unfolding constructed an experience of unification via a synthesis of the myriad elements stems from an optimistic interpretation of the structure of dialectics itself to provide synthesis. Adorno's influence on the reception of 19th century music is certainly an open debate, but in the present context Adorno's significance lies in the ways in which he saw serialism, including, I argue, integral serialism, leave the paradigm of dialectical time for something else.

By contrast, Adorno argued that the catastrophic events of recent history revealed that this conception of dialectics and subjectivity was false, and thus negated the validity of its corresponding flow of temporality. Music that, in its fidelity to its historical moment, has tried to

²⁰¹ Although the particular way that Adorno interpreted the dialectical process of musical becoming was unique to his philosophical system, his ideas represent a broader conception of 'traditional' musical time of the nineteenth century. Janet Schmalfeldt points to Dalhaus, for example, who explains the logic of Beethoven's music in which the contradiction among opposing musical forces are "the vehicle of a dialectics, by means of which the form of the movement [in this case, the first movement of Beethoven's op. 31, the 'Tempest' Sonata] comes into being as a musically perceived transformational process." Janet Schmalfeldt, "Form as the Process of Becoming: The Beethoven-Hegelian Tradition and the 'Tempest' Sonata," *Beethoven Forum* 4(1995). See Carl Dalhaus, *Ludwig van Beethoven: Approaches to His Music* (New York: Oxford University Press, 1991), 116-17. See also Michael Cherlin, "Hauptmann and Schenker: Two Adaptations of Hegelian Dialectics," *Theory and Practice* 13(1988).

empty itself of the negated forms of subjectivity has also fallen into an empty time. Adorno ends his essay on Schoenberg with the warning about the loss of the musically audible passage of time: “Around music as it is heard, time springs together in a radiant crystal, while unheard [music] tumbles perniciously through empty time. Toward this latter experience, which mechanical music undergoes hour by hour, new music is spontaneously aimed: toward absolute oblivion. This is the true message in the bottle.”²⁰² Unheard music means on one hand the mechanical processes which create highly complex, incomprehensible music: In them, “[t]he shocks of the incomprehensible... illuminate the meaningless world.”²⁰³ Equally, this music is unheard because “no one ... wants to have anything to do with them”—serial music had become alienated from the audience for whom it could have shocked.²⁰⁴ Twice alienated from human subjectivity, serial music falls through an empty time void of both subjective musical content and consumption. Adorno's consistent discussion of time in the *Philosophy of New Music* continually returned to the danger of the destruction of subjective time and the fall into empty time: the danger that music “fall prey to mere time,” the historical situation in which “the empty course of time becomes ever more threatening,” the attempt to escape “the empty dominion on time,” the problem that “unheard, [music] tumbles perniciously through empty time.”²⁰⁵ Adorno claims it is a fundamental character of the new paradigm of the over-rationalization of humanity to lose subjective time.²⁰⁶ “The passing away of subjective time in music appears so inescapable in the

²⁰² Adorno, *Philosophy of New Music*: 102. *Philosophie der neuen Musik*, 126: “Schießt um die gehörte Musik die Zeit zum strahlenden Kristall zusammen, so fällt die ungehörte in die leere Zeit gleich einer verderblichen Kugel. Auf diese letzte Erfahrung hin, die mechanische Musik stündlich durchmacht, ist die neue Musik spontan angelegt, auf das absolute Vergessensein. Sie ist die wahre Flaschenpost.” Chua offers an interpretation of Adorno’s statement regarding the message in the bottle. Daniel Chua, “Drifting: The Dialectics of Adorno's *Philosophy of New Music*,” in *Apparitions: New Perspectives on Adorno and Twentieth-century Music*, ed. Berthold Hoeckner (New York: Routledge, 2006).

²⁰³ Adorno, *Philosophy of New Music*: 102.

²⁰⁴ Ibid.

²⁰⁵ Ibid., 47, 102.

²⁰⁶ As I discussed earlier, Marx’s interpretation of time as a measurement of labor was taken by Adorno. See Karl Marx, *Capital: A Critique of Political Economy*, trans. Frederick

midst of a humanity that makes itself into a thing, into an object of its own organization, that at the extreme poles of composition something similar can be observed.”²⁰⁷ Both poles, which Adorno had established as Schoenberg and Stravinsky, are indicted here. Schoenberg’s music does gain a certain dignity for Adorno in its effort to “withstand reality and absorb the panic anxiety that corresponds to the integral state,” that is, to embrace the problematic character of the historical moment directly rather than merely acquiesce to the inhuman as a mode of construction, as he accused Stravinsky of doing.²⁰⁸ Adorno’s treatment of time is not, then, split between the two composers he discusses: it is split between an established status of human temporality within subjectivity, and a new paradigm of time that lacks a human dimension, an empty time both Stravinsky and Schoenberg fall into.

“Melody” as a Compositional Variable and Vehicle for Subjective Expression

The construction of melody was for both Hegel and Adorno a site for subjective expression, the ‘dialectical’ foundation for expression was closely intertwined with the nature of subjective time in its historical relationship with musical style. The ‘dialectical’ or subjective flow of time corresponded to the drama of tonal development and the synthetic unification of increasingly radical melodic and harmonic gestures, culminating in twelve-tone technique. Adorno saw in twelve-tone technique the destruction of these basic melodic premises, since the directionality of tonal intervals no longer carry the same sense of movement towards resolution: “The true quality of a melody is always to be measured by whether or not it succeeds in transcribing the effectively spatial relations of the intervals into time. Twelve-tone technique fundamentally destroys this relation. Time and interval diverge.”²⁰⁹ Adorno’s nostalgia for tonal intervals looked to their ‘temporal’ quality, the directionality that they gained from the relations within tonal space. It may be that Adorno’s claim about twelve-tone technique’s destruction of

Engels, vol. I (Chicago: C.H. Kerr and Company, 1915), 342-44. Also See Adlington’s commentary on Adorno’s concern with ‘free time.’ Adlington, “Musical Temporality.”

²⁰⁷ *Philosophy of New Music*, 142.

²⁰⁸ *Ibid.*

²⁰⁹ *Ibid.*, 59.

the temporality of melody rests in part on a naïve sense of equality between the melody and the serial row: even if a composer were to use the tone row as a melodic voice, both common practice melodic intervals and dodecaphonic rows would seem to share the common danger of falling into the schematic abstractions of serial intervals. At the same time, Adorno's debatable assessment of the nature of the row nevertheless does describe a more general difference between traditional temporality of melodic direction and the disjunctive intervals of certain serial works, especially the opening of the second movement of Goeyvaerts's *Sonata*. Adorno's specific claim about the twelve tone row, that its "continuations evince an aspect of arbitrariness" and that it has "no impulse to continue and is driven forward only by manipulations external to it" may confuse the musical function of a row, but does nevertheless describe the way in which melodic intervals are often deployed in serial music in order to avoid tonal gravity.²¹⁰ In fact, I demonstrate in other chapters that it was precisely this aesthetic consequence of using series that many composers became intrigued in, maximizing its effect through serialized rhythm.²¹¹

If Adorno's observations refer to the non-functionality of intervals and the disruptive character of radical octave transpositions, rather than the 'row-as-melody' conflation, his thoughts are somewhat accurate. What Adorno sought to describe is the temporal consequences of inhibiting the experience of melodic directionality. The opening of the second movement of Goeyvaerts's *Sonata* is a clear example of a musical passage whose radical registration and serialized duration is meant to negate the feeling of continuity among pitches. It is difficult in this piece for perception to unify the discontinuous elements of the first moments of the work into a melodic line: the disjunctive leaps span as much as six octaves in rapid succession. Furthermore, there is no way to distinguish any independence or distinction between the two pianos, and the architectonic pitch collections, which Sabbe illustrated are central to the process of the work, cannot be isolated from the overlapping occurrence. Examples 4.1 and 4.2 show the beginning of the second movement and the ending of the third movement, the two mirrored

²¹⁰ Ibid.

²¹¹ Christopher Hasty's discussion of twentieth century composers seeking to avoid continuation offers a very specific formulation of what continuation means and offers detailed explanations on how it was later deployed. Christopher Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1997).

registral extremes that arise from the organizing process of the middle movements. With the added complexity of the serialized durations, articulations and dynamics, the quality of interval relations are lost. The exact same hexachordal pitch-class will be repeated twice every two measures, but it would be necessary to recognize these interval relations over a wide variety of intervals.



Example 4.1: Goeyvaerts Sonata Movement II, measures 1-4. Pitches distributed over six octaves.



Example 4.2: Sonata Movement III, measures 22-25. 'Retrograde' rotation of collection A, same registral distribution.

From Adorno's perspective of gestural expressivity, there is little to grasp onto in terms of direct melodic continuity among pitches, hence the label sometimes given to integral serial works like

this as ‘punctual.’ The discontinuity of these notes is striking in comparison to the alternative possibilities that these notes could give. Compressing the intervals of the first three measures of the second movement in both the right hands produces a nearly step-wise melody, illustrated in Figure 4.2:



Figure 4.3: Simplification of both right-hand parts of measures 1-3 of Movement II, compressing intervals to give closest relation among pitch classes.



Figure 4.4: Reduction of Movement II, Measures 18-20: the temporal midpoint of the second and third movements.

Comparing Example 4.4 and Figure 4.5, it is evident that the pitch-classes alone, merely their atonality, are not sufficient to disrupt a sense of continuity and temporal flow: there is almost a tonal center of G by the end of the third bar, in fact. Yet Goeyvaerts maximized their discontinuity by transposing them into extreme octaves.

What Goeyvaerts and Adorno passed over in their discussion, however, is that this extreme disruption is not an overall stylistic quality, but actually changes as the movement unfolds. As the registration becomes more limited, one natural consequence is that there are moments where distinct lines do emerge. At other points in the second and third movements, the intervallic disjunction lessens as the pitch collections converge. In Example 4.3, which occurs near the end of the second movement, the registration is limited to just over two and a half octaves. In these measures, something like distinct “voices” can be differentiated from one another by register in a sort of free polyphonic texture.

There are still wide leaps among sequential attacks, and hence even with the concentration into these registers, there are a variety of possible ways to hear these measures. Many of the actual melodic steps and leaps, though, remain within an octave, and are differentiated by at least a fifth, creating greater potential to hear horizontal ‘melodic’ connections among pitches. The score makes an effort to emphasize these moments of continuity with phrase markings, which can be seen in Example 4.6:

Example 4.6: Movement II, measures 18-20

As a result of the contraction and expansion of the registration of original pitch collections, the overall texture begins with predominantly ‘punctual’ sounds, moves toward an almost contrapuntal-like middle, and return to the punctual sounds. The change in melodic disjunction does arise from the unfolding structure, but does not lead to a greater understanding of the logic of the work; the recognition is vague, a faint pattern within a bombardment of different musical events. Returning to Adorno’s critique of serialism quoted above, the interplay of continuity and discontinuity between pitches articulates the serialist aesthetics that rebels against the synthesis of perception, recalling Adorno’s position that “[t]he continuum of subjective experiential time is no longer believed to have the power to integrate musical events

and, as their unity, to give them meaning.”²¹² Even in a section that might have a vaguely contrapuntal quality, individual voices are not experienced.

Within the Hegelian context where melodic and subjective unity are closely intertwined, the systematic departure from the flow of subjective time resists the ‘integration’ and synthesis of experience and one moment becomes disassociated from the next. Whatever paradigm of time that the *Sonata* relies on, it is not one where a sequence of events can be synthesized into a meaningful expressive unity in the way a melody does in Adorno’s understanding of expressivity. The historical sediment of expressive dramatic singing, which for Adorno was consummated and legitimized in the symphonic form, is all but absent, and with it, the expressive subjectivity and its temporal flow. Yet this aspect has not been simply subtracted from the work in an effort to forget the past. Discontinuity is a compositional variable, and so there is not a mere negation of subjective time, but a repression.

Unconscious and Conscious Motivic Relations

Adorno’s account of the temporality of serialism did not merely describe it negatively, as the destruction of traditional expressivity. As I mentioned earlier, the Freudian model of the ego-id distinction between the conscious and the unconscious includes a temporal aspect. The psychoanalytic model hints at a different sort of static character than the myriad senses of ‘static’ music that can be found in Adorno’s writing.²¹³ The idea that serial music accomplished a dissociation of time via its ‘traumatic shocks’ ties directly into Freud’s own musings on the position of time on the ‘outer surface’ of the psyche. In his *New Introductory Lectures on Psychoanalysis*, Freud explains that “[t]here is nothing in the id that corresponds to the idea of time....”²¹⁴ Rather, it is on the layer of the self closest to reality where time emerges. Time is

²¹² Adorno, *Philosophy of New Music*, 50.

²¹³ Smith points out that for Adorno, even moments of Beethoven’s music are ‘static’ in their own way, as does Berg. Stephen Decatur Smith, "Awakening Dead Time: Adorno on Husserl, Benjamin, and the Temporality of Music," *Contemporary Music Review* 31, no. 5-6 (2012).

²¹⁴ Sigmund Freud, *New Introductory Lectures in Psycho-Analysis*, trans. James Strachey (New York: Norton, 1965 [1933]), 92.

“introduced into the ego by the perceptual system...”²¹⁵ Thus, in contrast to Bergson’s assertion that spatial juxtaposition is the most social and intellectual state of thought, Freud finds that it is “...the dream-work” that “changes temporal relations into spatial ones and represents them as such” while time remains at the surface.²¹⁶ When Adorno says, then, that serial music “immerses itself in the unconscious depth of its structure, in the historical fate of its consciousness of time,” he is channeling a Freudian analogy wherein the shock of serial music penetrates the unconscious, into a place where Freud says that time is transformed into space.²¹⁷ Adorno’s comment quoted above that “...the seismographic record of traumatic shock ... becomes the technical law of music's form” is a claim regarding the shift towards a static character temporality that is revealed by an analysis of that trauma that lies within the unconscious.²¹⁸ As I will develop below with respect to Goeyvaerts’s *Sonata*, however, there is one element still undeveloped in Adorno’s schema. If the ‘analyst’ is able to give a precise interpretation of the ‘record of traumatic shock’ in the description of the ‘law of the music’s [serial] form, this is not the only experience of this shock. Within the dream itself, the [musical] subject, however vaguely, grapples with the contents of the ‘unconscious depths of its structure.’ To follow the musical analogy further, there is not only a precise analytical deposition, but also a ‘narrative’ description of the often confusing, disorienting surface of the memory of a dream.

In *Beyond the Pleasure Principle*, Freud reiterates his view of time using his more formalized language of the perception-consciousness composite, *Pcpt-Cs*, which constitutes the outer shell of the psyche: “...our abstract idea of time seems to be wholly derived from the ... working of the system *Pcpt-Cs*. and to correspond to a perception on its own part of that method of working.”²¹⁹ Freud adds to this, however, the surprising idea that “This mode of functioning

²¹⁵ *Ibid.*, 95.

²¹⁶ *Beyond the Pleasure Principle*, trans. James Strachey (New York: Norton, 1961), 31-32.

²¹⁷ Adorno, *Philosophy of New Music*, 142.

²¹⁸ *Ibid.*, 37.

²¹⁹ Freud, *Beyond the Pleasure Principle*, 32.

may perhaps constitute another way of providing a shield against stimuli.”²²⁰ Ordering the myriad stimuli of the world with time shields the self against traumatic shock. This shield is presumably created by giving some coherence and order in conscious perception through a filtered abstraction of temporality. This somewhat obscure operation of Freud’s system may seem distant from Adorno’s philosophy until it is noted that Walter Benjamin picked up on this issue as well. Benjamin offers one explanation on how time might be a shield against stimuli. In his essay on Baudelaire, Benjamin speculates on the way time is used as a defense from shock: “Perhaps the special achievement of shock defense may be seen in its function of assigning to an incident a precise point in time in consciousness at the cost of the integrity of its contents. This would be a peak achievement of the intellect; it would turn the incident into a moment that has been lived (*Erlebnis*).”²²¹ The temporally clarified intellect, then, consolidates a multiplicity of stimuli into a particular past event in order to protect the psyche from the bombardment of the outer world. Were something shocking enough to break through this protective layer, it would enter into the deeper layers of the psyche in a traumatic manner. Here it is useful to recall that Freud’s definition of trauma relies on the topographical contrast between outer and inner, with time one element of the protective shield between the two: “We describe ‘traumatic’ as any excitations from outside which are powerful enough to break through the protective shield... a breach in an otherwise efficacious barrier against stimuli.”²²² When Adorno describes the traumatic shocks of late Webern, he is invoking an image where certain musical events break through time in order to be recognized. His list of melodic, formal, and harmonic discontinuity does not arise from the stasis of mere immanence, but of a stasis of anxiety which is interrupted by particular musical moments of shock, opening up the atemporality of the unconsciousness.

Adorno’s use of the Freudian schema for the damaged subject of the mid-twentieth century employs the polarity between the conscious and the unconscious to approach a similar polarity within serial music: the surface awareness of a small number of musical details which

²²⁰ Ibid.

²²¹ Walter Benjamin, "On Some Motifs in Baudelaire," in *Illuminations*, ed. Hannah Arendt (New York: Schocken Books, 1968), 163.

²²² Freud, *Beyond the Pleasure Principle*, 33.

force their way into consciousness and the structure of the work as a whole, which remains unheard. The failure of the discourse between Adorno and the composers at Darmstadt was a mutual failure to take this polarity to its conclusion. On Goeyvaerts's side, and presumably other composers as well, his emphasis on compositional technique obscures the subtle audible consequences of the piece. On Adorno's side, taking for granted the emphasis on composition also made him overlook the ways in which integral serial works contained more than a fetishized rationality. Perhaps part of this oversight arises because Adorno did not fully appreciate that the particular mode of rationality he described through the psychoanalysis was not a rejection of semblance, but a shift from the semblance of expression to the semblance of a new characterization of the subjective.

As a radicalized 'disposition' of the atemporal unconscious, serial music takes up a new mode of semblance. The notion that serialism is the maximization of variation, in which every moment is highly determined and concentrated into works of immense density, changes the nature of motivic recognition. Repetition of motivic material no longer guarantees an expansive clarity and a synthetic grasp of the self-identity of a musical idea. Patterns emerging out of the serial process may sound vaguely familiar, or enter into relationships with other patterns that are contingent on the attention of the listener or performer: a mode of musical experience akin to dreaming.

Adorno, however, does not take these issues as a consequence of the radical innovations of post-Webernian compositional technique. Instead, he explains the nature of the saturation of motivic material as the consequence of a historical trajectory directing changes in musical form. Illustrative of the questionably sweeping character of his thought, Adorno's narrative about the development of sonata form in *Philosophy of New Music* captures much of his view on the historical element of temporality and subjectivity and their relation to music: in the classical moment, the development section was a relatively small, and the return of the themes in the recapitulation functioned as mere repetition. In Beethoven the principle of development expanded to the point where the entire form became caught up with the 'development' of the thematic content, since formal repetition always develops the thematic idea, even outside of the 'Development section' proper. Thus in Beethoven, "music is no longer indifferent to time, for in

time it is no longer arbitrarily repeated; rather it is transformed.”²²³ The further along this expansion of development goes (into Brahms), “the empty course of time becomes ever more threatening” since a work that was comprised of only developmental material would leave no structural framework in which to contextualize the thematic moment.²²⁴ This framework is necessary for Adorno because it gives context and meaning to the theme and its development—which are in turn the loci of subjective expression in the melodic structures. Without form, the content would not speak. Serialism is the culmination of this historical trend. At this stage, the totality of development destroys the differentiation that was able to articulate the expressive thematic moment and its temporal process of becoming. “Music is only able to ward off the empty dominion of time as long as development is not total, only as long as something not altogether subjected to development, a—Kantian, as it were—musical thing-in-itself, is given a priori.”²²⁵ With his assertions regarding the always-needed context of musical material, asserting the thematic *ding-an-sich* is Adorno's means of vouchsafing the role of melody in his understanding of the musical content, which in turn rests on the relationship between subjectivity and objectivity in musical composition and how this relationship changes over the course of history. Serial music, in its concentration of material with little repetition, stands in a critical position to the traditionally expansive development of thematic material: “The critique of the temporally extensive schema is bound up with that of the content: phrase and ideology.”²²⁶ The unprecedented concentrated organization of serialism “prohibits the superfluous and turns against that temporal extension that has been the basis of the conception of the musical work since the eighteenth century, certainly since Beethoven. A single blow strikes the work, time, and semblance.”²²⁷ The increased complexity of the processes behind serial music sever the relationship Adorno found in earlier music between the experience of the musical work and the compositional logic that was to unify the music, the composer, and the listener into the same

²²³ Adorno, *Philosophy of New Music*, 47.

²²⁴ *Ibid.*

²²⁵ *Ibid.*, 47.

²²⁶ *Ibid.*, 34.

²²⁷ *Ibid.*

spiritual dialectic of temporality. To deny the deep connection among these different forms of subjectivity negates the shared premise of subjective time, both within the work and within the listener. The clearest way that this temporality was negated was to deny the coherence and clarity of thematic material over against transitional or developmental material. The consequence, however, is not mere negation, but of fragmentation: each note, each rhythmic pattern or contrast in dynamics or articulation is, following the integral serial logic, derivative of the larger process as a whole.

In contrast to past music, the unfolding of Goeyvaerts's *Sonata* does not present itself audibly as the development or transformation of a basic thematic idea in serial music. Rather, the global plan of the work as a whole directs each moment—an unveiling rather than an unfolding. This 'subtraction' of the semblance of becoming from the musical experience is a major historical shift that Adorno attributes to serialism in general, and becomes more pronounced in integral serialism. What remains after musical becoming is rejected is a highly concentrated style without expansion or development. In this style, the music does not develop a thematic idea through varied repetition or variation, but connects every moment to a "virtual theme," the absent locus of organization.²²⁸ If, in serialism, the pre-compositional material directs the work, it no longer functions within the work in the way themes did in eighteenth and nineteenth century music. As Adorno says, "...Once variation becomes total the possibility of musical transcendence vanishes; once everything is equally absorbed in variation, a 'theme' no longer remains."²²⁹ The musical thickness that results from the avoidance of development or repetition of material no longer guarantees the semblance of becoming, and thus even of completion. As already mentioned, the extreme concentration of material without extensive elaboration or development "prohibits the superfluous and turns against the temporal extension that has been the basis of the conception of the musical work since the eighteenth century, certainly since

²²⁸ In his discussion of the athematicism of serial music, Campbell approaches the idea of the virtual, non-repetitive theme as a topic within Boulez, Leibowitz, and Webern. Adorno's own engagement with these three figures suggests that Adorno's assessment of non-repetition in serial music arises from the same discourse that Campbell identifies among the composers. See Campbell, *Boulez, Music and Philosophy*, 154-63.

²²⁹ Adorno, *Philosophy of New Music*, 80.

Beethoven.”²³⁰ Adorno understood Schoenberg’s compression of detail as a main reason for the composer’s historical significance. For Adorno, an essential element of serialism was the rejection of the elaboration of material, of thematic development. As an integrally serial piece, Goeyvaerts’s *Sonata* takes the historical trajectory of serialism to its next stage. Nominally, and with respect to the consistency of certain elements such as timbre, the *Sonata* retains the coherence of a musical work. However, the unity of its particular work-character is not guaranteed by any experience of completion—the work’s whole does not grow developmentally into an organic unity. There is no thematic development that can be articulated as the defining drama of the work that gives it meaning. It stands as a work, but one that is distinct from past musical works because it does not offer any illusion of a dialectically temporal process of unified becoming.

One of the biggest consequences of connecting all musical patterns to the serial construct is that any event now contains a trace of relation, a potential quasi-thematic quality that relate to other moments of the piece. These quasi-motives, the single pitches, moments of silence, particular gestures do not call to mind a memory of a concrete theme, but rather a vague recollection or relationship. Totalized variation demands that all musical stimuli ‘break through’ perception, but this is parried by the perceptual effort to grasp discrete moments as more significant than others. The formal law of trauma, as Adorno frames it, describes a continual conflict between the density of the work impinging upon the psyche and the resulting vague recognition produced by attempts at limiting the intensity to manageable motivic elements.

Earlier, I pointed out the way Goeyvaerts’s registration and relative pitch discontinuity organize a certain vague sense of formal contrast, though not one where any motivic repetition could be clearly heard. If the oversaturated variation of integral serialism is understood as a bombardment of stimuli, then capturing this aesthetic experience does not mean capturing motives and themes as clear and concise objects—things in themselves—but of relating vague moments together without making them clear events to be distributed on a timeline. Clarifying the temporal connections among moments is the task of the ‘analyst,’ yet the experience of these

²³⁰ *Ibid.*, 34.

moments remains with the listener for whom only certain musical events penetrate into one's attention.

As Sabbe's analysis shows, the middle two sections of the *Sonata* are based on a process of rotation through ten versions of two seven-note collections—that is, not heptachordal pitch class sets, but the same group of pitch classes varied by registration.²³¹ Each of these heptachords share two 'pivot' notes, D# 3 and A5, while varying the registral distribution of the other pitches as a function of the process of the piece. The auditory consequence of this process is not a clear sense of the integral system, even though the same two groups of pitches are repeated continuously. But even without that structural clarity, it is still possible that the experience of pitch repetitions can be gathered together in moments of rapid repetition, followed by moments of relative sparseness.

The overall repetition of any pitch does not capture the manner in which the registral fixing, serialized dynamics, and serialized duration emphasize or obscure these repetitions. There are moments that emphasize pitches in an almost motivic sense, but not one which posits any developmental or causal relation, even when their repetition is caused by the structure of the movements. In the supersaturated serial texture, the recognition of D# alone becomes motivic, but not developmental, and only vaguely suggestive of the larger process at play.

The most striking example of this is the pivot of the palindrome that occurs in the *attaca* moment between the second and third movements. From the 'transcendental' perspective, it is analytically clear at this moment that D# is not merely an organizational marker in the seven-note groups, it also functions in the larger system of rotation and marks an important formal structure, the center pivot in the formal palindrome. However, while Sabbe reveals how theoretically pure this process is, the audible consequence is obscured—the musical event, the analytically clear and obvious transition from the second to the third movement, is not an equally clear moment of audible significance. What is audible is the distribution of locally increased repetition; that is, groups of D# gathering together in certain moments that do not reveal anything about their deeper mirror-relation that defines the compositional process. Since each of the ten

²³¹ Sabbe, *Karlheinz Stockhausen... Wie Die Zeit Verging...* 7-9.

Pivot D#

(eighth note = 84) (eighth note = 168)

D# Collections

Example 4.7: mm. 22-25, movement II through mm. 1-3, movement III. Distribution of D#3

pitch collections contains a D#3 and A5, their presence is quite audible, but never within a consistent motivic or even intervallic context.

The relatively frequent repetitions of D# within the transition between the two movements, shown in Example 4.5, becomes relatively audible because of the fixed registration and the heightened repetition due to the unfolding palindrome-like process. The recognition of this pitch repetition does not lead to the audible recognition of the process as a whole, even though its repetition offers a moment of stability in contrast to the disorienting complexity that surrounds it.

The note becomes motivic merely by its repetition in the same register and, in many cases, a similarly relatively loud dynamic. While it is true that D# plays a special role in Goeyvaerts's system, any pitch could potentially play a motivic role for a listener, especially those pitches that are emphasized by the serialized processes of dynamics, articulation, or duration. Every note is a potential motive, dependent on the listener's attentiveness to particular threads of repetition. Even silence could fulfill this function. The supersaturation of thematic material, which Adorno argued was contiguous with the development of the concept of variation in late Romanticism, plays these moments of recognition against the broader experience of discontinuity, at the expense of the identity between subjective synthesis of the musical process and the clear experience of the passage of time. There is nothing beyond the particular pitch that

can be pinned down as a formally significant motive, nothing that could be audibly more decisive, even if it might happen to be the case that listeners would more likely latch onto the D# because of its relative prominence.

Conclusion: 1966 Panel Discussion on Time

Adorno's pessimism and negativity were central to this historical perspective, which may have been another element of contention between him and the young serial composers at Darmstadt. But serialism, of course, was not the only music Adorno negatively critiqued. Adorno's philosophy of music is in fact a typology of musical failure, and so what is most interesting, then, is not always that he believed some music succeeded or almost succeeded.²³² Rather, it is the substance of his critique—the nature of the musical failure at hand—that offers insight into any specific work. A close reading of Adorno's critique of Schoenberg and Webern from this perspective reveals insights into music and time that did in fact anticipate a number of central aesthetic conditions that were manifested in the integral serialist works of the early 1950s (a perspective the philosopher himself asserts in a note to the fifth edition of his *Philosophy of New Music* published in 1969, though his would hardly be an authoritative voice in the matter).²³³ Adorno's insights are veiled behind an acerbic critique, but they are not dismissive. To be sure, there are moments of misunderstanding, or at least weak interpretations of certain aspects of serial technique in Adorno's writing. Adorno's interpretation of the row as basically melodic seems especially problematic for his arguments, and empirically questionable. Indeed, his expressive conception of melody as a linear, almost linguistic construction also reveals a bias

²³² No composer lived up to Adorno's musical-philosophical hopes. Music fails, fundamentally, in many ways. In some sense, Adorno saw in music the sedimented failure of capturing the name of God. Even beyond this 'negative theology', few works—and certainly no composer's oeuvre as a whole—satisfied his hopes of music's potential to fully capture the dialectic of its historical moment. "What music says is a proposition at once distinct and concealed. Its idea is the form [*Gestalt*] of the name of God. It is demythologized prayer, freed from the magic of making anything happen, the human attempt, futile, as always, to name the name itself, not to communicate meanings." "Music, Language, and Composition," in *Essays on Music*, ed. Richard Leppert (Los Angeles: University of California Press, 2002), 114.

²³³ *Philosophy of New Music*, 163.

that categorically opposed large intervals that characterize much of Goeyvaerts's *Sonata*.²³⁴ Yet ultimately this negativity can be read as the only affirmative artistic statement that is possible at the historical moment they found themselves after World War II. Adorno's three 'symptoms'—the destruction of harmony, melody, and formal coherence—are sedimented in Goeyvaerts's *Sonata* in a more complicated manner than was accepted by Adorno or later scholarship.

Adorno's efforts to describe serialism's confrontation with musical time relied on two strategies. The first was to contrast the subjectively guaranteed temporal continuity of 'traditional' music with the active negation of that continuity in serialism. The second was to evaluate that discontinuity from the perspective of what Adorno saw as the historically contemporary subjective moment to serialism, the Freudian psyche. The success of Adorno's narrative about the nature of time or of subjectivity is a matter of philosophical rather than musicological debate, but it is notable that as his ideas developed, and as he engaged with a group of composers more attuned to positivism than psychoanalysis, Adorno's description of empty time shifted from one concerned with subjectivity to a contrast between musical and 'empirical' time.

Adorno's basic assertion remained the same: his demand for some sort of musical continuity, whether in melodic form or motivic development served as the basis of his critique of serial music throughout his career. In its manifestation in the late 1940s and early 1950s, the extent of influence of his ideas was difficult to gauge. Later, however, it seems that certain elements of his thought did have some presence in the thought of composers. In 1966, Adorno participated on a panel discussion at Darmstadt on "time in new music." Gyorgi Ligeti joined Adorno, along with the German composer Herbert Brün (1918-2000), and German musicologists Rudolf Stephan (b. 1925) and Wolf Rosenberg (1915-1996). The panel was a preparation for a conference on music and time, and grew out of the resonance between two earlier talks by Adorno and Ligeti on musical form. Their discussion focused in part on what both composer and philosopher felt to be a central problem with musical aesthetics of the previous two decades: the "slackening of temporal coherence" within serial and electronic music.²³⁵

²³⁴ Ibid., 57-58.

²³⁵ Theodor Adorno, György Ligeti, Herbert Brün, Wolf Rosenberg, and Rudolf Stephan, "Internes Arbeitsgespräch (1966): Zur Vorbereitung eines geplanten Kongresses mit den

In this later context, Adorno does not express concern for the loss of subjective time in the same framework as his earlier writing, but it remains a theme. On this panel, as well as in other places, such as his 1961 lecture *Vers une musique informelle* and in *Aesthetic Theory*, ‘empty’ time seems to become synonymous with the time of reality, the ‘objective’ or ‘empirical’ dimension of physical existence. Whereas Adorno’s perceived opponents before the 1950s seemed to call for a psychoanalytic perspective, the rationalization of time via science and positivism by the 1960s called for a simpler description. In *Vers une musique informelle* Adorno reiterates many of his most significant arguments about musical time and its contrast with empirical time: “The objective time-factor in all parameters and the living experiential time of the phenomenon are by no means identical,” a thesis he reinforced a few years later in the panel discussion on time.²³⁶ Rather than making the effort to vilify empty time, Adorno later simplifies his argument to emphasize the inconsistency of equating the temporal phenomenon with the physical phenomenon: the heard sound versus the frequency of vibration, the counted time span versus the felt duration. Interestingly, in his comments in the 1960s, Adorno turns to the theory of Ernst Kurth as one positive description of the musical object over above the objective phenomenon, though later in the discussion he fails to hide his Hegelian commitment: “I think that it is the case that the subject has already had to pass through the music in the tone-phenomenon, so the sound is already spiritual; and so it is a mistake to want to derive the so-called material of the music from physical conditions in this ahistorical and asubjective way.”²³⁷

Themenschwerpunkt 'Zeit in der Neuen Musik,'“ in Heinz-Klaus Metzger and Rainer Riehn, *Musik-Konzepte: Darmstadt-Dokumente. I* (München: Edition text + kritik München, 1999), 314.

²³⁶ Theodor Adorno, "Vers Une Musique Informelle," in *Quasi Una Fantasia: Essays on Modern Music* (New York: Verso, 1992), 312.

²³⁷ Metzger and Riehn, *Musik-Konzepte: Darmstadt-Dokumente. I*, 320. “Also ich glaube, daß man es in der Musik wirklich mit dem durch das Subjekt bereits hindurchgegangenen Tonphänomen zu tun hat, also dem Ton als einem bereits geistigen, und daß es ein Denkfehler ist, wenn man glaubt, die Musikals aus einem sogenannten Material in diesem ahistorischen und asubjektiven Sinn aus gewissermaßen physikalischen Gegebenheiten ableiten zu wollen.” Adorno’s comments about Kurth are spread throughout his work, but see his 1931 essay on Kurth’s work, “Eine Musikpsychologie,” *Gesammelte Schriften 19*, (Frankfurt am Main: Suhrkamp, 1970), 349-358.

Rather than accepting the emptiness of serial temporality as the fate of Western music, Adorno found a more crystallized argument against the identity between physical and experiential musical time that he felt would serve to re-imagine the possibilities of musical time outside of the traditional modes of semblance. Adorno's persistent critique of this element of serial aesthetics produced one of central philosophical views on musical time that the avant-garde was confronted with.

In retrospect, it is notable that Goeyvaerts's and Adorno's interpretation of stasis combines in Slavoj Žižek's perspective. In one of his critiques of postmodernism, Žižek champions certain aspects of Christian theology through the lens of Marx and Lacan, specifically the dialectical relationship between the disruptive event with respect to the orderly structure. "'Eternity' is not atemporal in the simple sense of persisting *beyond* time; it is, rather, the name for the Event or Cut that sustains, opens up, the dimension of temporality as the series/succession of failed attempts to grasp it. The psychoanalytic name for this Event/Cut is, of course, *trauma*. Trauma is 'eternal'; it can never be properly temporalized/historicized, it is the point of 'eternity' around which time circulates."²³⁸ In a single gesture, Žižek unifies a number of diverse themes that composers had at one point or another proposed in isolation. The eternal of Messiaen and Goeyvaerts, Stockhausen's 'time slice' are now retrospectively unified with the psychoanalytic characterization of trauma that Adorno described, originally in opposition to eternity. This solution illustrates the centrally discursive nature of the original contention: at the heart of the problem were not simply the music and its character, but of the assessment of the historical and theoretical meaning.

²³⁸ Slavoj Žižek, *The Fragile Absolute – Or, Why is the Christian Legacy Worth Fighting For?* (New York: Verso Books, 2000), 96.

Chapter 5: Messiaen and Eternity

The significance of the topic of time to the mid-century avant-garde was due in no small part to the influence of Olivier Messiaen. As became clear with respect to the Bergsonian threads among these composers, Messiaen's eclectic interest in a wide variety of intellectual inspirations provided a considerable amount of philosophical background to his pedagogy. More central to Messiaen's thinking than the philosophy of Bergson, though, was his devotion to Catholicism. His faith greatly shaped his view on time, especially the relationship between time and eternity. As the extensive scholarship on Messiaen's views on time and eternity continually struggles with, the relevance of the concept of eternity in the broader understanding of the avant-garde discourse on time, even its validity as an interpretive tool, remains problematic for a variety of reasons.¹ The concept itself is unwieldy. If the nature of the eternal is ultimately a religious question, its relevance outside strictly theological discourses is unclear.² Further, it is difficult to distinguish 'eternity' from mere 'timelessness,' either in the scientific sense of objective space-time dimensionality, or from an idealist position in which time is merely an illusion.³ Finally, there is not actually a theological consensus as to the meaning of eternity that can guide the

¹ Andrew Shenton, "Observations on Time in Messiaen's *Traité*" in *Oliver Messiaen: Music, Art, and Literature*, ed. Christopher Dingle and Nigele Simeone (Burlington, VT: Ashgate, 2007); Ian Darbyshire, "Messiaen and the Representation of the Theological Illusion of Time," in *Messiaen's Language of Mystical Love* (New York: Garland Publishing, 1998): 33-51; Benedict Taylor, "On Time and Eternity in Messiaen," in *Olivier Messiaen: The Centenary Papers*, ed. Judith Crispin (Newcastle on Tyne: Cambridge Scholars, 2010); Diane Luchese, "Olivier Messiaen's Slow Music: Glimpses of Eternity in Time" (Dissertation, Northwestern University, 1998); Michael Peter Chandler, "'At the Still Point of the Turning World': The Relationship between Time and Eternity in Messiaen's *Quatuor pour la fin du temps* (1941)" (Dissertation, University of Kent, 2006); Paul Griffiths, *Olivier Messiaen and the Music of Time* (Ithaca, N.Y.: Cornell University Press, 1985).

² Griffiths, *Olivier Messiaen and the Music of Time*. Even if music scholarship is necessarily ambivalent about the relevance of theological concepts, there is also room for theology proper to approach Messiaen's music. See Jeremy Begbie, "Theology, Music, and Time," (New York: Cambridge University Press, 2000.)

³ Ian Darbyshire, "Messiaen and the Representation of the Theological Illusion of Time." Palle Yourgrau, *A World without Time: The Forgotten Legacy of Gödel and Einstein* (New York: Basic Books, 2005); J. Ellis McTaggart, "The Unreality of Time," *Mind* 17, no. 4 (1908).

interpretation of Messiaen's perspective. There are in fact a number of senses of eternity, and their conflation has inhibited scholarship in its attempt to grapple with how this concept might relate to his music, and also to what extent it influenced the ideas of the avant-garde composers who studied with Messiaen. In sum, the difficulty is that Messiaen's sense of eternity is neither something to be taken for granted as self-evident, nor is it to be dismissed as a personal dimension to his music that has no broader relevance. Eternity is at once a useful and problematic concept that sheds light on Messiaen's concept of rhythm and his pedagogical influence.

The general notion that music can be thought of in a timeless manner is not uncommon: more recent scholarship tending toward "neo-Platonic" music ontology considers musical patterns in their atemporal character, and Bonds points out that spatial conceptions of music, even including Schenker, have often relied on an atemporal perspective to understand large-scale formal organization.⁴ Messiaen, though, asserts that "to name eternity is to affirm the existence of God."⁵ This specifically Christian dimension adds a theological aspect to the contemplation of 'timelessness': that particular musical techniques might be vehicles for the ascent of the human mind to God, and that this transcendental level is not merely rational abstraction. Messiaen's concern with eternity sought the musical conditions that could be related to specifically religious eternal transcendence.

If these issues shaped Messiaen's thought, they do not thereby cohere into a single concept with clear and consistent musical implications. His discussion in his posthumous *Traité de rythme, de couleur, et d'ornithologie* suggests a certain stability of meaning, but there are important tensions underlying Messiaen's implicit and explicit understanding of eternity. In Messiaen's theory and practice, a number of different philosophical, theological, and musical ideas were woven together into a general aesthetic concern for music that attempted to upset the

⁴ Peter Kivy, "Platonism in Music," *Grazer Philosophische Studien* 19(2011); "Platonism in Music: Another Kind of Defense," *American Philosophical Quarterly* 24, no. 3 (1987); Mark Evan Bonds, "The Spatial Representation of Musical Form," *The Journal of Musicology* 27, no. 3 (2010).

⁵ Olivier Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, vol. 1 (Paris: Alphonse-Leduc, 1996), 7.

unreflective experience of time passing. While there are, I will claim in this chapter, a number of different senses of eternity, these myriad ideas do coalesce into a small collection of fairly consistent meanings. In order to clarify Messiaen's position, I will articulate three general formulations of eternity that are particularly relevant to the composer's music and pedagogy. First, the most prominent sense of eternity within Messiaen scholarship relies on a metaphorical relationship between eternity and musical stasis. This notion grows out of the Thomistic tradition of thought wherein human knowledge of the eternal begins with the experience of stillness, taking the familiar mode of programmatic musical content in connecting stasis with eternity. Second, Messiaen suggests at certain points that his music is supposed to invite a direct experience of ecstatic transcendence—a feeling of eternity—that basically reduces down to a particular psychological state. Thirdly, there is an implicit but important sense of eternity understood from the Augustinian and Franciscan notion, for which music provides a rational cognitive ascent to the eternal divine life. These three different senses of the eternal, what I will call throughout the metaphorical, the psychological, and the rational, are significant for understanding Messiaen's music and his influence on the avant-garde discussion of music and time, due to the way in which they articulate and differentiate certain compositional techniques and their effects on musical experience. Each sense of eternity functions differently in Messiaen's music, and these differences help to contextualize similar concepts that are found in his students, notably Goeyvaerts and Stockhausen. The first section of this chapter reviews a number of scholars' approaches to Messiaen's metaphorical sense of eternity, in order to show that such a version is ultimately too limited because of a fundamental tension between musical rhythm and stasis. Similarly, I critique the psychological sense of eternity as basically falling back into a use of metaphor, not for musical stasis, but for certain types of experiences. The third, 'rational' sense of eternity, I argue is most productive in understanding the significance of eternity for Messiaen's most general stylistic character. To illustrate this productivity, I will discuss 'Île de feu I' from *Quatre études de rythme* from a perspective inspired by the Augustinian position in which music provides a mode of rational ascent to the eternal.

Metaphorical Relation to Eternity

While differing in detail, most scholarship on Messiaen's notion of eternity reaches a general consensus that the relationship between certain musical techniques and the eternal is

somehow a metaphorical or programmatic one. Although this description does not capture the entire situation, it is still very useful and historically valid. The Thomistic relation between time and eternity, which is Messiaen's most visible source of ideas, relies precisely on an engine of metaphor. This concept, wherein certain musical patterns present an image of the eternal, is scattered throughout Messiaen's music, interviews and writings, but an especially focused discussion of eternity opens the first volume of the *Traité*.⁶ Here Messiaen begins with a summary of Thomas Aquinas's discussion of time and eternity before moving on to other perspectives on time. The specific passages from Thomas that Messiaen discusses are not those that grapple with the epistemological foundations Thomas uses to explain how human knowledge can capture truths about divinity. But as I will show below, the issue of eternity, and notably the historically different concepts of number, is decisively related to the manner in which human knowledge can reach an understanding of divine eternity through analogy and metaphor.

The metaphorical relationship between certain musical works and eternity is also attractive because the role of metaphor has been central to the scholarly approach to Messiaen's other extra-musical inspirations as well. Robert Fallon has most thoroughly discussed this topic by way of the operative notion of mimesis through which Messiaen engaged with birdsong. Fallon touches on a number of significant theories on music signification that are relevant to the composer's treatment of extra-musical content.⁷ His reliance on a reconstruction of Messiaen's own sense of mimesis, however, brings to light a centrally problematic tension within the historical meaning of time and eternity I will expand on later. Notably, Fallon recognizes the significance of Bonaventure and the neo-Platonic influence on Gothic notions of realism that function in Messiaen's music and writings, but also accepts the Thomistic elements of Messiaen's thought as he follows the composer's own syncretic method. However, with respect to the concept of eternity in particular, there is a notable difference between the Thomistic and neo-Platonic meaning of eternity, differences that Messiaen did not clarify for himself with respect to his music. With the question of eternity, and perhaps only with this question, the

⁶ Ibid.

⁷ Robert Fallon, "Messiaen's Mimesis: The Language and Culture of the Bird Styles," (Dissertation: University of California, Berkeley, 2005).

mimetic system Fallon reconstructs falls short. For, if eternity describes a quality of the divine, it remains an open question as to what characteristic of the mundane world would be able to evoke the eternal. At the heart of this tension is the question of number, and by extension, rhythm. The Thomistic contrast between time and eternity relies on an Aristotelian interpretation of number that differs from the neo-Platonic one. For the former, the numbering of time was opposed to an unchanging stillness, whereas for the latter, the numbering of time was itself the aspect of human reality that pointed toward the eternal. Re-applying all this to Messiaen's concern with rhythm reveals the difficulty in the concept of metaphor that must be approached from outside Messiaen's direct influences.

In order to escape this tension, it is necessary to find a place to stand some distance away from the problem, and this site is well provided by Nelson Goodman's theory of exemplification.⁸ Exemplification in Goodman's sense is not merely a theory of symbolism, nor of mimesis, but draws attention to the relationships that emerge when two things share particular qualities that can be brought together by interpretation. Goodman's thought is especially useful in clarifying Messiaen, because as I will demonstrate below, many other recent studies of Messiaen's essentially programmatic depiction of eternity rely on a Goodmanesque sense of metaphor. In Goodman's framework, musical patterns 'express' feelings, ideas, or qualities, through a 'metaphorical exemplification' that establish connections between the musical and the non-musical. These connections are driven by the act of interpretation that is, as Anthony Newcomb summarizes, "an effort to convince the reader ... to see (and hear) certain relationships [as] illuminating and meaningful."⁹

Goodman's notion of metaphorical exemplification clarifies the conditions of symbolic relation between an idea and its musical expression: some act of reference to a shared property, a verbal discourse that aides in the selection of certain relationships, or other technical means of referring to a particularly relevant property of the musical symbol, all help to create the

⁸ Nelson Goodman, *Languages of Art: An Approach to a Theory of Symbols* (Indianapolis: Hackett, 1976). See also Anthony Newcomb's application of Goodman's thought to music. See Anthony Newcomb, "Sound and Feeling," *Critical inquiry* 10, no. 4 (1984).

⁹ Newcomb, "Sound and Feeling," 638

metaphorical leap into the music.¹⁰ Whether it is a question of ‘sadness’ or ‘bird song’ or even ‘eternity’ in a musical context, the basic action is to place a secondary meaning onto the musical patterns in the same way a linguistic metaphor juxtaposes two previously unrelated, but resonant senses with some shared quality. This theory is useful because it potentially incorporates a diverse set of relations between the musical and the extra-musical: the emotional expression or programmatic depiction of any number of genres, from the sixteenth century madrigal to the nineteenth century tone poem, all function at a general level through a sort of metaphorical exemplification of their interpreted content.

The generality of Goodman’s theory of metaphor helps to set the metaphorical concept of eternity in Messiaen on clear footing. Even though Messiaen was not at all influenced by Goodman, the relevance of metaphor for Messiaen’s concept of eternity is reinforced by Thomas’s own discussion. As Benedict Taylor points out with respect to Messiaen, Thomas also uses a metaphorical model in his approach to time and eternity: “Just as Scripture describes God metaphorically in bodily terms, although he is not a body, so it describes eternity in temporal and successive terms....”¹¹ And as Sander Van Maas points out, Messiaen himself frames the ascent to God in the similar way. Describing the religious thrust of his opera *Saint François d’Assise* and his understanding of Thomas’s idea of truth, Messiaen explains that “what I try to express...is this: music may carry us toward God by means of symbol and image....”¹² Precisely how ‘symbol’ and ‘image’ provides a vehicle to the divine depends on many factors, both within the music and within the theological mode of interpretation.

¹⁰ See Goodman, *Languages of Art*, 85-95.

¹¹ Benedict Taylor discusses this passage briefly: Taylor, “On Time and Eternity in Messiaen,” 261. Thomas Aquinas, *Summa Theologica*, vol. 1 (New York: Benziger Bros., 1947). Book I, Section 10.

¹² Brigitte Massin and Olivier Messiaen, *Olivier Messiaen: Une Poétique Du Merveilleux* (Aix-en-Provence: Alinéa, 1989), 191. Quoted in Sander Van Maas, *The Reinvention of Religious Music: Olivier Messiaen's Breakthrough toward the Beyond* (New York: Fordham University Press, 2009), 28.

In Thomas's interpretation of this mode of symbolism, the one Messiaen seems most deeply have grappled with, the way we gain knowledge of the eternal is through a type of exemplification:

As we attain to the knowledge of simple things by way of compound things, so must we reach to the knowledge of eternity by means of time, which is nothing but the numbering of movement by "before" and "after." (...) Now in a thing bereft of movement, which is always the same, there is no before or after. As therefore the idea of time consists in the numbering of before and after in movement; so likewise in the apprehension of the uniformity of what is outside of movement, consists the idea of eternity.¹³

Borrowing extensively from Aristotle, Thomas's relationship between time and eternity relies on the particularly Aristotelian formulations of 'number' and 'movement,' without which Thomas's definition of time seems oddly oversimplified. In fact, as I will show later, it is precisely on the concept of number and the numbering of time that Thomistic and Augustinian senses of time and eternity diverge. If Messiaen's ideas about time and eternity are integrally wrapped up in his concern with rhythm, then this small divergence leads to very different musical consequences.

In formulating his relationship between time and eternity, Thomas is not claiming that a thing bereft of motion is actually eternal, for he also points out that even things at rest are measured with time because of their potential to move. Nor is he actually claiming, as it appears on the surface, that we gain knowledge of eternity from the concept of time itself. Rather, the apprehension of the non-moving gives us the idea of the unchanging eternity of the divine: stasis is a metaphor for timelessness in general, but ultimately (via a dialectic that continues along in this section of the *Summa Theologiae*) it describes the unchanging, permanent and uniform God.¹⁴ It should also be noted that Thomas has no interest in an esoteric or ephemeral notion of eternity here: one gains knowledge of the divine through a rigorous process that moves from empirical evidence to more general conclusions. Differing from the mystical approaches to understanding the divine, his theological method seeks to shed light on the way our concepts of the divine are formed through observation via human faculties.

¹³ Aquinas, *Summa Theologica*, 1, 40.

¹⁴ Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, vol. 1, p. 7. Here Messiaen selects texts from *Summa Theologiae* and Commentaries on the Physics of Aristotle.

Since musical patterns, even patterns that might be considered “static” in some context, are measured out in temporal duration and sequence, it is not meaningful to claim that music can, in a literal sense, stop time. Rather, musical patterns exemplify stasis through a lack of differentiation within any particular sphere: non-progressive pitch relations, suspension of metric pulse, lack of articulations, sustained notes with no melodic movement at all. Stasis is always relative to forms of musical activity. None of these musical elements, it should be noted, are truly in stasis with respect to the passing of time itself—or even motion, in the Aristotelian sense of potentiality. Time passes regardless, and even a sustained note or repeating pattern will fill out the time through which it is extended. Patterns with certain undifferentiated qualities can, though, motivate or reinforce an idea of the unchanging nature of the divine by interpreting a lack of differentiation as ‘stasis.’

This metaphorical connection between a lack of differentiation leads to the image of eternity in many different ways. One useful result of Goodman’s interpretation of metaphor emerges here: the consequently selective relation between the meaning and the symbol is not exhausted by a single compositional technique or analytical perspective. When theorists, composers, and critics use a notion like “static,” for example, they might be describing a number of possible musical techniques that evoke “stasis.” There are in fact a variety of different compositional techniques that come to the same Thomistic consequence: that relative lack of contrast within any particular musical parameter can be interpreted as an opposition to time. Further, what distinguishes the varieties of stasis is as much the musical techniques as it is the analytical commentaries by various scholars and by Messiaen himself.

Siglind Bruhn and Diane Luchese offer analyses based on this logic that are worth briefly rehearsing, in order to illustrate this diversity of possible interpretations. Bruhn’s analysis of the ninth of the *Vingt Regards sur l’Enfant-Jésus*, ‘Regard du Temps,’ illustrates this metaphorical approach well. In the opening measures, Bruhn contrasts a ‘time’ motive with an ‘eternity’ motive, each motive calling to mind a particular set of religious symbols.

IX. Regard du temps

(Mystère de la plénitude des temps; le temps voit naître en lui Celui qui est éternel...)

Modéré (♩ = 88)

16^a (Canon rythmique)

PIANO

mf

pp

m. dr.

pp

pp

16^a bassa

dr.

m.g.

mf

16^a bassa

*

Example 5.1: Messiaen, *Vingt Regards sur l'enfant Jésus*: IX *Regard du temps*, m. 1-8. Bruhn's 'Time' theme in mm. 1-2 and 'Eternity' theme in canon, mm. 3-6

Bruhn associates the first theme's characteristics—relatively clear homorhythmic texture, its *mf* dynamics, its tonal anchoring on B and E with a relatively large collection of perfect 5ths, and a range aligning with vocal tessituras—with human temporality. The second theme, by contrast, exemplifies the eternal through canonic texture, tightly organized and symmetrical rhythm, tonal ambiguity, challenging harmony and extreme registral range: “Messiaen's musical interpretation makes use of all conceivable compositional parameters to illuminate two extreme points within

the 'fullness' [of time]: human, subjectively and emotionally perceived, measured time, versus divine, all-encompassing, objective hierarchical eternity."¹⁵ Bruhn's analysis does not make explicit the precise nature of the relationship between music and time. It is her analysis, and not the music itself, that would necessarily "illuminate" the concepts, to continue her metaphor from the manuscript tradition, by surrounding the musical 'text' with programmatic imagery that clarifies its meaning. Following Messiaen's suggestions that he offers in his own description of the *Vingt Regards*, Bruhn takes the metaphorical mode of interpretation to its conclusion.¹⁶

Luchese supplies a slightly different approach by accepting both the static and dynamic characteristics of Messiaen's at once, embracing them as a paradoxical tension between the flow of music and the feeling of stasis. Her formulation of this paradox remains tied to, as she herself summarizes, the "metaphorical expression of eternity" in Messiaen's music.¹⁷ Here, metaphorical expression works within a variety of musical elements to neutralize "the possibilities for dramatic conflict, which are analogous to the drama of earthly life."¹⁸ From this position, Luchese is able to argue that certain musical forces function analogically as eternal insofar as they inhibit traditional methods of musical development.

In her analysis of Messiaen's "Desseins eternels" of *La Nativite*, Luchese shows how its melodic construction "reflects time through its overall melodic progression while also reflecting eternity through its atmospheric treatment of harmony and timbre and its unchanging elements."¹⁹ "Desseins eternels" is comprised of a single, extremely slow, melody constructed from the repetition of a small collection of motivic ideas. Luchese argues: "The melody unfolds as a paradox: we can hear a series of smaller units marked off by the process of developing *variation*, yet due to subtleties in the way that Messiaen develops his "basic shape," we can also

¹⁵ Siglind Bruhn, *Messiaen's Contemplations of Covenant and Incarnation: Musical Symbols of Faith in the Two Great Piano Cycles of the 1940s* (New York: Pendragon Press, 2007), 207.

¹⁶ Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, vol. 3.

¹⁷ Diane Luchese, *Olivier Messiaen's Slow Music: Glimpses of Eternity in Time*, 10.

¹⁸ *Ibid.*

¹⁹ *Ibid.*

hear a self-similar whole *devoid of contrast*, or to use Messiaen's words, 'a single, satiated phrase.'"²⁰ Luchese identifies a principle tension within the exemplification of eternity in music: there is no literal stasis, but there is a feeling of it. In this particular musical case, there is a well thought out method of development, yet the differentiation or contrast within the variation is subtracted. Although she illustrates this paradox with a particular musical example, Luchese goes further and takes these qualities as general stylistic attributes that can be heard in much of Messiaen's music, and ties a number of different compositional variables to this style. Not only melodic construction, but harmony, rhythm, tempo, and a number of other musical elements can contribute to music with clear but essentially homogeneous development.

It is important to note that the Christian conception of eternity is not the exclusive interpretation of stasis that is relevant to Messiaen. By way of contrast, Ann Stimson's analysis of Messiaen's "static" music takes an entirely different approach.²¹ Rather than emphasizing the Thomistic Catholicism of Messiaen's compositional techniques, she points to the influence of Buddhism on the Japanese aesthetic that influenced Messiaen and some of his students.²² It is illustrative of the metaphorical relationship between music and time that interpreting 'stasis' from a Buddhist perspective is equally informative with respect to musical patterns and compositional decisions. Is the Christian eternal more valuable than the Buddhist stasis for the interpretation of Messiaen's music? Perhaps for Messiaen, the Christian eternal was personally more essential, but within the metaphorical relation between music and eternity, there is no decisive position from which the Buddhist reading can be subordinated and Christian one can be affirmed. The act of interpretation is loose enough to include both, or neither. Metaphor remains a historically contingent mode of interpretation based on the explicit suggestion by Messiaen himself.

²⁰ Ibid., 130.

²¹ Ann Stimson, *Musical Time in the Avant Garde: The Japanese Connection*. (Dissertation: University of California, Santa Barbara, 1996.)

²² See also Timothy Koozin, "Spiritual-Temporal Imagery in Music of Olivier Messiaen and Toru Takemitsu," *Contemporary Music Review* 7, no. 2 (1993).

There is some tension, here, though, with other assertions by Messiaen. Since time was so fundamental issue for him, it would seem to place eternity in a different level than, for example, birdsong, which also operates through a sort of exemplification. As I mentioned in the introduction, Messiaen's makes the claim that composers are dealing as directly with time as philosophers do. In fact, "Philosophers are less advanced in this field [of time]. But as composers, we have the great power to chop up and alter time."²³ As problematic as this comment is, it suggests that Messiaen himself did not fully accept the limitations of the metaphorical approach to the idea of time, or by extension, of eternity. Alternately, Fallon's observation that Messiaen's own conception of musical symbolism allowed for some level of direct *methexis*, or 'participation' beyond the linguistic, would provide a means of dealing with time directly in music. But if this sort of participation is involved, there is a different sense of eternity that is at play: one with a more direct experience of the divine which is not Thomistic or programmatic. The second and third concepts of eternity I will discuss provide this possibility.

Psychological relation to eternity and the experience of ecstasy

Stasis, "standing," is etymologically related to ek-stasis, standing out of, although the theological difference is much greater when it comes to Messiaen. Jan Christiaens, for example argues that Messiaen did not merely want to express a metaphorical idea of eternity, but sought to create transcendental religious experiences with his music.²⁴ The ecstatic worship of God places the self out of itself, in participation with the eternal divine life: a moment of grasping the eternal in worship through the escape or transcendence of the limitations of one's temporal self. Unlike a well-grounded theology of eternity, this mode does perhaps touch on an esoteric, mystical sense whose character can only be approached indirectly.

If there is a radical religious experience in which the self transcends time in direct participation with the divine, such a state would be naturally difficult to approach theoretically—such is the nature of the esoteric. It does seem, though, that there is something of a common

²³ Olivier Messiaen, *Music and Color: Conversations with Claude Samuel* (Portland, OR, Amadeus Press), 34.

²⁴ Jan Christiaens, "Sounding Silence, Moving Stillness: Olivier Messiaen's *Le Banquet Céleste*," in *Silence, Music, Silent Music*, ed. Nicky Losseff and Jennifer Doctor (Burlington, VT: Ashgate, 2007).

understanding of the ‘ecstatic’ experience. If the religious content of such an experience is not accessible, it still may be that an ecstatic musical effect can be described from a psychologically informed point. At any rate, something like this effect is called for in the fifth movement of *Quatour pour la fin du temps*, “Louange à l’Èternité de Jésus.” Seen in Example 5.2, the full tempo indication for this movement captures the interestingly problematic issue: *Infiniment lent, extatique* (sixteenth note=44 env.). The juxtaposition of “infinitely lent” with the slow, but finite, tempo indication prompts the question of what a performer would do to evoke the called-for ecstatic musical experience. Here again is Luchese’s paradox: nothing is static in the music, yet the eternal is evoked. It may be that ‘really slow’ could stand metaphorically for ‘infinitely slow’ in the context I described above, but even the ‘really slow’ sixteenth notes occur slightly less than once a second—not slow enough to experience a radically disjunctive or motionless feeling. Or following Luchese further, it may be that the lack of contrast might elicit the sense of eternity. There is also the possibility that the character of the repetition elicits a particular musical feeling, one that could be interpreted as ecstatic.

V. Louange à l'Éternité de Jésus

The image shows a musical score for two instruments: Violoncelle (Cello) and Piano. The score is in G major (one sharp) and 4/4 time. The tempo and mood are indicated as "Infiniment lent, extatique" (Infinitely slow, ecstatic). The cello part is marked "p (majestueux, recueilli, très expressif)" and features a melodic line with slurs and accents. The piano part is marked "p" and consists of a steady accompaniment of triads in the right hand and a bass line in the left hand. A box labeled 'A' is placed above the piano part. The score includes dynamic markings like "p" and "f", and performance instructions such as "ped. (etc.)".

Example 5.2: *Louange à l'Éternité de Jésus*, measures 1-8. NB tempo indication.

“Louange à l'Éternité de Jésus” is a starkly tonal movement, comprised of a piano part which plays almost exclusively triads, accompanying the cello’s flowing, expressive melodies. It is not therefore especially representative of Messiaen’s general harmonic or rhythmic language and is clearly present in the *Quatour* as a contrast to the apocalyptic-inspired fervor of the other movements. In the rare moments when the harmony leaves the realm of major, minor, or diminished triads, the chromaticism is directed in a contrapuntal way toward strong cadences. The initial progression in the piano, for example, moves through three major triads in the opening passage seen in figure 10. The bass line follows a simple step-wise motion and the root relations among the three triads are simply minor thirds.

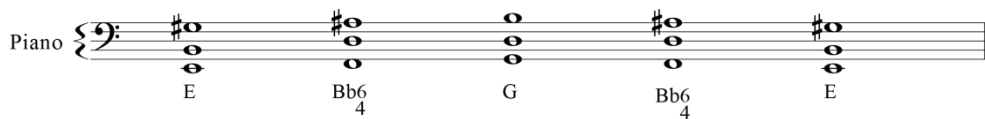


Figure 5.1: *Chord Progression of measures 1-8, Messiaen, Louange a l'Éternité de Jésus*

These chords are not closely related in a common practice context, but the clear voice leading here, and throughout the movement, emphasize the continuity of the slow harmonic alterations. Not unlike the manner of later minimalist transformations of harmony, the long, slow repetition of constant sixteenth notes set the pitch changes into relief, making them all the more striking. The music is marked by repetitive, pulsating, sixteenth notes, brought together by the cello's melody, whose phrases exhibit many traditional means toward forward directionality: motivic repetition, extensive use of stepwise motion, and dynamic fluctuation towards and away from certain points.

With 'Louange à l'Éternité de Jésus,' Messiaen attempts to create an entirely different relationship between music and eternity: there is no stasis in this movement, but ek-stasis: the 'standing-out' from the normal self-possession of time consciousness. Rather than metaphorically exemplify the unchanging eternal, Messiaen works to create a musical experience that approaches ecstatic religious experience. If, in the end this experience must also be interpreted metaphorically, it still is the case that the act of interpretation has shifted from musical construction to musical experience.

Although the ultimate content of the particular religious experience Messiaen desired to create may require the premises of Christian faith, the 'material' basis of this experience as it were—that is, the psychological states of religious, ritual, and meditative practice—can be quantified in certain respects. Bracketing the theological interpretation for a moment, what remains is a psychological state in which a listener's sense of time's passing is altered. In general, the perception of time passing itself is determined by a host of environmental factors, such as body temperature or attentiveness.²⁵ Also, the effect of music on psychological states is becoming better understood, but it has long been observed that highly repetitive music has

²⁵ Dan Zakay and Richard A Block, "Temporal Cognition," *Current Directions in Psychological Science* (1997).

something of hypnotic-like effect.²⁶ As the effects of minimalism, popular dance music, and traditional rituals have received more scrutiny, it seems to be increasingly the case that music can assist in reaching ‘ecstatic states,’ potentially observable altered modes of consciousness involving altered heart rate, endorphin levels and other basic physical conditions, one aspect of which is radically different experiences of time passing. In this context, then, there is a different relationship between music and the eternal. Whereas in certain cases there is basically metaphorical or programmatic relation between musical time and eternity, in this case eternity becomes a mode of interpretation of the subjective response to the music.

This second mode of approaching the eternal still requires an interpretive step to reach the specifically Christian sense of eternal that Messiaen asserts as his guiding concept. There is a decisive shift, however, in what is being interpreted. Above, the metaphorical relation occurred between static, non-directional, or non-moving musical patterns and the conception of an unchanging eternal. In this second stage, the metaphorical relation is between the basic psychic state (whether described physiologically, psychologically, or anthropologically) and the ecstatic religious experience of worship.

While the study of altered states of consciousness may have some significance for musical practices like minimalism, it is unclear to what extent the ‘ecstatic’ had an effect on the ideas of avant-garde composers who studied directly with Messiaen. Again, the contrast to Stimson’s emphasis on Japanese thought is important. As with the metaphorical context, Stimson’s interest in Buddhist influences sets the nature of the discourse into relief. Noting that Messiaen, Boulez, and Stockhausen were interested in Japanese music and its static character, Stimson shows how Eastern interpretations of time are important to the avant-garde discourse. If a musical work such as Messiaen’s *Sept Haïki* does alter the listener’s subjective sense of time, it is just as possible to interpret this from a Buddhist perspective as it is a Christian one.

²⁶ Ronald L Maurer et al., "Phenomenological Experience in Response to Monotonous Drumming and Hypnotizability," *American Journal of Clinical Hypnosis* 40, no. 2 (1997); Csaba Szabo, "The Effect of Monotonous Drumming on Subjective Experiences" (paper presented at the 5th Triennial ESCOM Conference, Hanover University of Music and Drama, 2003); B. B. Bittman et al., "Composite Effects of Group Drumming Music Therapy on Modulation of Neuroendocrine-Immune Parameters in Normal Subjects," *Alternative Therapies in Health Medicine* 7, no. 1 (2001).

The situation in ‘Louange à l’Éternité de Jésus’ seems to be only an occasional instance in Messiaen’s music, and distantly related to the style of music of the European avant-garde. While the meditative, repetitious musical patterns come to play a major role in the religious content of later composers like Arvo Pärt and John Tavener, this style is peripheral to the concept as it relates to the main thrust of Messiaen’s style and influence on the avant-garde.²⁷ In the broader scope of the twentieth century though, this sort of musical experience illustrates the important move out of a merely metaphorical exemplification of stasis into a different music-eternal relation.

Rational notion of eternity and Messiaen’s ‘charm of proportions’

The third conception of eternity is neither merely metaphorical, nor does it rely on a direct mystical or esoteric experience, although it has often been understood as a mode of ecstatic contemplation in its own way. In the tradition of theology inspired by Augustine, eternity is approached via an ascent to the divine through the rational capabilities of human memory and understanding.²⁸ Messiaen’s Thomistic influence has naturally dominated the discussion because it is the central source the composer himself directs us to. Yet scholars have also commented on the curious absence of Augustinian references in Messiaen’s writing—not because they expect a systematic thoroughness on the part of Messiaen, but because of the fact that Messiaen’s aesthetics are very resonant with Augustine.²⁹

While there is very little direct discussion of Augustine in Messiaen’s writings, there are a number of circumstantial reasons for interpreting Messiaen’s music through the lens of Augustinian theology. In his archival research into the content of Messiaen’s courses, Boivin

²⁷ Begbie, *Theology, Music, and Time*.

²⁸ The possibly mystical, or alternately rational Plotinian dimension of Augustine’s ecstatic experiences is a matter of debate. See John Peter Kenney, *The Mysticism of Saint Augustine: Re-Reading the Confessions* (New York: Psychology Press, 2005).

²⁹ Van Maas takes a somewhat ahistorical route through the philosophy of Jean-François Lyotard to connect Messiaen with Augustine: Van Maas, *The Reinvention of Religious Music*. See also Taylor, “On Time and Eternity in Messiaen”; Chandler, “At the Still Point of the Turning World”; Darbyshire, “Messiaen and the Representation of the Theological Illusion of Time.”

mentions that Augustine was one source for Messiaen's understanding of Latin metrics—the topic of Augustine's early *De Musica*, whose main goal is to account for the contemplative ascent to the divine eternal through the appreciation of harmonious order. Messiaen may well have also been familiar with the early twentieth century Catholic philosopher Gabriel Marcel, whose attention to music and its role in theology relied directly on Augustine.³⁰ Another connection can be found in the figure of Bonaventure, a noted voice in Messiaen's theological world.³¹ Bonaventure, a thirteenth-century Franciscan, explicitly appropriates much of the theological ascent towards God that was described in Augustine's *De Musica*, at the heights of which “the eternal is joined with the time-bound man.”³² Within the theology of this Augustinian/Franciscan heritage that Messiaen felt drawn to, it is not the static and changeless that offers an image of eternity, but the fullness of life grasped from a higher perspective.³³ In one of Bonaventure's expositions on Augustine, he summarizes this rationality of the meditative ascent to God: “Judgment...leads us in a ... more immediate way to a surer beholding of eternal

³⁰ Gabriel Marcel, “Music According to Saint Augustine,” *Music and Philosophy*, trans. J.S. Maddux and Robert Wood (Milwaukee, Marquette University Press, 2005).

³¹ Fallon, “Messiaen's Mimesis: The Language and Culture of the Bird Styles.”

³² Bonaventure, *The Journey of the Mind to God*, trans. Philotheus Boehner and Stephen Brown (Indianapolis: Hackett, 1993), 35.

³³ The pivot from the Augustinian form to the Thomistic form can be seen in the version of eternity that Boethius gives, which is the one that Thomas begins his discussion of eternity examining. Thomas defends Boethius to some degree, but only insofar as “life” affords him a chance to reinforce the eternal of the divine over the merely everlasting. It does not, however, find within the movement of life itself a metaphor for the eternal in the way that Boethius and others before him did. For Thomas, “What is truly eternal, is not only being, but also living; and life extends to operation, which is not true of being. Now the protraction of duration seems to belong to operation rather than to being; hence time is the numbering of movement.” Boethius summarizes his view of eternity as the “the total and perfect possession of life without end.” The inclusion of “life” in this definition articulates the crux of the problem. By focusing on life, Boethius captures an important dimension of Augustinian sense of eternity: since the temporal thing “cannot at the one moment possess the total fullness of its life ... it appears partially to emulate what it cannot totally fulfill and express.” Temporality “binds itself to the present, such as it is, of this short-lived, fleeting moment” and “from the simplicity of the present, it subsides into the boundless extent of future and past.” Boethius, *Consolations of Philosophy*, trans. P.G. Walsh (New York: Oxford University Press, 1999), 111. Thomas, *Summa*, First Part; Question 10: The Eternity of God; Article I; Reply to objection 2, p. 40.

truth. For, if judgment has to be made by reason that abstracts from place, time, and change...it is made by a reason which is immutable and without limits in time or space. But nothing is absolutely immutable and unlimited in time and space unless it is eternal, and everything that is eternal is either God or in God.”³⁴ Rather than rely on esoteric mysticism or the image of stasis, Bonaventure’s Augustinian perspective starts from an interpretation of the human mind’s capacity for abstraction and the nature of memory in perception and understanding, what he calls judgment. In the recognition of these capacities as God-given, the Christian would then find within the cognitive abilities of the mind the image of, and potentially participation with, the divine. As Darbyshire points out, something like this context of rational abstraction is the core idea of Messiaen’s interest in palindromic patterns, modes of limited transposition, and other famous theoretical ideas the composer formulated in his writings.³⁵

The Augustinian formulation of time and eternity does not just take into account rational judgment, but also the larger realm of memory.³⁶ At one point in *Confessions*, Augustine writes “...I have come to think that time is simply a distention.... of the mind itself.”³⁷ The mind, finding itself pulled away from the eternal, observes this movement from the divine as time itself. Augustine understands this distention as an important element of the musical experience: “A person singing or listening to a song he knows well suffers a distention or stretching in feeling and in sense-perception from the expectation of future sounds and the memory of past

³⁴ Ibid., 14.

³⁵ Ian Darbyshire, "Messiaen and the Representation of the Theological Illusion of Time." It does not seem, however, that it is accurate to call time an illusion within the Augustinian context.

³⁶ Augustine’s conception of memory is a complex theoretical issue in itself. See for example Hannah Arendt, *Love and Saint Augustine* (Chicago: University of Chicago Press, 1996); Paige Hochschild, *Memory in Augustine’s Theological Anthropology*, (Oxford: Oxford University Press, 2012); Peter Manchester, *Temporality and Trinity*, (New York, Fordham University Press, 2015); Paul Ricoeur, *Time and Narrative*, (Chicago, University of Chicago Press, 1984).

³⁷ Augustine, *Confessions*, trans. Henry Chadwick (New York: Oxford University Press), 240.

sound.”³⁸ The distention of time could be contrasted with the intension on eternity, but an intensive eternal rather than an extensive one:

...leaving behind the old days I might be gathered to follow the One...moving not toward those future things that are transitory, but to the ‘things which are before’ me, not by being pulled apart, but by concentration [non secundum *distentionem* sed secundum *intentionem*]....You are my eternal Father, but I am scattered in times whose order I do not understand. The storms of incoherent events tear to pieces my thoughts, the inmost entrails of my soul, until the day when, purified and molten by the fire of your love, I flow together to merge with you.³⁹

While he treats time most famously in *Confessions* in his investigation of memory, Augustine first approached the connection between time and eternity with none other than music, broadly considered as “the science of the well-measured” in his early writing, *De Musica*.⁴⁰ Using a Pythagorean influenced approach to poetic meter, Augustine described the harmonious dimensions of poetry’s metric structure. It is the well-measured song that leads toward the eternal, by way of a six-fold hierarchy that began in perception and conceptually ascended to the divine.⁴¹

Far from beginning with the perception of static objects, Augustine begins with the paradigmatically most flowing example possible, the musical melody. In a provocative statement in his later *De Trinitate*, Augustine seeks to explain the close relation between time and timelessness in contemplation through *numerositas*, translated by Peter Manchester as ‘numbersomeness’: “...if the numbersomeness of some artful and musical sound passing through

³⁸ Ibid., 245.

³⁹ Ibid., 244.

⁴⁰ Augustine, *De Musica*, trans. Robert Catesby Taliaferro, in *The Fathers of the Church, Volume 4*, 153-379, (Washington, DC: The Catholic University of America Press, 2002), 172.

⁴¹ *De Musica*, 378: “Now all these things we’ve enumerated with the help of the carnal senses, and all things in them, can only receive and hold local numbers seemingly in a kind of rest, if temporal numbers, in motion, precede within and in silence. Likewise, a vital movement measures off and precedes these as they move in time-spans, a vital movement serving the Master of all things, having in its numbers no temporal spans divided out, but with a power providing times. And above this power, the rational and intellectual numbers of the blessed and saintly souls transmit the very law of God ... to the judgments of earth and hell, without toll from any nature between.”

intervals of time were to be comprehended standing without time in some high and secluded silence, it could at least be thought as long as that song could be heard.”⁴² For Augustine, the possession of the eternal does not come from the stasis of perception, but the share of eternity in which our contemplation itself lives, through the number and measure of judgment. The contemplation of time from outside of time directs the mind upward, but begins with the music as heard or played. It is also important to note that the contemplation of the music does not permanently situate the mind in unity with God. It is during the contemplation of music that the human mind begins to appreciate the manner that it is formed in the image of God as a being that can ‘gather together’ some amount of time into contemplation without being completely pulled apart by flowing time. Standing without time is not, then, fully within the eternal, but reveals a preliminary stage of how the human mind can find itself above time, in the silent contemplation of music flowing through time from that higher perspective. This position, standing outside of time in the silence of contemplation, is still an embodied one, reliant on the experience of sound—a gift of grace, Augustine had clarified earlier in *De Musica*: “[N]umbers of this [low] kind, coming to be in a soul given over to temporal things, have a beauty of their own, yet even though they continually effect it by passing away, this beauty is grudged by a Divine Providence...where yet he has not so forsaken us [that] we may not turn back and be fetched again from the delight of the carnal senses... [And so] with a restored delight in reason's numbers, our whole life is turned to God....”⁴³ It is Augustine’s emphasis on both the artful numbering of the sound and embodied perception as the beginning stages of contemplation that provides such an effective explanation of Messiaen’s style. The way in which Augustine brings together a principle of *numerositas* while admitting the necessity of embodied perception captures much of Messiaen’s simultaneous interest in rhythm and theological contemplation. My analysis below clarifies how the performative and perceptual issues that come into play with his

⁴² Peter Manchester, “‘As long as that song could be heard’: Eternal Time in the Trinity of Augustine,” *The Subjective Eye: Essays on Art, Religion, and Gender in Honor of Margaret R. Miles* Princeton Theological Monograph Series 59, ed. by Richard Valantasis, Deborah Haynes, James D. Smith III, Janet F. Carlson, (Eugene OR: Pickwick Publications, May 2006), 60.

Quatre études de rythme illustrate the mutual interaction between embodied and reflective aspects of the Augustinian concept of eternity within Messiaen.

Not all music inspires an ascent to the divine, or even the step out of the carnal senses. Augustine gives particular aesthetic criteria for well ordered music that allows for spiritual contemplation. If Augustine's own aesthetic conditions were supplied by the metrics of the Ambrosian chant tradition of the fourth and fifth century, his general observations are remarkably applicable to Messiaen's own employment of metrics. Throughout the *Quatre études*, there are a number of large, single measure patterns that share a resemblance in size and organization to the poetic structures Augustine analyses. In addition to the well-known 'non-retrogradation' of palindromic patterns that fit these criteria, Messiaen's use of meter creates a number of phrases that form especially coherent musical passages constructed with close attention to proportion.

One of the techniques that recur in the *Quatre études* is the suspension of rhythmic or metric periodicity within certain tightly constructed and somewhat hermetic phrases. In these cases, there is no repetitive pulse that remains constant and the phrase is notated within a single measure, rather than breaking down into smaller units.⁴⁴ The metric organization in these etudes is thus often oriented toward the completion of these large, non-periodic rhythmic groupings that are strikingly contrasted with their surrounding material. As formally cohesive units, they do not acquiesce to metric division, and yet are considerably longer than typical measures in most tonal or even post-tonal music. Often, the formal repetition of these phrases occur in slight variation throughout an etude in ways that emphasize the Augustinian contemplation of proportions as well as the required embodied presence of the passage.

⁴³ *De Musica*, 358.

⁴⁴ This sort of pattern puts into question the alignment between complex metric relations and the feeling of stasis, contra Darbyshire, "Messiaen and the Representation of the Theological Illusion of Time," 37.

‘Île de feu I,’ which opens the four etudes, begins with an exemplary phrase that illustrates the metric issues that permeate all of the etudes. According to Messiaen, this melody is inspired by Papuan culture.⁴⁵

Presque vif
(martelé)

PIANO

f 1 2 3 4 5 6 7 8 9 10

(perçutée)

8^a bassa *p* *mf* *f* *mf* < *f* *sff*

sff > 11 *f* 12

8^a b^a

Example 5.2: Opening Phrase: 'Papuan' Melody. *Ile de feu*, measure 1-2, sequence of attacks notated.

In the opening phrase shown in Figure 5.2, metric movement does not arise from the equality of duration or repetitive subdivision. Instead, contour, relative duration, and the subsequent variations on the theme are what construct a feeling of metric movement. The passage upsets traditional conceptions of meter, but does not do away with the sense of metric flow. Accents, duration, melodic contour, variation, dynamics—a variety of musical forces shapes the direction

⁴⁵ Messiaen offers the following description of his inspirations of the two ‘Île de feu’ etudes: “[These pieces are] dedicated to the Papuans – not Papua New Guineans, as one says today, but the Papuans, that is to say, the entirety of the Papuan people. The Papuans are thought to be savages by many. In reality, they are extremely intelligent; it is simply that their intelligence is different than ours. Their philosophy (which is a magical organization of the world), their initiations, their secret societies, their racial identification with those animals or plants they eat, contain amazing ideas, which are not without terrible violence. It is this violence which has seduced me, and to which I give free course in my two ‘Île de feu’ etudes, especially the second!” *Traité de rythme, de couleur et d’ornithologie*, vol. 3, p. 165 (my translation).

of the opening phrase, at times resonating with each other and at other times entering into conflict, but always focusing attention on its coherence. There is nothing ‘static’ about this selection of music, either metaphorically or perceptually.

The opening phrase is centered around E² in the third, sixth and seventh, and then the final note, which creates a series of smaller melodic gestures of departure and return. The move from the second to third attack clearly exemplifies something like a contoured directionality; similarly the sixth attack is approached through anacrusic 16th notes. The ascending 6th from G to E that completes the phrase is another case where the contour creates a forward moving gesture towards a cadential point, this time emphasized by the first bar line of the piece and the completion of the left hand activity. While the intervallic content is not progressive in a clearly tonal sense, the relative duration of the E pitches and the preparatory gestures preceding them create an E-centeredness that emphasizes some notes over others. In Figure 5.1, one reading of the metric directionality toward E is illustrated with arrows showing an emerging metric hierarchy based on duration and anacrusic gestures.

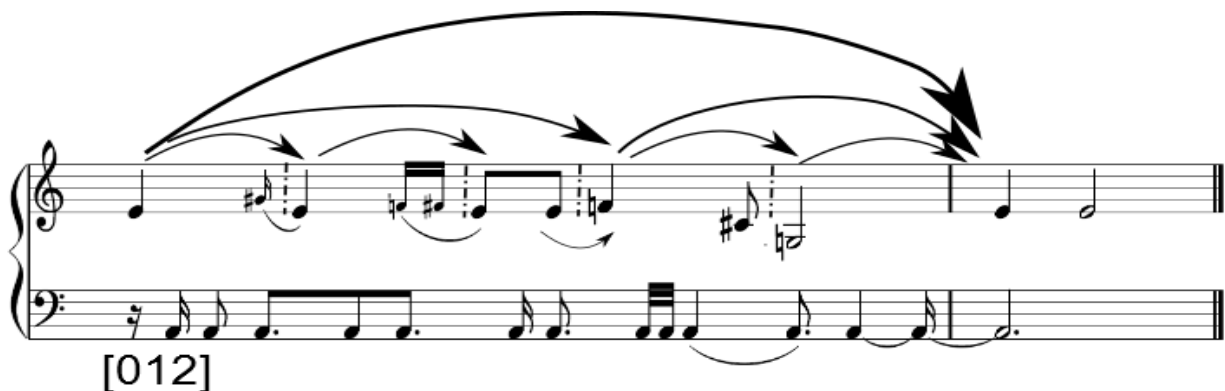


Figure 5.2: Opening Figure: Proportions and Metric Directions⁴⁶

Simultaneously, the forces of directionality are countered by other musical elements that upset these metric suggestions. The interaction between strong metric motion and ambiguous, non progressive moments is in constant play. The durational proportions illustrate this multi-stable situation. In this etude, there is no notated time signature, but it is notable that if the

⁴⁶ In his own descriptive analysis, Messiaen offers this left hand rhythm, which is a simpler notation than in the score, with the annotation pointing out the Hindu rhythmic motive. See *Traité*, vol. 3, p. 124.

smallest sixteenth note subdivision is taken, the time signature would be 29/16, the tenth prime number. When the sixteenth note count of the second bar is included, the total sixteenth note count of the opening figure comes to 41, the thirteenth prime number. The prime number of the total duration makes any attempt at dividing this unwieldy passage result in uneven groupings. There are, however, twelve attacks (an appropriately Christian quantity), with metric emphasis reinforced by relative duration. These attacks do not have any metric periodicity except for the smallest subdivision of the 16th note, which at the tempo of *Presque vif*, would not be felt as a metric pulse.

The durations of the opening figure leads to the grasping of its unevenness – an anti-evenness perhaps. This unevenness is the phrase’s central characteristic. What unevenness implies is a comparison, a greater than/less than juxtaposition of parts. A performance of this passage demands a focused concentration on measuring the rhythm with 16th notes, and the durations of each note contrasted with the notes preceding and following. Measuring the durations reveals the figure’s *numerositas*, its numbersomeness. The experience of the pattern necessarily occurs in the contemplation of proportions from a perspective of a present moment (the final E) that holds the entire group in the memory of an extended now. These proportions not only give something of a metric hierarchy (when the lengthened notes are coupled with the pitch contour) but come together as a single musical event, a hermetic phrase with beginning, middle and end that can be contemplated upon its completion. In this particular context of metric motion, the proportions constitute a somewhat radical unity: a unity of a long present moment. The lengthening of the present does not occur by positing a static form, but by establishing a metric hierarchy of beats that extends—or perhaps more precisely distends—the present until the unambiguously strong downbeat of the second notated bar. The music demands a corresponding lengthening of memory of the immediate past, the perdurance or retention of the full measure of the melody.

The length and unity of this phrase recalls the ascent through Augustine’s levels of number to the divine in a few ways. In *De Musica*, Augustine established a criterion of scale for the well-executed musical work: that it should be “articulated into different numbers whatever was in a time-stretch by means of moderate intervals convenient to the human senses.”⁴⁷ There

⁴⁷ *De Musica*, 351.

was for him a requirement for well-measured music to stand within the time frame of experience, which Augustine illustrated with his favorite hymn tune, *Deus Creator Omnium*. What these time frames might look like in the twentieth century, however, is less clear, but the *Quatre études* include many metric figurations that approach phrase lengths in older musical styles.



Figure 5.3: Proportions of durations that form palindromes, *Ile de feu m. 1-2*

A second aspect of the durational patterns is the palindromic moments that make up much of the passage, seen in figure 5. According to Messiaen, his famous non-retrogradable rhythms are supposed to ‘charm’ the mind towards religious contemplation. “[I]n spite of himself, the listener will submit to the strange charm of impossibilities: ...a certain unity of movement (where beginning and end are confused because identical) in the nonretrogradation, all things which will lead him progressively to that sort of *theological rainbow* which the musical language, of which we seek edification and theory, attempts to be.”⁴⁸ And, in the diagram of the left hand pattern Messiaen gives in his own analysis, he brackets the third, fourth and fifth attacks in the left hand as an example of a Hindu rhythmic pattern that exemplifies his attention to palindromes. Additionally, in the right hand, there are three moments where the rhythmic pattern contains palindromes (marked with thick brackets in Figure 5.2.) Yet Messiaen’s explanation of palindrome patterns, that the “beginning and end are confused because identical” is unsatisfactory. Time prevents any such confusion. Sequential order is not confused by the identity of duration. What remains true in Messiaen’s thought is that the “unity of movement” –

⁴⁸ Messiaen, *Technique of my Musical Language*, 21.

as it is held in the memory, reunites what has been distended temporally. The ‘charm’ of palindromic patterns is more effectively justified by an Augustinian interpretation of proportion and numerical relations that, for a variety of different ‘artful and musical’ reasons, supply the retention of the pattern over the span of the primary experience.

The opening phrase is repeated in variation a number of times in the etude. Each time, different musical elements affect how the metric relations among durational values suggest or suppress directionality. In addition to the proportionality in the durations, the articulations and tempo help to create a consistency that unifies the passage. The right hand, with the melodic figure, is marked *martelé* (hammered) with a forte dynamic, with the left marked *percuté* (‘collidedly,’ crashed into) with a stepwise increase in volume through the active left hand rhythm. Because of the rhythmic complexity, the very low registration and clustered sonority, the left hand material acts as a ‘ground’ for the right hand ‘figure.’ Each attack in the right hand is something of a shock, whose significance is not fully grasped until the intensity has subsided in the final half note and quarter note. Rather than experiencing these shocks as metrically accented continuations, they more immediately act as new beginnings, destroying the closure of what came before by the ever new. This destruction is not a forgetting, however. With the closure suspended by the shock of the next attack, the final attack with its especially long duration is all the more complete an ending. The entire figure is oriented toward that completion, held in mind as a long temporal unit. The duration of the passage allows what Augustine had called the ‘high stillness’ of contemplation, leading the temporality of the passage to be viewed from outside.

On one hand, the drama of the *martelé* indication obfuscates the delicate metric hierarchy that seems to emerge with the melodic contour and quantitative comparison. On the other hand, there is something of an intense homogeneity that arises from the violent figure that opens up to another level of comparison among the notes. The figure-ground relation of right and left hands clarifies the melodic line to such an extent that in some sense the passage as a whole is ‘hammered’ into the mind. From this perspective, the attacks disrupt a projective sense of meter but emphasize the contemplation of the proportions and overall relations at the completion of the passage.

There is a second aspect of the left hand that affects the perception of relative emphasis. Only at certain moments do the accents in the left hand align with the attacks in the right. The

three alignments occur on the second, fourth, and seventh right hand articulations, which seemed from the view of contour and duration to act as anacrusis figures in the metric flow. An accented anacrusis creates something of an ambiguity, since it upsets the distinction that meter implies. The performance of the dynamics in the right hand now take on an additional significance, since the reinforced second attack is still at a lower dynamic in the right hand than the ‘downbeat’ of the third right hand attack. The following reinforced upbeat figures gain even more emphasis.

All of the elements of this opening passage affect the relative strength of directionality within each variation. The contour of the right hand, along with the quantitative proportions of each attack gives the phrase elements of metric flow. The disruptive inequality of durations, the strong articulations, and the reinforcement that the left hand gives to the anacrusis figures attempts to drown out that flow. What results is an initial shock with a metric flow that does not reinforce any sense of equal pulse. The metric directionality occurs over the span of the entire figure. While there are points of varying emphasis, it condenses, or concentrates, into a unitary figure beyond the normal coherence of a balanced phrase.

The repetition of this phrase with slight variations offers an opportunity to return to the passage in different ways, from different perspectives, each time getting a slightly different metric constitution. These repetitions of the initial material sometimes change the metric emphasis, although the basic proportions remain generally consistent. The additional material in each repetition enable alternative perspectives on the figure: in measures 5 and 6, a blackbird song partitions the phrase, highlighting a different hearing; in measure 11, a truncated version alters the function of the fifth and sixth notes; and measures 20-22 once again reframe the phrase using new material as a different lens to the proportions of the figure. The formal repetition of the initial figure expands the Augustinian notion that such contemplation requires embodied perception.

In Augustine’s above statement from *The Trinity*, the contemplation of an ‘artful musical sound’ occurred ‘as long as the song could be heard.’ Manchester has interpreted this thought as the necessary embodiment of the initial stages of an ecstatic perception, which then leads towards the contemplation of the eternal.⁴⁹ This interpretation is illuminating when approaching the repetitive character of this etude. The repetition of this figure with slight variations offers an opportunity to return to the passage in different ways, from different perspectives, each time getting a slightly different metric constitution. These repetitions of the initial material sometimes change the metric emphasis, although the basic proportions remain generally consistent. The additional material in each repetition enable alternative perspectives on the figure: in measure 5 and 6, a blackbird song partitions the phrase, highlighting a different hearing; in measure 11, a truncated version alters the function of the fifth and sixth notes; and measure 20-22 once again reframe the phrase using new material as a different lens to the proportions of the figure. While any phrase in general may give the opportunity for ecstatic contemplation, the formal repetition of the initial figure expands the Augustinian notion that such contemplation requires embodied perception.

Example 5.3 Measure 5-6 Bird song

⁴⁹ Manchester, “As Long as the song could be heard,” 65-67.

In the second statement of the A material in measure 5, seen in Example 5.6, a bird song (which Messiaen describes as a blackbird in his analysis) divides the *martelé* figure into three sections. Additionally, the left hand takes the melodic figure, creating a different texture and clarity to the phrasing. The birdsong itself is divided into three brief statements that each end with the same melodic cadence (labeled in figure 14 as a,b, and c), defined by giant leaps outlining an [0,1,6] trichord for the first and last, and an [0,1,3] for the middle. The rhythm of the second cadence figure is also reversed. The beginning and ending of the three sections of the bird melody align with emphasized moments of the opening phrase, reinforcing the metric emphasis that was initially suggested by the contour and durations, shown by dotted lines.

There is a slight difference however, which adds another ambiguity to the retrospective understanding of the subtlety of the initial phrase. The elongated cadential figure after the second birdsong accents the high B, which reinforces the C# attack in the left hand. Like the reinforcing left hand attacks in the initial section, what seems initially to be an anacrusis is reinforced by another voice, creating a shift in emphasis. The eighth and ninth attack, however, could both serve as a downbeat, thereby putting into question intuitions about the direction of the line. Messiaen thus offers a new perspective about the orientation of the meter in the passage, without changing the melody itself.

Example 5.4: *Ile de feu I*, 'harmonized' variation, measures 10b-12

The third statement of the opening figure is truncated to include only the first seven attacks. This also occurs in the last statement in measure 35. In both cases, the two final eighth notes seem to function as pickup figures to dramatically different material. By setting up an expectation of fulfilling the initial pattern, then moving on to something different, these two eighth notes gain a clear anacrusis function as the etude unfolds. In measure 11, the 'head'

section of the opening figure is given the somewhat cryptic marking of *resonance*, which is suggestive of the textured harmonization of the initial melody by another [0,1,6] trichord three octaves above. This texture is absent only on the two sixteenth-notes. These sixteenth notes, which had been established as the beginning of a relatively directed movement through the two eighths, are now marked by an even stronger disruption. Furthermore, the abrupt ending after the eighth notes suspends the retrospective consideration of their anacrusis character to some extent. With these alterations, some of the directionality of the whole passage is shaved off, allowing the pattern to ‘resonate’ without moving too soon or too strongly to the next moment. This sentiment is reinforced by the indication, *Tres modéré, lourd*: very moderated and heavy, in contrast to the initial *Presque vif*. The various alterations of this shortened version change the metric function of many of the notes, giving a third perspective on the numerical relationships of the pattern. In this way Messiaen is able to offer different senses of the figure, different possibilities of enriching or disrupting the metric flow.

Tres modéré, lourd

m.20

(dr. dessus)

m.21

m.22

E

Example 5.5: Measures 20-22 Directed figures and reduced left hand rhythm

The fourth statement of the main line, also *Tres modéré, lourd*, contains a full statement of the melodic durations, with an extended ending. Unlike the third statement's static heaviness, the responsorial sixteenth note figures after each main attack (circled in Example 5.8) highlight the quantitative and melodic emphasis of the important metric attacks. And while the blackbird song in the second variation reinforced the melodic contour with a parallel melodic figure, each smaller figure in measure 20 emphasizes the durational extension of each note, focusing the experience of the continuation of each of the durations. As with the very first statement of the opening figure, the seventh attack on the second of the eighth note pair is reinforced with the left

hand accent, in an essentially identical clustered harmony and four octave voicing.⁵⁰ The altered ending is a melodic extension created from fragments of the melodic figure, echoing the 8th, 9th and 10th attacks, then the 2nd and 3rd attacks moving to the cadence at measure 22 with the four-octave E. This final cadence is connected to the g-e sonority at the beginning of the second staff which is simply a ‘harmonized’ penultimate attack of the first melody. Even with this extension, there is a clear direction to an ending cadence. With all of these forward gestures, this section is perhaps the most directed statement of the opening melody.

These details of the metric construction of *Île de feu I* are connected to Messiaen’s exposition in *Technique of my Musical Language* in spirit, but these earlier ideas in unconvincing language: do we really ‘confuse’ forward and backwards in a palindrome, as he says? Is there any doubt about the direction of time or the sequence of events? However, the basic concept, grounded with Augustinian roots, does give a more productive way of approaching Messiaen’s legacy: that the organization of musical patterns is not experienced in time, but above time, in the retention of patterns in human perception. It also seems that this final sense of eternity, rather than that of mere metaphor or an esoteric sense, encompasses the most consistent and relevant aspect of the theological traditions Messiaen brought to the discourse of time for the avant-garde.

Conclusion

Messiaen’s direct influence on the avant-garde is often represented by these *Quatre études*, especially the integrally organized “Modes de valeurs et intensités.” Indeed, Goeyvaerts and Stockhausen were personally inspired by this piece and were validated in their own pursuits, which had already taken similar trajectories. While Goeyvaerts and Stockhausen are not known for extensive theological inspirations with respect to their theoretical writings in the same tenor as Messiaen, these two composers shared their Catholic faith with Messiaen and each other. Stockhausen’s *Gesänge der Junglinge* was famously based on Biblical text, and Goeyvaerts’s *Mass* of 1968, while well distanced from his serial style, reflected a persistent presence of faith in his works well after his serialist phase. The biographical connections—Goeyvaerts was the god-father of Stockhausen’s first daughter, Suja—also suggest that their relationship was marked

⁵⁰ See Messiaen’s discussion of the transformation of the left hand rhythmic pattern. *Traité*, vol. 3, p. 123-124.

by a certain mode of post-War Catholic faith. The extent to which their faith led them down the same theological paths as their teacher Messiaen is difficult to determine, but the resonances among their ideas suggest that the eternal retained a theological connotation.

As I discussed earlier, Goeyvaerts understood his integral serial technique in terms of, as he said, “‘static music’, i.e. music conceived as a projection in time and space of a basic idea generating the structure.”⁵¹ Goeyvaerts was Catholic, but only hints at the religious character of the logical organization.⁵² Sabbe and Toop greatly expand this notion and illustrate that some sort of Christian numerological spirit was at play for the composer.⁵³ Also, I noted that Christiaens brings to light Goeyvaerts’ contemplation of hierarchical being that are almost explicitly neo-Platonically Christian. At the top of this scheme Goeyvaerts places “absolute ‘Being’: immobile.’ At the second level is the general structure of the composition, and at the lowest level he places the concrete composition as it exists in time and space...”⁵⁴

It is unclear from these glimpses into Goeyvaerts’s thought that the composer was concerned for the same sense of eternity as Messiaen. There is nothing in the experience of the music, it would seem, to lead the mind upwards from time and space to the eternal structure. Even so, while Goeyvaerts’s own ideas fit very much within the issues of time and eternity that Messiaen framed, the *Sonata for Two Pianos* represents a different trajectory for the discussion of time than that of Messiaen. Messiaen’s rhythmic-numerical interests focused on relatively local durational patterns, while Goeyvaerts expanded this concept to structure a large portion of the work. The palindromes within Messiaen’s music were relatively brief moments, even single rhythmic patterns, which could be appreciated within individual phrases. The palindromic pattern

⁵¹ Karel Goeyvaerts, "Paris: Darmstadt 1947-1956. Excerpt from the Autobiographical Portrait," *Revue belge de Musicologie* 48(1994): 45.

⁵² Ibid.

⁵³ Richard Toop, "Messiaen/Goeyvaerts, Fano/Stockhausen, Boulez," *Perspectives of New Music* 13, no. 1 (1974); Herman Sabbe, *Musik-Konzepte. 19 (1981): Karlheinz Stockhausen... Wie Die Zeit Verging...: Neue Erkenntnismöglichkeiten Der Seriellen Entwicklung Anhand Des Frühen Wirkens Von Stockhausen Und Goeyvaerts—Dargestellt Aufgrund Der Briefe Stockhausens an Goeyvaerts*(München: Edition text + kritik München, 1981).

⁵⁴ Jan Christiaens, "'Absolute Purity Projected into Sound': Goeyvaerts, Heidegger and Early Serialism," *Perspectives of New Music* 41, no. 1 (2003): 170.

that Goeyvaerts employs not only directs the entire middle movements of his *Sonata* and so spans a considerable amount of time, but is doubly obscured by the change of tempo as well as an additional mirroring process that alters the roles of the two pianos and their responsibilities for the heptachordal rotations. Thus, the main issue that faces Goeyvaerts's 'hierarchy of Being' is the difficult connection between the abstract structure and temporal realization of the composition.

Stockhausen was influenced by both Messiaen and Goeyvaerts, though the scope of this influence is often understood merely in terms of the development of integral serialist technique. This technique brought with it a concern for abstract, atemporal structures that were realized in the time of performance. Like Goeyvaerts, this concern for the static was circumstantially tied to a concept of eternity that echoed a theological inspiration. Stockhausen's version of moment form is perhaps the most famous use of the 'eternal' in the avant-garde discourse on music and time after Messiaen. Stockhausen writes that eternity does not "begin at the end of time, but ... is attainable in every moment." As such, there are musical forms "in which ... every present counts ..." and in which "the concentration on the now ... makes ... vertical slices which cut across horizontal time experience into ... eternity."⁵⁵ This often-quoted passage contains a number of different ideas which, in the attempt to clarify what Stockhausen means by 'eternity,' complicates matters. The statement deserves close attention. First, Stockhausen distinguishes a concept of eternity that does not 'begin at the end of time.' Here Stockhausen's Catholic thought shines through: Christian eschatology is dependent on the vision of apocalypse, which is essentially a transition between two temporal paradigms: the first, a history moving from the past into the future toward its completion, and then the second, the manifestation of the divine everlasting. Further, Stockhausen's opposition to the 'end of time' also relies on the theological notions that lead into the tension within the concept of 'static music.' Here Messiaen can be heard in the background: there are actually two movements in the *Quatour pour la fin du temps* which touch directly on time: the eternity of Jesus, and the immortality of Jesus, neither of which are

⁵⁵ Karlheinz Stockhausen, *Texte zur Elektronischen und Instrumentalen Musik* 1, ed. Dieter Schnebel, (Cologne: Verlag M. DuMont Schauberg: 1963): 198-199. Translated by and Quoted in Christopher Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1997): 297. See also Jonathan Kramer, "New Temporalities in Music," *Critical Inquiry* 7 no. 3 (Spring 1981), p. 549.

synonymous with the return of Jesus at the 'end of time.' It seems clear that Stockhausen attempts to clarify these differences, even though outside of the Christian paradigm such a distinction would not be necessary.

Second, eternity is attainable at every moment. Presumably Stockhausen does not mean by this that his audience actually transcends time to the fulfillment of the eternal divine life upon hearing his music. Rather, it seems, Stockhausen is moving through a similar theological line of thought as Messiaen did with Thomas and Augustine. There is a special resonance between Stockhausen and Thomas where Thomas discusses the 'now standing still': "The "now" that stands still, is said to make eternity according to our apprehension. As the apprehension of time is caused in us by the fact that we apprehend the flow of the "now," so the apprehension of eternity is caused in us by our apprehending the "now" standing still."⁵⁶ Neither Stockhausen's nor Thomas's claim is entirely clear in itself: what would be the conditions for this now standing still, this vertical time slice? The now that stands still is not simply stillness; the mundane experience of a lack of movement does not lead to any vertical ascent. Such an event must be marked off by an act of interpretation in which consciousness does not look forward into the future, but abides in that extended now.⁵⁷

If some of Stockhausen's works are to be taken as examples of musical 'time slices', then it seems that Stockhausen's main mode of access to the eternal comes through a Thomistic, metaphorical route: that those musical passages which do not contain directed, progressive patterns metaphorically exemplify a static 'now' through an avoidance of forward movement.

⁵⁶ Thomas Aquinas, First Part; Question 10: The Eternity of God, Article II, reply to objection 1, *Summa Theologica* vol. 1, trans. Fathers of the English Dominican Province. (New York: Benzinger Brothers, 1947), 41.

⁵⁷ In addition to Stockhausen's own elaborations on this point, the verticality of certain now moments is a point of departure for Jonathan Kramer's extensive discussion on musical time. Kramer's account of Stockhausen's concept of eternity mainly relies on moments of musical interruption or structures that oppose 'traditional' forward musical momentum of music up until the early twentieth century. Kramer's net is quite broad: examining any sort of 'discontinuity' in terms of musical time allows him to approach a wide variety of musical styles and eras Jonathan Kramer, "Moment Form in Twentieth Century Music," *The Musical Quarterly* 64, no. 2 (1978). Jonathan Kramer, "New Temporalities in Music," *Critical Inquiry* 7, no. 3 (1981); Kramer, "Postmodern Concepts of Musical Time," *Indiana theory review* 17, no. 2 (1996);

Indeterminacy is no escape here: any sequence of unrelated events fulfills the Thomistic-Aristotelian notion of time, and so whether it is a matter of ‘moments’ or of ‘groups’ it is accomplished in the same way. Stockhausen invites the listener to understand these non-relations in a metaphorical way: exemplifying a frozen time, one that does not progress to the next now, and so gives an image of the stasis of eternity. But the next now comes.

John Backus’s scathing critique of *die Reihe*, famous for calling into question the actual scientific content of the Darmstadt journal, ends with the conclusion that “If we boil down *die Reihe* to see what solid content it has...what remains is a microscopic residuum consisting of nothing more than a mystical belief in numerology as the fundamental basis for music.”⁵⁸ I argued in my opening chapter that Backus may be correct in calling the style of *Die Reihe*, including Stockhausen’s work, ‘pseudo-scientific.’ A penchant for numerology, however, is not as meaningless as it might seem. Rather, it points towards the theological dimension of musical thought that was mixed into the avant-garde discourse by Messiaen. Though the theological core of the concept of eternity rests in the personal faith of the composers involved, this does not thereby negate its significance for general scholarship about their music and ideas. As I have shown, there are a variety of musical techniques central to the avant-garde—serialized pitch and rhythm, stark juxtaposition, attention to proportion, for example—that the theological background fostered, if not instigated.

⁵⁸ Backus, 171.

Chapter 6: Existential Temporality in Barraqué's *Le temps restitué*¹

As we have seen, composers who attended Olivier Messiaen's courses would no doubt have confronted the multi-faceted problem of time in music.² It is tempting to speculate that these young composers in the late 1940s and early 1950s, after leaving Messiaen's class for the evening and congregating at Jean Barraqué's Paris flat for wine and discussion, touched on another aspect of time, the temporality of human existence.³ Although Barraqué never attended Darmstadt, his close ties with many of those composers in Paris and his commitment to serial technique placed him in the central circles of the European avant-garde. Barraqué audited Messiaen's course between 1948 and 1952, the same years as Karel Goeyvaerts, Karlheinz Stockhausen, Iannis Xenakis, Yvonne Loriod and others. Along with Pierre Boulez, Barraqué also attended Pierre Schaeffer's class on electronic music during that time, and throughout the 1950s and 1960s, he was involved in the Domaine Musicale concerts with Boulez and Pierre Souvtchinsky.⁴ Barraqué's participation in the developments of his avant-garde compatriots was coupled with his attention to wider trends in twentieth century thought. Studies of Barraqué's deeply intellectual background reveal that he was closely in touch with the philosophical and literary forces of his Parisian world—not least of all Michel Foucault, his lover during the early 1950s.⁵ These two aspects of Barraqué are well-known, but the deep connection between his

¹ A version of this chapter is appearing as "Death, Creativity, and Voice: Jean Barraqué's *Le temps restitué*," *Perspectives of New Music*, 2016. Used by permission.

² Jean Boivin, *Le Classe de Messiaen: Historique, Reconstitution, Impact* (Montreal: University of Montreal, 1992); Olivier Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, 7 vols. (Paris: Alphonse-Leduc, 1996).

³ David Macey, *The Lives of Michel Foucault: A Biography* (New York: Pantheon Books, 1993).

⁴ Paul Griffiths, *The Sea on Fire: Jean Barraqué* (Rochester, NY: University of Rochester Press, 2003).

⁵ Karel Goeyvaerts, "Paris: Darmstadt 1947-1956. Excerpt from the Autobiographical Portrait," *Revue belge de Musicologie* 48(1994); Griffiths, *The Sea on Fire: Jean Barraqué*; Laurent Feneyrou, "La Rêve et L'existence: Jean Barraqué-Michel Foucault," *Dissonance* 73(2002).

serial aesthetics and his philosophical background has not been dealt with thoroughly. By coupling his serial aesthetics to the theme of death, Barraqué offered a strong link between the musical avant-garde and the question of temporality in European thought.

Barraqué's piece *Le temps restitué* for soprano, chorus, and large ensemble (1957) lies especially near to this question, since the source of his text, Hermann Broch's novel *The Death of Virgil*, itself focused on temporal-existential themes. Some of the most striking musical qualities of *Le temps restitué* are also those that most clearly illustrate the implications of Barraqué's musical-philosophical suggestions. In this large scale piece, the creative transformation of vocal texture, the sensitivity to timbre, the porous boundaries among each vocal and instrumental voice, and the expressive vocal gestures and their relationship to the ensemble all stem from aesthetic decisions that can be traced to particular philosophical ideas. My analysis below reveals the way in which Barraqué's treatment of texture and vocal expressivity relates to human temporality as it is shaped by the anxiety of death, specifically by the sense of anxiety as it becomes articulated in Barraqué's acknowledged philosophical inspirations. I argue that with *Le temps restitué*, Barraqué brought his philosophical concern with temporality to bear on his compositional style by a musical manifestation of certain consequences of existential thought—especially of the critiques of the over-determined unity of the self and the forces of dissolution and dispersion at work on human existence.

Contrary to the majority of scholarship on Barraqué, my approach to this musical-philosophical perspective is not primarily concerned with serialism. The most thoroughly discussed aspect of Barraqué's style in *Le temps restitué* and in his other works is the innovative manner in which he deploys integral serial technique.⁶ Like other composers of the 1950s, Barraqué developed different ways of transforming a small initial set of serial rows in order to generate new possibilities beyond the basic permutations. As Bill Hopkins most clearly explains,

⁶ Bill Hopkins, "Barraqué and the Serial Idea," *Proceedings of the Royal Musical Association* 105(1978). Heribert Henrich, *Das Werk Jean Barraqués: Genese und Faktur* (Kassel: Bärenreiter, 1997); "Des Techniques Sérielles Dans Le "Temps Restitué"," *Entretemps* 5(1987); Paul Griffiths, *The Sea on Fire: Jean Barraqué*. This piece has also inspired a 'cybernetic' approach of music analysis. Franz J. Herfert, "Le Temps Restitué in Analytischer Betrachtung, Oder, Von Der Wiederhergestellten Zeit," *Collected Work: Musik-Konzepte*. 82 (1993): *Jean Barraqué* no. 82 (1993).

Barraqué's 'proliferating series' functioned by abstracting the ordinal placement of specific pitches from one of the rows and applying it to one of its permutations. By applying the ordinal patterns of specific pitches, and not intervals, of two different permutations to each other, it is possible to create new rows with different but related intervallic content. To be sure, Barraqué's unique serial system, described extensively by Heribert Henrich as well as Paul Griffiths, Laurent Feneyrou, and Hopkins, is a significant element of the composer's style and a notable contribution to the development of serialism in mid-century Europe. Yet accounting for the composer's serial process does not tell the entire story about the more general decisions that Barraqué was making. My analytical perspective emphasizes that there are other realms of the composer's poetics that deserve attention for their innovative approach, ones which better illustrate how his 'technique must evolve towards death,' as Barraqué wrote—that is, how his music confronts human temporality.⁷ While serialism clearly served as a central compositional procedure, it was not the end in itself for Barraqué. His aesthetic was guided by basic philosophical questions about creativity, temporality, and human existence. These broader aesthetic guides are clearer when examining creative decisions that did not rely on serial processes.

Laurent Feneyrou supplies three especially pertinent facts about Barraqué's interests that greatly assist in framing the composer's writing and music: that during their time together in the early 1950s, Barraqué and Foucault had an appreciation for the thought of Maurice Blanchot, and knew Blanchot's essay on Hermann Broch and *The Death of Virgil*; that Barraqué shared Foucault's interest in Ludwig Binswanger and read Foucault's 1954 introduction to the French translation of the German thinker's *Dream and Existence*; and that Barraqué's other influences included Nietzsche, Heidegger, Freud, Sartre, Proust and Mallarmé, among many others.⁸ Oddly, this immense intellectual background rarely surfaced explicitly in the composer's writings on

⁷ Jean Barraqué, *Écrits* (Paris: Publications de la Sorbonne, 2001), 181. Translations are mine throughout.

⁸ Feneyrou has written a number of essays on Barraqué, was editor of Barraqué's collected writings and has an editorial role in the preparation of the critical edition of Barraqué's compositions. As with Heribert, his discussions rely on thorough research on published and archival material of Barraqué's materials, much of which is held at the Bibliothèque Nationale de France.

music: Barraqué's published collected essays, interviews and lectures are mainly comprised of technical discussions of past composers, especially Debussy, Webern, and Beethoven, with little to say on general theoretical issues of his own compositional approach—a mark of difference between his writings and those of some of his avant-garde compatriots.⁹ Only a small number of notoriously obscure passages reveal that his musical aesthetics were deeply in touch with his contemporaneous philosophical world. But these moments, while brief, still provide evidence of a rigorously worked-through relationship between his music and his philosophical ideas, especially by their consistency with three particularly influential authors: Broch, Blanchot and Foucault.

With respect to the issue of temporality, both Blanchot and Foucault grappled with the ideas of Martin Heidegger, for whom the past and the future are not different realms or independent stages of time, but are horizons of human existence as a whole. One significant point in the complicated reception of Heidegger in France by Blanchot, Foucault, and others revolved around the question of the unity of human existence: does the temporal span of human existence bring about a unity of being; or does the temporal nature of existence work against one's self-identical unity over time, dissolving it, dispersing it into the world?¹⁰ This temporal force of dispersion or dissolution offers a key bridge to the musical issues Barraqué was grappling with. For Barraqué, the theme of death influenced compositional techniques in which the dissolution of unified processes of development offered a productive way out of traditional formal genres. Finding his inspiration in Debussy, Barraqué discussed these concepts in terms of 'open form' and 'discontinuity'—ideas that are tied to the dispersion of the self within related philosophical discussions. The correspondence between the dissolution of the subject in Barraqué's Parisian intellectual world and the dissolution of the unified musical process in his music arises from the mutual concern for creativity and voice within literature, philosophy and music as the self confronts death.

⁹ Barraqué, *Écrits*.

¹⁰ Ethan Kleinberg, *Generation Existential: Heidegger's Philosophy in France, 1927-1961* (Ithaca, NY: Cornell University Press, 2005); Tom Rockmore, *Heidegger and French Philosophy: Humanism, Antihumanism and Being* (New York: Taylor & Francis, 2013); David Pettigrew and François Raffoul, eds., *French Interpretations of Heidegger: An Exceptional Reception* (Albany, NY: State University of New York Press, 2008).

Barraqué, Blanchot, Broch

In an article published in 1969, Barraqué explicitly connects his musical poetics with the anxiety of death: “Music: it is drama, it is pathos, it is death. It is the complete game, the trembling in the face of suicide. If music is not that, if it does not overstep its limits, it is nothing.”¹¹ Also, “there is, in lyricism, a sort of contemplation of death,” and this existential-lyrical contemplation does not lead to a more complete act of personal self-expression, but in it “the composer depersonalizes himself in the act of the creator.”¹² Barraqué’s sense of ‘lyricism,’ of ‘drama,’ his general musical ‘pathos,’ become clear within the post-Heideggerian context of the composer’s intellectual world. Overstepping limits in joyous, lyrical excess while yet becoming depersonalized in the face of death is a concept that resonates strongly with Barraqué’s influences. Similar concepts can be found in Blanchot’s writing, in Foucault’s reading of Binswanger, and they are also central themes on which the author Hermann Broch meditated.¹³ The most telling idea in Barraqué’s suggestive comment on death, however, is the notion of ‘incompletion without end.’ “I believe that the greatest poets — and I say ‘poets’ in the most general meaning of the word: all those who have truly created — for all of them, the final objective is that great anxiety of man, death. All custodians of creation must accept this, as they accept their own deaths. Even his technique must evolve towards death; it must be completed in an ‘incompletion without end.’”¹⁴ The temporality of human existence, oriented toward its future, was the starting point for many thinkers, but Barraqué’s claim that his very technique is directed by the anxiety of death brings the philosophical question to bear on musical composition. Barraqué uses this phrase, ‘inachevement sans cesse,’ in different points in his writings on music and aesthetics. Alone, its meaning is obscure. But its source, the title of the fourth section of *Le temps restitué* adapted from Broch’s novel, points toward Barraqué’s much

¹¹ Barraqué, *Écrits*, 181: La musique, c’est le drame, c’est le pathétique, c’est la mort. C’est le jeu complet, le tremblement jusqu’au suicide. Si la musique n’est pas ça, si elle n’est pas le dépassement jusqu’aux limites, elle n’est rien.

¹² *Ibid.*, 182.

¹³ The notion of the game, a theme in Blanchot’s reading of Mallarmé, may also represent a particular thread of French intellectual inspiration.

¹⁴ Barraqué, *Écrits*, 181.

more direct attempt at characterizing his philosophy of musical creation in the musical composition itself.¹⁵

Le temps restitué for soprano, chorus, and large ensemble is the only completed work in which Barraqué attempted a musical setting of the actual text of Broch's novel, *The Death of Virgil*, but Barraqué claimed that all his subsequent projects were aimed at a culminating cycle of large proportions that would either set the novel or comment upon it.¹⁶ This massive project was, in a certain way, framed by *Le temps restitué*. Barraqué began the work on *Le temps restitué* in the mid-1950s, and finished the bulk of the composition in 1957. The piece was not performed, however, until 1968, after a number of small revisions, the year before the essay quoted above about his poetics of death emerged. The difficulty of getting his works published and performed was a common symptom of the extreme technical challenges of many of his works. However, it might also be suspected that such a massive goal as Barraqué had planned was in itself a poetic realization of the dimension of incompleteness in his aesthetics.

The text for *Le temps restitué* is taken from a significant moment in the second of four books of Broch's novel, named 'The Descent,' at which point Broch's extremely long, stream of consciousness sentences are interrupted by poetic stanzas. In these poems, the author of the *Aeneid* deeply obsesses with time, expressing a hopefulness of grasping "the re-given time [temps restitué], re-awakened time beyond the bonds of fate."¹⁷ Barraqué does not set each stanza in its entirety, but rather chooses five relatively short selections of text out of the much longer poems and out of the prose between each poem. These texts are then set in five respective movements played without breaks, each entitled with a phrase from the novel's text:

¹⁵ In addition to the quote above, see Barraqué, *Écrits*, 172.

¹⁶ *Ibid.* See Griffiths, *The Sea on Fire: Jean Barraqué*.

¹⁷ Hermann Broch, *The Death of Virgil*, trans. Jean Starr Untermyer (New York: Random House, 1995), 97. Broch's original phrase reads 'die wiedergeschenkte, wiedererwacht Zeit...' Hermann Broch, *Der Tod des Vergil* (Frankfurt: Suhrkamp, 1976), 92. See also Broch, *La Mort de Virgile*, trans. Albert Kohn (Paris: Gallimard, 1955), 93.

LA DESCENTE

- I. LA LOI ET LE TEMPS
- II. SYMBOLE DE NUIT
- III. PORTAIL DE LA TERREUR
- IV. ...L'INACHÈVEMENT SANS CESSÉ
- V. CAR CE N'EST QUE PAR L'ERREUR

The philosophically charged content of *The Death of Virgil* creates an uncommonly intimate relationship between the themes of *Le temps restitué* and Barraqué's general philosophical inspirations: this work exemplifies, indeed thematizes, parts of Barraqué's own aesthetics by using text from a novel with a similar concern for human temporality and the creative potential of the anxiety of death.

The Death of Virgil also garnered the attention of Blanchot, whose critical essay on the novel was read by Foucault and Barraqué.¹⁸ Blanchot's prolific literary criticism after World War II synthesized many of the intellectual forces of the first half of the twentieth century, constantly emphasizing the philosophical work that literature accomplishes. In another major piece of writing from the 1950s, *The Space of Literature*, Blanchot grapples with Rilke, Mallarmé, and others in order to address certain aspects of Heidegger's thought and the significance of literary creation for addressing philosophical problems (a premise that Heidegger himself, of course, was in agreement with.) Although his writings do not seem to be directed toward a single philosophical system, Blanchot's literary perspective, both in his novels and his critical writings, are infused with his engagement with philosophy, not least of all the problem of human temporality.

In the case of Broch's *The Death of Virgil*, Blanchot did not need to look far to find philosophical themes. Broch himself studied philosophy among other things before he committed to being a writer. Born in Vienna to a Jewish family, Broch only left Europe after a time of

¹⁸ Griffiths, *The Sea on Fire: Jean Barraqué*; Maurice Blanchot, "Broch," *Nouvelle Revue Française* 6(1955).

imprisonment when Austria came under Nazi power. Although completed after his departure from Europe, the major work for *The Death of Virgil* occurred during Broch's time in Austrian prison and his escape to Britain, then to the United States, where he died in 1951.¹⁹ *The Death of Virgil* describes the final thoughts of the dying poet Virgil in flowing, stream of consciousness prose. These thoughts obsess with questions about the weight of his artistic creation, whether the poet does not really obscure reality by upholding truth in a false light. At the climax of this torment, Virgil even calls out to his companion that his major work, the *Aeneid*, must be burned.²⁰ Yet the appeal of the musical-poetic force of lyricism is a persistent theme of the novel's persona as well, hinting toward a possible redemption of his art: at one point in the novel the poet admits that "...he had always deemed as priestly the task of the singer, perhaps because of the strange consecration to death inherent in the enraptured fervor of every work of art..."²¹ In Broch's novel, death inspires the creative activity of the poet to a heightened degree because it brings clarity to an important confrontation between the atemporal law of fate, and the possibly redemptive freedom of time. Barraqué begins *Le temps restitué* with text from the novel that directly names this confrontation: "Law and time, born from each other, annulling, yet always giving birth to each other anew..."²² On one side is fate, and what the novel develops as fate's transcendence into atemporal law: deterministic laws of boundaries that cannot be overcome, laws of mere appearance, beauty, art, and symbolic orders, "the rigidity of the beautified world, its incapacity for all growth..."²³ On the other side, a different but still transcendental perspective on time: the hope for a Saturn-inspired cycle of seasons, of destruction and renewal, which Virgil envisions as the portal into higher stages of reality.

¹⁹ The German text of the novel was published in 1945, with the English translation produced the same year, on which he collaborated closely with the translator, Jean Starr Untermyer. It was translated into French in 1955.

²⁰ This moment was to be another significant work in Barraqué's large, unfinished cycle.

²¹ Broch, *The Death of Virgil*, 82.

²² *Ibid.*, 97.

²³ *Ibid.*, 122.

The polarity between the pessimism of fate and the optimism of a “time re-given... beyond the bounds of fate” corresponds to the drama of the novel as a whole.²⁴ Virgil’s desire for truth with respect to time and fate torments him as he vacillates between moments of clarity and feverish states of nightmare. The content of his streams of thought and dreams leads him again and again to the nature of time: his hope for a transcendence of time, his contemplations on the cycle of seasons, and the acceptance of his imminent death. As the novel unfolds, however, it is clear that his immanent personal death is much less significant than his hope that he is on the verge of entering into deeper realms of truth.

This novel, then, serves as much more than a source of aesthetic inspiration for Barraqué. Broch’s work, contextualized by the mid-century reception of Heidegger by Blanchot, clearly and persistently presents death as a dimension of creative engagement with reality. With these sources, it was possible for Barraqué to shape a unique perspective on music and time: not one primarily concerned with the passage of time within the experience of a musical work, but the possible ways in which human temporality affects the creation and reception of music. For Barraqué, temporality brings into focus the challenges of expression and the tenuous status of a coherent subjective element of musical drama. Barraqué’s comments, as well as his commitment to Broch’s novel, resonate strongly with the ideas about poetic creativity and death that emerge in the French intellectual world as it was in a large part responding to Heidegger.

Time and Temporality

It was not merely time as an abstract concept that was at stake in the post-Heideggerian thought of Blanchot as well as Foucault in the early 1950s, but the nature of the self in its temporal character. The unity or dispersion of the self, even in the act of perception and one’s present relationship to the world, rests on the proper mode of confrontation with, and understanding of, death. Feneyrou and Patrick Ozzard-Low mention that the context for Barraqué’s notion of death begins, to some extent, with Heidegger’s version of temporality.²⁵ Here, death is not a future event to be feared, not an inauthentic concern to watch out for: even in

²⁴ Ibid, 97.

²⁵ Patrick Ozzard-Low, "Barraqué Broch Heidegger: A Philosophical Introduction to the Music of Jean Barraqué," *Cahiers d'etudes germaniques* 16(1989); Barraqué, *Écrits*.

the present, an authentic confrontation with death is possible, in which “Da-sein stands before itself in its ownmost potentiality of being.”²⁶ Heidegger argues that a truly authentic relation to death leads to the self-possessed unity of our being: “Because anticipation of the possibility not-to-be-bypassed also disclosed all the possibilities lying before it, this anticipation includes the possibility of taking the *whole* of Da-sein in advance...”²⁷ Thus rather than wait for death to complete the self, the authentic anticipation of death discloses even the nature of the present.

The anticipation of death manifests itself in the present as a unifying force, in opposition to the dispersion of the self into the cares of the world. Da-sein “must first *pull itself together* from the *dispersion* and the *disconnectedness* of what has just ‘happened’...”²⁸ For Heidegger, the contemplation of death is a unifying act that prevents the diversity of the world from dispersing the self into a collection of inauthentic concerns: temporality is the ontological affirmation of the continuity of the self’s existence. This unification is the resolute acceptance of death, but it is also a unification of the being-there, the Da-sein, of one’s existence: “the resoluteness of the self against the inconstancy of dispersion is in itself a *steadiness*....” This resolute anticipation is indeed the very ‘loyalty of existence to its own self.’²⁹ For Heidegger, authentic being towards death is a unity in opposition to the inauthentic dispersion out into the cares of the world.

It is unclear whether Barraqué himself read Heidegger’s work in the 1950s, since *Being and Time* was not translated into French until 1964.³⁰ It was more likely through Blanchot, Foucault, as well as Sartre that Barraqué would have entered into any engagement with Heideggerian thought. In different ways, all three of these thinkers critiqued Heidegger’s

²⁶ Ozzard-Low makes no comment about the historical relationship among Heidegger, Broch, and Barraqué, but points out certain theoretical resonances. See Ozzard-Low, “Barraqué Broch Heidegger.” Martin Heidegger, *Being and Time*, trans. Joan Stambaugh (Albany: State University of New York Press, 1996), 232.

²⁷ *Being and Time*, 244.

²⁸ *Ibid.*, 356.

²⁹ *Ibid.*, 357.

³⁰ Cf. Macey, *The Lives of Michel Foucault: A Biography*, 33-34.

assertion about the unification of being in its confrontation with death. Blanchot's reading of Heidegger emphasized a different aspect of death, one that did not lead into the being of the self, but outward onto the world, to the 'essentially inauthentic.'³¹ Blanchot's 1955 essay on Broch, which was published the same year as the French translation of *The Death of Virgil*, was no doubt influential for Barraqué, but another of Blanchot's writings to come out in 1955, *The Space of Literature*, is also especially useful in elucidating the specific ways that Blanchot's understanding of death relates to literature after Heidegger. In *The Space of Literature*, Blanchot discusses Rilke, Mallarmé, and others, and in doing so grappled with Heidegger's version of temporality and unity, arguing for a poetic approach to death that did not stand resolutely in self-unity, but pursues precisely that dispersion which Heidegger saw as fundamentally inauthentic. "I elude [death] when I think I master it through a resolute acceptance, for then I turn away from what makes it the essentially inauthentic and the essentially inessential."³² Through his reading of Rilke, Blanchot turns Heidegger's insistence on authentic being-toward-death around, emphasizing the poetic route to being that occurs precisely through the sensitivity to the 'inauthentic' diversity of the world. Most significantly, Blanchot frames the poetic experience of this diversity as an 'openness' within a pursuit of a true form of dying.

If the poet is truly linked to this acceptance ... which seeks its starting point not in any particular thing but in all things and, more profoundly, in a region anterior to things, in the indeterminacy of being...then he can well say joyfully that he takes his point of departure in things: what he calls 'things' is no longer anything but the depth of the immediate and undetermined, and what he calls points of departure is the approach toward the point where nothing begins. It is 'the tension of an infinite beginning,' art itself as origin or again the experience of the Open, the search for a true dying.³³

³¹ Maurice Blanchot, *The Space of Literature*, trans. Ann Smock (Lincoln: University of Nebraska Press, 1982), 155.

³² Ibid.

³³ Ibid., 153.

Not unlike Barraqué's assertion that one's technique must evolve toward death, Blanchot seeks an immediacy of art for the poet through a search for death.³⁴ No longer self-oriented as in Heidegger, Blanchot looks outward in an acceptance of the immediate, undetermined world for the route to being. Such openness is the poet's true dying. Blanchot's conception of death here does not establish the self ontologically, but leaves this origin of thought and being open, ready for the creativity of art. Interpreting the theme of 'the Open' found in Rilke's poetry (and confronting Heidegger's own interpretation of Rilke), Blanchot finds an acceptance of the inauthentic world via this radical poetic openness to the diversity of reality, and through that, an act of dying.³⁵

Blanchot gives something of an explanation of how this radical openness relates to death through the mythic act of singing found in Rilke's figure of Orpheus. With Rilke's Orpheus, poetic song offers precisely that route of mortal de-personalization of the artistic act that Broch's Virgil had expressed, and that Barraqué's thoughts echo: "Through Orpheus we are reminded that speaking poetically and disappearing belong to the profundity of a single movement, that he who sings must jeopardize himself entirely and, in the end, perish, for he speaks only when the anticipated approach toward death, the premature separation, the adieu given in advance obliterate in him the false certitude of being, dissipate protective safeguards, deliver him to a limitless insecurity."³⁶ Here, creativity itself is a form of dying, one that rejects personal existence in favor of a limitless dissipation of existence. For Blanchot, something in the creative act itself connects with the negation of personal coherence: "I cannot write unless death ... makes of me the void where the impersonal is affirmed."³⁷ It is precisely in that state of dispersion where creativity occurs: not a personal death that simply negates the self, but an impersonal death in which selfhood as such is negated in favor of a receptive openness to the rest

³⁴ It is debatable to what extent this is actually a rejection of Heidegger: with Heidegger, too, one still must begin, at least, with the inauthentic, every day things of the world.

³⁵ Heidegger had already approached Rilke's concept of the Open. See Martin Heidegger, "What Are Poets For?" *Poetry, Language, Thought* trans. Albert Hofstadter (New York: HarperCollins, 1971).

³⁶ Blanchot, *The Space of Literature*, 156.

³⁷ *Ibid.*, 149.

of reality. While there are many aesthetic theories that assert a certain mode of impersonality to artistic creation, it is in these thoughts of Blanchot that Barraqué's idea that "the composer depersonalizes himself in the act of the creator" and that music is the pathos of death, have the strongest historical and theoretical resonance.³⁸

Much later, in a critique of Foucault's concept of the death of the author, Blanchot makes the interesting observation that there is an alignment between this dispersal of the subject and the discontinuity of serial music. "The subject does not disappear; rather its excessively determined unity is put in question. What arouses interest and inquiry is its disappearance..., or rather its dispersal, which does not annihilate it but offers us, out of it, no more than a plurality of positions and a discontinuity of functions (and here we reencounter the *system of discontinuities*, which, rightly or wrongly, seemed at one time to be a characteristic of serial music.)"³⁹ It is not clear why at this point in Blanchot's argument it was useful to refer to serial music, but it is highly apt nevertheless. Those elements of serial style which Barraqué exemplified in his works are precisely those that mirror the discontinuous excess that 'oversteps the limits' of the over-determined self in the creative act, that artistic position that accentuates dispersion outward, not unification inward.⁴⁰ Rather than emphasize the continuity of the self's inner existence over a span of time, this mode of creativity affirms the discontinuity of the outer world as it enters into the self and disperses it. Discontinuity in this context is the affirmation of a temporal mode in which there is not one single, linear synthesis the moments of a self, but a diverse proliferation of things and their relations that are gathered together by more general means: a move from a logic of identity to a logic of difference.

For Barraqué, the related principles of openness, dispersion, and discontinuity stemmed from his study of Debussy, but it seems highly likely that the philosophical discussions he surrounded himself with helped him formulate a positive account of formal relations and musical development within his style. In Barraqué's discussion of 'discontinuity' and 'open form,' he

³⁸ Barraqué, *Écrits*. 182-183.

³⁹ Maurice Blanchot, "Michel Foucault as I Imagine Him," in *Foucault Blanchot* (New York: Zone Books, 1987), 76-77.

⁴⁰ Barraqué, *Écrits*, 181.

more fully explicates those musical consequences that would be expected from his existentialist perspective: the excessive and perhaps even chaotic depth of musical detail, from which there is no determinate synthesis that would guarantee a clear linear development of any thematic structure. In this context, the force is not that of over-determined unity, but of dispersion or dissolution.

Like much of his aesthetic thought, Barraqué formulates these ideas in analytical discussions of other composers. Barraqué's writing on Debussy, who was an inspiration for many of the avant-garde composers, contains a number of musical discussions that can be directly connected to his own compositional technique. In these analytical writings, Barraqué introduces two ideas that have come to have a wide range of meaning for twentieth century music scholarship: open form and musical discontinuity. These concepts are closely related to each other for Barraqué: by subduing the formally organizational relationships among thematic elements, the continuity among different musical events is severed, resulting in a form that opens up a wide variety of possible relationships. While Barraqué does not make the connection explicit, this new conception of open, discontinuous, relation among musical moments strongly resonates with the aesthetic principles of dispersion and dissolution that were most clearly articulated by Blanchot.

The notion of discontinuity helps to bridge the divide between the general aesthetic comments of Barraqué and his concrete musical practices. Barraqué heard in Debussy's music a complexity of musical relationships that could not be reduced down to the traditional concept of development in which a single musical idea could be identified through its continuous temporal unfolding.

Debussy, from *Prelude to the Afternoon of a Faun* to *Jeux*, instituted a technique of instant invention where the elements or musical parameters are called to rebound or interfere with each other. One can observe the interaction of micro-constitutive elements in the relationships among cellular moments of the phrasing, rhythm, dynamics, harmony, registry, orchestration, etc., since the organization begins at the simplest level and moves to a complete formal entity. It operates like a world of networks, which, progressively, integrate the discursive discontinuity.⁴¹

⁴¹ Barraqué, "Debussy ou l'approche d'une organisation autogène de la composition," *Écrits*, 264: Debussy, du *Prélude à l'après-midi d'un faune* jusqu'à *Jeux*, a instauré une technique d'invention instantanée où les éléments ou paramètres musicaux sont appelés à rejaillir les uns sur les autres, à s'interférer. L'on peut observer ces interactions des éléments micro-

It was the complexity of Debussy's later works that inspired Barraqué. In these pieces, musical elements did not work together to form a unity or bring about clarity, but rather complicated the relationships among each other to such an extent that the development of a single musical idea could not be taken in isolation from the complex network of related musical ideas. This discontinuity between loosely related ideas is integral to what Barraqué hears in Debussy's style: the intricate mutual influence of one musical element on another leads to "the impossibility of the existence 'as such' of a maintained, linear developmental continuity of one musical parameter," as he summarizes later.⁴² Debussy's rapidly changing musical relations prevent the self-identity of a single musical idea to rise to the surface. What results is a new set of relations among musical moments, relations that are not constantly related back to a self-identical musical idea, but are 'open' to potential networks of relationships as they are differentiated from the rest of the complex milieu of the music.

In a different discussion of Debussy, Barraqué takes the complexity of Debussy's musical relations as important elements of 'open' musical form. Although Barraqué discusses open form within the context of his analytical treatment of past composers, the complex organization of his works, not least of all *Le temps restitué*, can illustrate that his ideal of openness guides his own compositional approach. Notably, Barraqué's concept of open form, which predates the majority of the discourse on openness, is not synonymous with indeterminacy, but rather accounts for a level of stylistic complexity that composers like Debussy initiated and serial composers like Barraqué faithfully pursued.

At the end of his 1962 book on Debussy, Barraqué credits the composer as the first who revealed the possibilities of open form: "From *La Mer* on, Debussy created a new formal concept, which one could call *open form*, and which found its full development in *Jeux* and other

constitutifs, au niveau des cellules et de leurs rapports, du phrasé, du rythme, de la dynamique, de l'harmonie, du registre, de l'orchestration, etc., depuis l'organisation la plus simple jusqu'à l'entité formelle complète. Il s'agit d'un monde en chaînes, qui, progressivement, intègre la discontinuité discursive.

⁴² Ibid., 273.

late works.”⁴³ This sense of form is based on a transformation of the possibilities of musical time outside the direction of traditional formal genres or expectations: “With Debussy, the work creates its own destiny, and thus leads to a non-configuration of musical time.”⁴⁴ It does not accomplish this negation of formal schema by any chance procedure or indeterminate notation, since Debussy’s works were all notated with high levels of detail. The realization of open form for Barraqué occurred in the subtraction of traditional formal principles in favor of looser relations among different moments in the music: the ‘discontinuity’ and ‘continuity’ between different moments whose relationships are complex: not utterly unrelated, but whose connections are not easy to pin down.

Debussy wanted his music to be deliberately unstable and fleeting, creating a labyrinth of motives and structures that disappear and reappear sporadically, and sometimes only underlie the music. Indeed, a careful analysis shows that the composer sometimes creates ‘absent developments,’ as if the music ‘took place elsewhere,’ according to a deductively logical route, but was undermined by interruptions in slices of forgetful absence. But the work escapes conceptual erosion, for the notion of discontinuity takes on a fresh sense; it is much more, on the structural level, an ‘alternative continuity.’ It is here that the formal genius of Debussy brings the temporal expression of the music to its apex...⁴⁵

⁴³ Barraqué, *Écrits*, 387: À partir de *La Mer*, Debussy crée un nouveau concept formel, que l’on peut appeler *forme ouverte* et qui trouvera son plein épanouissement dans *Jeux* et les dernières oeuvres.” Barraqué’s discussions of Debussy are distributed over a number of books and essays through the 1960s that are now, with the exception of his book *Debussy*, brought together in his collected writings.

⁴⁴ Ibid: Avec Debussy, l’œuvre s’invente un destin propre et, par là, aboutit à une non-configuration du temps musical.

⁴⁵ Barraqué, *Debussy* (Paris: Editions de Seuil, 1962), 214: Debussy a voulu que sa musique soit volontairement instable et fuyante, créant un encheêtrement des motives et des structures qui disparaissent et reparaissent de façon sporadique et parfois sous-jacente. En effet, une minutieuse analyse montre que le compositeur tient parfois compte de “développements absents”, comme si la musique s’était déroulée “ailleurs”, suivant un parcours logiquement déductif, mais se trouvait sapée, par interruption, en des tranches d’oubli. C’est ainsi que l’oeuvre échappe à l’effriment conceptuel; car la notion de discontinuité prend un nouveau sens; is s’agit bien plus, sur le plan structurel; d’une “continuité alternative”. Ici le génie formel de Debussy parvient au sommet de l’expression temporelle de la musique...

Barraqué's conception of discontinuity is not, then, a simple absence of relations, but the 'alternative' or 'absent' continuity of more malleable forms of the 'temporal expression' of music. Barraqué emphasizes that there is not a radical discontinuity, as with purely unrelated ideas (something Cage, for example would develop), but neither is there a linear progress of a single idea. The tension between continuity and discontinuity requires a fundamentally different account of the potential relationships between different moments in the music.

The non-linear discontinuity of musical ideas 'opens up' the diverse possibilities of the understanding of complex works. Approaching a work whose form is 'open' thus requires making sense of the discontinuity of thematic relations, positing a network of potential connections, and articulating the nature of these relationships. In open relationships, musical continuity is dispersed outward with increasing variation, not unified by strict rules of transformation. Barraqué did not claim that *Le temps restitué* was an official example of an open work, but it seems fairly clear that openness is a guiding force of organization for this piece: rather than a structured, organic unity, the complex details of the work, the diversity of potential motivic relations, overstep these bounds. The open principle of the work can be illustrated by describing this mode of recognition, and observing the loose relations among certain musical moments.

The challenge here is to give an account of the new possibilities of musical relations, the discontinuous yet related networks of ideas which might be gathered together. As such, the most important analytical perspective is not one that gives the official compositional process behind the work, but one which points to a more general logic of experience. Since it would not be possible to exhaust the diversity of potentially relevant musical relations, it is necessary to perform a more limited illustration of a network of musical moments and their relationships. The 'discontinuous' development of certain relations illustrates Barraqué's new notion of 'theme' within his discussion of Debussy: "With Debussy, form can no longer be understood as a succession or a progressive acquisition of a sequence of ideas, but as amalgams, elliptical paths, opposition of forces that are not necessarily based on the recognition of literal thematic structures, but only imply the transition from one to another through 'poetic mutations' where the

situation of the *theme-objects* create areas of neutrality.”⁴⁶ The manifestation of the ‘poetic mutation’ of ‘theme-objects’ is not merely pitch or rhythm related. The notion of theme-object can apply to other parameters, such as vocal texture. Expanding the concept of theme to include other parameters allows for the description of a particularly striking characteristic of Barraqué’s music that reflects his philosophical background in an important way: the vocal setting of the text of *The Death of Virgil* is given to the solo soprano and choir in radically contrasting sections that deploy different contrapuntal relations among the voices. Many phrases relate to one another outside the context of the architectonic schema of the work as a whole, based on similar levels of complexity or texture. These types of similarities, which do not rely on pitch, rhythm, or timbre, present an example of Barraqué’s suggestions about open form that were discussed above. It is true, as Henrich argues, that the vocal texture is decisive in juxtaposing the five main sections of *Le temps restitué*, resulting in five movements that emphasize different approaches to the vocal writing. However, since each of these movements are played without breaks and are connected by transition material, and since there is such a diversity of texture within most of the movements, the overall movement-schema has limited significance for the performance or experience of the work.⁴⁷

⁴⁶ Barraqué, *Écrits*: 273. Chez Debussy, la forme ne peut plus être comprise comme une succession ou une acquisition progressive par enchaînements d'idées, mais par les amalgames, des cheminements elliptiques, l'opposition de forces ne reposant pas nécessairement sur la reconnaissance de structures thématiques littérales, mais impliquant le passage de l'une à l'autre à travers des mutations poétiques ou la situation de thèmes-objet crée des zones de neutralité.

⁴⁷ Henrich also argues for a structural significance of the changes of vocal texture within *Le temps restitué*. Henrich describes the change in texture as part of the structural organization of the work, and ties this structure into the musically-oriented aesthetics of Broch himself. Such an approach is limited, though, in that Broch’s vision of his own musicality is that of a traditional symphonic unity. It is problematic to look towards the radically shifting contrasts of texture as an architectonic structuring of time: Barraqué was clearly not concerned with the unity of Broch’s own aesthetics when he chose relatively minute fragments of the novel to set. Also, there is a remarkable shifting of texture that does not lead to a sense of structure, but, by making loose connections between certain moments distributed over the work, the experience of the relations is fundamentally open, one without fully conscious relations among different musical events. Heribert Henrich, "'Architekturierung' Der Zeit: Zur Textsimultaneität in Jean Barraqués Le Temps Restitué," *Stimme und Wort in der Musik des 20. Jahrhunderts*. (2001). Blanchot refers to Broch’s comments about the musical inspirations of his writing. Maurice Blanchot, *The Book to Come*, trans. Charlotte Mandell (Stanford, CA: Stanford University Press, 2003). See also John

A more audibly significant formal drama occurs in the tightly constructed phrasing. In the genre of 1950s serialism, the use of clear phrasing is hardly self evident. Yet *Le temps restitué* indeed often moves along from one musical phrase to another, at times in a very traditional means. The rehearsal numbers, given at relatively short intervals of around six to ten measures, are thus not merely performative or rehearsal crutches, but mark off musically significant mid-ground organization. This level of organization highlights the attention Barraqué gave to the text setting as a factor in the coherence and perceptibility of each phrase. These rehearsal markings are doubly important, since they also give clarity to the complex rhythmic flow of the work. The rapidly altering meter and the constantly fluctuating tempo, in addition to the multiple serial rows deployed at any single time make many of the details of construction difficult to parse. But the shifts in contrapuntal texture of the voices mark off clear phrases by levels of complexity and clarity of text.

The contrast of these textural moments is also closely related to the issue of Barraqué's interpretation of Broch's novel. Broch takes up the themes of temporality and death through the problem of the unity of voice. And with this question of voice, the issue of unity of the temporal self emerges again. One function of the problem of time for the novel's narration is the drama that ensues between the self-possessed, focused thought of a single voice, and the dispersed, multiplied series of voices that overwhelms the poet's thoughts as he enters into moments of nightmarish contemplation. The variations in the manner in which the voices in Barraqué's work carry out these reflections of the dying poet reveal another route from the general issue of death and the dissolution of the self to particular musical techniques. Just as Virgil passes through moments of clarity of thought and reflective self possession and then feverish nightmares and immanent dissolutions, Barraqué distributes the text over a range of textures, at times maintaining the clarity of a single vocal persona, at others intensifying the music beyond the grasp of comprehension. There is not an organic development of one idea or the other, but a constant fluctuation between different levels of coherence of the musical persona that carries the text. This change does not occur at the large-scale formal level, nor at the level of the serial processes that determine pitch and rhythm, but at the level of phrasing.

Hargraves, *Music in the Works of Broch, Mann, and Kafka* (Rochester, NY: Camden House, 2001).

Broch's novel is mostly comprised of the flow of the single consciousness of the dying poet. Yet this singularity of thought is not a call for Barraqué to compose his entire work for solo voice. The reason for the additional choir is embedded within the content of the novel. The struggle between a single voice and the voices of the multiplicity is also a trope in *The Death of Virgil*. At the beginning of the second section of Broch's novel, 'Fire-the Descent,' Virgil lays alone in his bed, and the contemplation of his physical position of laying down inspires an extended reflection on the reclining positions of sleeping, making love, and dying, which recalled for him a "seldom conscious but always impatient desire, for his bodily unity ... to be finally dissolved...so that the extraordinary might follow...."⁴⁸ The desire for the dissolution of his self-identity unfolds in an image of two contrasting dimensions: the vertical ascent to Apollonian clarity of a single, unified soul, and the horizontal participation of the self in an impersonal nature. The lyrical flow of thought describes how, when standing, the soul of man unifies the "dark abyss where her roots are entwined with the humus of existence" with the "clarity of her Apollonian goal.... And unfolding like a tree, the more is she enabled to unify the darkness and light in the shadowy leaves of her branches. ... But when she has stretched out, abandoned to sleep, to love, to death, when she herself has become an outstretched landscape, then her task is no longer the merging of opposites...she has become only an unbroken endless hearkening...she persists as the unchanged and unchangeable Saturnian realm throughout the whole of time."⁴⁹ In this hearkening, the soul does not unify the above and below ('the aetheric regions' with 'the fires of the underworld') but "...as a constant return of the all-encompassing Saturnian era in which the landscape of the soul and the earth are stretched out infinitely, inseparable in their respirations...interwoven with the eternal return...a hearkening of the landscape of the soul, the Saturnian hearkening to a deathless dying..."⁵⁰ Virgil struggles between the desire for this dissipation of death, at which point he would be reabsorbed into pure being, and the Apollonian clarity of a single, unified soul. The dissolved or fragmented subject who loses self-identity through the engagement with the transcendental plane of existence in the

⁴⁸ Broch, *The Death of Virgil*, 78.

⁴⁹ Ibid., 78-80.

⁵⁰ Ibid., 80.

face of the future death-event relates to the voice that Broch presents as one of Virgil's goals. Virgil experienced a moment of this dispersal in the section leading up to the text that serves as the basis for Barraqué's work: "...the shapelessness he had thought to outrun took hold on him again...almost palpably, as the chaos of severance, and as a dissolution which by no hearkening or grasping could ever be conformed to unity; the demonic chaos of all separated voices, all separated perceptions, all isolated things, regardless of whether they belonged to the present, the past, or the future, this chaos now assailed him."⁵¹ Broch's theme of 'dissolution,' Virgil's constant concern that he would be unable to gather together the inspiriting yet chaotic forces that populate his nightmarish visions, attack the very coherence of his own self and its temporality. Thus for programmatic as well as philosophical reasons, Barraqué's treatment of this chaos of voices becomes a critical manifestation of his style. In addition to the formal discontinuity that results in the constant fluctuations of vocal texture, there is also, then, a much simpler and straightforward sense of discontinuity that resides in Barraqué's vocal writing: that of the relative coherence of the text setting. Every passage in which the soloist or choir sings can be characterized by the relationships among the voices: their melodic contour, relative independence, the distribution of text, and even timbral indications strongly suggest that vocal texture was a compositional parameter.

The differences in texture vary along an axis of complexity. On one end of the spectrum are the passages for the solo soprano. At times, Barraqué synthesizes the serial intervallic content with traditional Romantic gestures of expressive force to set the text. In other cases, the vocal solo contains drastic leaps and violent articulations that disrupt the lyrical flow, or uses varieties of vocal technique to contrast between 'chanté' and straight lines. Since the second section of the work includes only the solo soprano with the instrumental ensemble, I will return to it in a separate discussion below, but one short passage, Example 1, illustrates one moment where the soprano solo retains a relatively simple melodic line in opposition to the instrumental ensemble. The melodic intervals remain well within an octave, the declamation of the syllables, the dynamics and indications for timbral change (non-vibrato to poco chanté) also do not interrupt the coherence of the text.

⁵¹ Ibid., 88.

Progressivement du "non vibrato égal" aller
vers "poco chanté"

La nuit va t'elle lui ré - ve - ler son der - nier sym - bol - e

Example 6. 1: Soprano melody, La temps restitué, mm. 153-159

On the other end of the spectrum, there is the aptly-labeled ‘chaotic’ distribution of text over a large number of voices.⁵² In these situations, two or more voices of the choir share the text in a form similar to a hocket, which completely dissolves the continuity of any single voice in favor of a highly complex situation. In some sections, where the text is shared, repeated, truncated, or otherwise distributed over a number of voices, it is necessary for Barraqué to indicate the continuity of text with a dotted line connecting attacks over the breadth of the page, such as in Example 3. This violent dispersal of language into an extremely dense texture differentiates these sections from other moments in the work, yet does not allow many specific musical elements, such as repeated rhythmic or melodic cells, to rise to the surface in a thematic function.

The image shows a page of a musical score for a choir. It features ten staves, each representing a different voice part: Soprano (Sop.), Alto (Alt.), Tenor (Ten.), Bass (Basse), Soprano (Sop.), Alto (Alt.), Tenor (Ten.), Bass (Basse), Soprano (Sop.), and Soprano Solo (Sop. s.). The lyrics are in French and are distributed across the voices in a complex, overlapping manner. A dotted line is drawn across the staves, connecting the text from one voice to another, illustrating the 'chaotic' distribution of text. The score includes various musical notations such as clefs, time signatures, and dynamic markings.

Example 6.3: *La temps restitué*, mm. 456-460

The space between the simple, melodic solo, and chaotic disjunction of the complex choral passages is not an unordered continuum, however. There are recognizable similarities among different musical moments and their texture. At times the choir performs relatively simple, homophonic phrases, at other times there is the suggestion of a contrapuntal imitation among the voices. Within each of the movements except the second, there is a constant shift

⁵² At the initiation of one particularly complex section, Barraqué indicates the following: “Tempo mobile et chaotique dans un mouvement vif.”

among different textures. While each phrase is determined by its relationship with the music immediately preceding and following it, the open relations among similar textures over the span of the work come into play as well. The relationship between different moments that fall into the same category of texture will not necessarily have any other musical detail in common, nor will it be such a strong resemblance that it offers any sense of overall form.

For example, besides the simple solo moments and highly complex choral sections, it is possible to hear moments where the voices move in something like a contrapuntal manner. These contrapuntal moments sometime move quickly into simple homophonic endings, or expand into a disorienting complexity. Nevertheless, they share a few characteristics that differentiate certain passages from their surroundings and offer a loose relationship among different moments dispersed throughout the roughly forty-minute piece. Taking four of these passages as an illustration, a few similarities can be identified: each of the voices within these passages possesses the entire text being set, in contrast to other sections where the novel's text moves between each voice. Each example begins with staggered entrances among some or all of the voices (in the case of Example 6, the entrances begin in the third bar after a moment of a simpler homophonic declamation.) At the closure of each of these passages, their complexity resolves, in a sense, into a relatively clearer moment of completely homophonic declamation. In this way, each of these passages has the coherence of a phrase that is not always guaranteed to the text within in work as a whole. Also, the details of these entrances are suggestive of some sort of imitation, but only in a vague sense.

In Example 4, the soprano begins with an F#-E-F-natural, then the bass enters in the second bar with a Bb-C-B-natural, and so while the notes occur within different melodic contours, the voices at least retain the same interval classes. In the alto and tenor of the same example, by contrast, they have the same contour, but slightly different intervals. All of this occurs with an overlayment of the orchestra. Example 5 is slightly more explicit, since each voice enters with a very rapid declamation of 'in verite' which is echoed. Barraqué does not call for strict singing at this point, though: the score indicates that it is quietly spoken or murmured. The most obvious case of imitation is thus obscured by the effects of the singing and the ensemble's strength.

In Example 6, the altos and sopranos are divided into six parts. This passage is taken from a longer section in which the solo soprano and orchestra compete for the forefront, while the choir remains in the background. Even so, the passage hints at a loose resemblance between different voices. The general contours of the three soprano voices begin with an ascending half step, for example. And in Example 7, beginning in the third measure, the upper voices begin with an interval 4 and the lower voices begin with an interval 3, set within a collection of more complex independent melodic lines.

m. 46 9

S. A. Sans ja - mais to - ja - mais 3 to - ta - le - ment le - ment 5 le sai - sir et - 3 pour - tant et pour - tant

T. B. ja - mais to - ja - mais 5 to - ta - le - ment les sai - sir et - 3 pour - tant et pour - tant

Example 6.4: *La temps restitué*, mm. 46-52

m. 595 85

S. A. En ve - ri - te l'homme est en - ga - ge dans sa ta - che et rein n'est - ca - pable En ve - ri - te l'homme est en - ga - ge dans sa tache de con - naitre et rien n'est ca - pable

T. B. En ve - ri - te l'homme est en - ga - ge dans sa tache de con - naitre et rien n'est ca - pable

S. A. de pable de l'en e - car - ter pas meme de l'en e - car - ter pas meme

T. B. pable de l'en e - car - ter pas meme l'er - reur l'er - reur

Example 6.5: *La temps restitué*, mm. 595-604

m.653 93

S. fu(yant) - yant - mais - cher - chant -

S. fu(yant) yant mais cher chant

S. fu(yant) - yant mais - cher-chant - la -

A. fu(yant) tant mais cher chant la -

A. fu(yant) yant mais cher - chant

A. fu(yant) yant mais cher - chant - la -

Example 6.6: *La temps restitué*, mm. 653-657

S. la - mort - cher - chant mais fu - yant l'oeuvre

S. la mort cher - chant mais - fu - yant l'oeuvre

S. mort cher - chant mais fu - yant l'oeuvre

A. mort cher - chant mais fu - yant l'oeuvre

A. la mort - cher - chant mais fu - yant l'oeuvre

A. mort cher - chant mais fu - yant l'oeuvre

Example 6.6 continued: *La temps restitué*, mm. 658-660

m. 799

S.
A.
T.
B.

ou il est i - ne - luc - ta - ble - ment en - ga - ge que l'homme que
ou il est i - ne - luc - ta - ble - ment en - ga - ge que l'homme de -

de - vient le cher - cheur qu'il est l'homme qui cherche.
l'homme de - vient le cher - cheur qu'il est l'homme qui cherche.

l'homme vient de - vient le cher - cheur qu'il est cheur l'homme qui cherche.
l'homme vient de - vient le cher - cheur qu'il est cheur l'homme qui cherche.

116

Example 6.7: La temps restitué, mm. 799-808

The details that tie these four passages together are not readily apparent, but they do lend a certain quality to each that differentiates them, on one hand, from the radically complex and utterly incomprehensible moments, and on the other hand, the simple solo or strict homophonic declamation heard elsewhere. It also gathers them together in a loose way that illustrates the type of musical relation Barraqué was especially interested in.

This set of examples is one of perhaps countless similarities that might be encountered over the span of this work. Without the clear presence of any major thematic material, and with the serial techniques underlying the work obscured by their complex deployment, these looser similarities are what attract more attention. Unlike a piece with a strong thematic idea, or a clear overarching serial process, this piece as a whole does not merely call for an account of its unity or logical coherence, but of the manner in which the plurality of similar moments are distributed over the work, to use Barraqué's idea, within alternate continuities, of dispersed or dissipated collections. For Barraqué, then, both the singer, and in a different sense, the motive, does not point to a self-identical unity of voice or idea. They are multiple and prolific. Barraqué's musical realization of the dispersion of the voice performs the dispersal of subjective continuity that Broch's Virgil himself experienced in the harkening to the chaos of the multiplicity of voices.

Binswanger: dream gestures, 2nd movement

Something like this dispersion occurs in the second movement as well, even though it is only the solo soprano and the instrumental ensemble without the choir. The function of dispersion within a single voice helps to clarify another source of Barraqué's understanding of existential temporality. As the issue of texture made clear, Blanchot and Broch frame a large portion of Barraqué's understanding and deployment of philosophy for his compositional technique. Another significant voice on these matters was Ludwig Binswanger, and more significantly, Foucault's interpretation of Binswanger. One of Foucault's major projects during his relationship with Barraqué was a translation of Binswanger's short work, *Dream and Existence*, for which he supplied an 'introduction' that, in a mark of Foucault's interest in the topic, ran longer than the original text.⁵³ Binswanger's writings, then, provide another context to the problem of temporality for Barraqué. Like Blanchot, Foucault and Binswanger took Heidegger's version of temporality as a point of departure for a concept of the self who is determined by death in important ways. This line of influence from Binswanger and Foucault are especially useful in the interpretation of Barraqué's concept of lyricism. Lyricism, which Barraqué asserted was one way of confronting death in music, is a major compositional force in the second movement of *Le temps restitué*, which is the only extended moment in the work for the soprano solo with the instrumental ensemble. This solo deserves special attention as it clarifies certain ways Barraqué confronted issues of musical expressivity and gives another sense of what the composer might have meant when he wrote that 'in lyricism, there is a contemplation of death.'⁵⁴ The main dramatic development in the second movement juxtaposes two forms of singing that correspond closely to the two forces of law and time that Barraqué established in the first movement: that of fate, of the coherent yet mortal self, unified in the face of death, and that of time, dispersing the self out into the diversity of the world. In this context, the contemplation of death vacillates between two forms within the voice itself: a proliferation of difference within a single voice, rather than among different voices or different instrumental sounds.

⁵³See Ludwig Binswanger, *Dream and Existence*, trans. Forrest Williams and Jacob Needleman (Atlantic Highlands, NJ: Humanities Press, 1993)

⁵⁴*Écrits*, 181.

While other sections of *Le temps restitué* fluctuate among a variety of different treatments of the voice, the second movement is comprised of an extended soprano solo set against an intricate and often overwhelmingly complex instrumental ensemble. Barraqué's approach to the solo vocal writing also opens up another route to the problem of time by echoing the influence of Binswanger and Foucault, whose interpretation of the ontological dream-structures of reality rest in the temporal interpretation of human existence. The dream-state is also useful in approaching Broch's text as he depicts Virgil slipping in and out of the sequence of dreams and nightmares he experiences through the night. The clarity of Barraqué's task in the face of *The Death of Virgil* crystallizes where Broch, Blanchot, and Binswanger's ideas touch: the realization of the feverish contemplation of death in a dream-state structured by fire and by song.

Broch names the four 'symphonic movements' of his novel according to mythic elements: I Water: The Arrival, II Fire: The Descent, III Earth: The Expectation, and IV Air: The Homecoming. Barraqué, setting text from the second section, 'Fire: The Descent,' uses text mostly presented in poetic stanzas, except for the second section, where the composer sets fragments of prose text in various degrees of coherence within the solo soprano only. Instead of relying on the engine of textural contrast with the full choir, the second movement performs one idea Broch used to describe one stylistic aspect of the novel as 'a lyrical commentary on itself.'⁵⁵ The second movement of *Le temps restitué* contains only the solo soprano alternating with large instrumental segments, with the lyricism decidedly remaining with the voice, and even then only occasionally. The text Barraqué used in the second movement was extracted by small portions from the novel's flowing prose. Barraqué then adds a second level of fragmentation, at times giving full clauses, at other times, only single phonemes. The relative amounts of fragmentation for each phrase or word reveal a basic dramatic process of the second movement, where some moments are coherent clauses, and others contain merely a single phoneme. Instead of strict thematic material, however, the initial lyrical style of vocal expressivity gives way to a contrasting radical fragmentation, with a return to a closing style similar to the beginning.

⁵⁵ Blanchot discusses Broch's comments about his style. Blanchot, *The Book to Come*.

In the continuous phrases, then, the soprano melody retains a characteristic vocal quality that approaches traditional sentiment. In the soprano's initial phrase in the second movement (discussed above), the melodic line remains within a controlled range, and nearly syllabic text setting grounds the following passage in a lyrical melodic style, such as in Examples 1 and 2 at measure 153 mentioned above. Throughout, Barraqué tightly controls the vocal sound, often indicating, as here, whether the singer sings without vibrato or alternately 'chanté.'

What was initially set up as a traditional contrast between lyrical soprano and instrumental accompaniment is broken down into fragments where the voice fails to differentiate itself from the ensemble. This process, whereby the voice changes its relationship with the ensemble, creates a formal drama that contrasts two extremes. On one side there is a mode of singing that retains an overall style of vocal expressivity reminiscent of tonal writing, smoothly transformed into the serial context. On the other side there is a radical fragmentation of voice in which the text is inaudible, and the voice itself is absorbed into the complexity of the ensemble.

The polarity between these two types of singing brings into focus the problem of temporality that was framed by Binswanger's influence on Barraqué. In the context of Binswanger's ideas, human temporality was a fundamental structure of human existence that revealed some of its nature through creative or expressive means. It was Binswanger's perspective on creativity that offered Foucault an entirely new way to approach one of his philosophical challenges, the problematic unity between expressive content and communicable meaning. Fenevou notes that Foucault's interest in Ludwig Binswanger became an inspiration for Barraqué as well, although I wish to spell out a different type of relationship between Binswanger's ideas and Barraqué's music than Fenevou asserts. Binswanger claims his analytical method follows the tradition of Husserl and Heidegger, and more significantly to his actual clinical practices, of Freud. In his introduction to Binswanger's *Dream and Existence*, Foucault isolates the temporal aspect of dream interpretation as it relates to one of Binswanger's cases of schizophrenia, where a past trauma directs the dreams under analysis: "...as the subject of the dream cannot be the quasi-objectified subject of that past history, its constituting moment can only be that existence which makes itself through time, that existence in its movement

toward the future.”⁵⁶ In this attention to future temporality, Foucault grasps Binswanger’s re-assessment of Freud’s reliance on repetition as the psychic operation that institutes dreams: “The dream means repetition only to the extent that the repetition is precisely the experience of a temporality which opens upon the future and constitutes itself as freedom.”⁵⁷ Repetition is no longer simply an account of Freud’s version of a fixation on the past, but it is a creative repetition that brings along certain content with it into the future through the process of self creation (or destruction.)

Binswanger begins his small text *Dream and Existence* with an example: flying and falling. The contrast between high and low and the movement between them constitute an ontological structure of existence whose clearest manifestation occurs through dreams.

When, for example, we speak of a high and a low tower, a high and a low tone, high and low morals, high and low spirits, what is involved is not a linguistic carrying over from one sphere of Being (*Seinsphären*) to the others, but, rather, a general meaning matrix in which all particular regional spheres have an equal ‘share,’ i.e., which contains within it these same particular, specific meanings (spatial, acoustic, spiritual, psychic, etc.)...Language itself, in this simile, grasps hold of a particular element lying deep within the Being of man’s ontological structure...⁵⁸

In dreams, then, falling is an expressive act from which meaning is related to a larger matrix of sense that was, in Binswanger’s case, used for therapeutic purposes. In Foucault’s introduction to Binswanger’s essay, he touches on another ‘primordial’ topic for Binswanger and other psychoanalytical discussions, the polarity of water and fire. “In the dream, the soul, freed from its body, plunges into the *kosmos*, becomes immersed in it, and mingles with its motions in a sort of aquatic union. For others, the mythic element through which the dream joins the world is not water, but fire. In the dream, the subtle body of the soul catches fire from the secret flame of the

⁵⁶ Michel Foucault, "Dream, Imagination, and Existence : An Introduction to Ludwig Binswanger's *Dream and Existence*," in *Dream and Existence*, ed. Kieth Hoeller (Atlantic Highlands, NJ: Humanities Press, 1993), 58.

⁵⁷ *Ibid.*, 58-59.

⁵⁸ Ludwig Binswanger, *Dream and Existence*, trans. Forrest Williams and Jacob Needleman (Atlantic Highlands, NJ: Humanities Press, 1993), 82-83.

world and thereby penetrates to the intimacy of things.”⁵⁹ Foucault points to Binswanger’s other research in which the water-fire pair functions as an ontological structure in his interpretation of patients, and Freud mentions the image of fire is a typical one in his psychoanalysis.⁶⁰ The unique element to Binswanger’s position is not the analytical attention to ‘primordial’ tropes, but that the linguistic connections among manifold appearances of certain meanings can relate to the ontological structure of human existence, understood as Heidegger’s Da-sein. Thus, at stake in the articulation of these linguistic/creative dream structures is the temporality of existence, a fact Binswanger himself points out. The creative activity within the section that Broch titled ‘Fire’ aligns well with the hot, feverish, descent into the undetermined from which Barraqué takes his inspiration.

Jean Starr Untermeyer, the English translator of *The Death of Virgil*, observed Broch’s musical ‘tempo changes’ within the different ‘movements’ of the novel. Untermeyer connects this fluctuation of the text’s tempo to the dynamic contemplation of death of the poet: ‘mirroring the feverish yet lucid thoughts of the dying poet, in their great rocking rhythms they reproduce a sensation of the floating journey on which he is being carried by the bark of death.’⁶¹ In ‘Fire-The Descent,’ Virgil is overcome with exhaustion and fever, and in this state confronts the possibility that the *Aeneid* fails to reconcile the conflicting demands of beauty and truth, and will later, having been resigned to this failure, demand that the epic be burned. In his 1955 essay on Broch, Blanchot summarizes how Broch’s Virgil struggles to find the poetic language that satisfied the demands of his experience of dying. “There will be no communication, no song, if song cannot descend, below all form, toward the formless and toward that profundity where the voice outside of all language speaks. It is this descent—descent toward the undetermined—that the dying poet seeks to accomplish by his death. The space of song and the space of death are

⁵⁹ Foucault, "Dream, Imagination, and Existence : An Introduction to Ludwig Binswanger's Dream and Existence," 47-48.

⁶⁰ Ibid., 49. Sigmund Freud, *The Interpretation of Dreams*, trans. James Strachey (New York: Basic Books, 2010).

⁶¹ See translator’s note in Broch, *The Death of Virgil*, 486.

described to us as linked and embraced by each other.”⁶² The formlessness, the undetermined, is the space of song and of death. In Barraqué, this idea is dramatized through the soprano. The soprano’s song fluctuates between a highly determined, declamatory style and a style which melds into the surrounding music. If the soprano does not ultimately escape language, many moments are defined by efforts towards that end.

Table 6.1 shows the division of text according to each solo phrase, with each line contrasting with an instrumental passage—a ritornello, perhaps. In my reading of the movement’s form, the contrast between two extremes of vocal style is not one of thematic repetition, but of the changing expressive status of the vocal line: the drama between the coherent subject and the incoherent depths. The formal drama is not of a linear development of thematic material, but of interplay between two modes of singing: vocal and instrumental, of the solo and of the ensemble, of the sedentary subject of the present and the disorientation of musical gestures that blends in with the instrumental ritornello. In the following discussion, the style of singing that most closely follows the coherent, soloistic lines will be labeled as the A style, and the less coherent, often instrumental-like, disjunctive singing will be the B style. Almost reminiscent of an aria, there is an overall process by which the soprano’s role begins and ends with relatively coherent phrases (or A style), while the middle of the movement approaches an almost complete absorption of the soprano into the instrumental ensemble (B style). Additionally reminiscent of an aria, each of the soprano’s phrases are marked off with instrumental sections of varying lengths.

The various phrases of the soprano solo share similarities that can be illustrated by an interval tabulation that simply lists the unordered melodic intervals of the soprano lines, without reducing them to their interval classes or pitch class sets, but also without taking account of direction or transposition. In order to clarify that the interval distances are not reduced to interval classes, nor reduced by octave equivalence, it will be helpful to tabulate them in open slashes, \\
//. The first two phrases, for example, include the unordered melodic interval distances of 1,2,4,5,6,8, and 9, written in Table 1 as \\
//. This tabulation is useful in articulating the general similarity of the soprano’s phrases by noting the differences between intervals of the

⁶² Blanchot, *The Book to Come*, 123.

same class and intervals larger than an octave. Each of the melodies of the 'A material' then, are limited to leaps smaller than interval 9 and avoids intervals 3 and 7. Table 1 displays this process of changing interval content.

Measures	Text of Each Vocal Phrase	Translation	Melodic Distances
127-138	...c'est au sien de la nécessité que tout s'était accompli...	<i>...this is of his of the necessity of all that was accomplished...</i>	\\1,2,4,5,6,8,9//
139-152	<i>Allant</i>		
153-159	La nuit va-t-elle lue révéler son dernier symbole,	<i>The night will reveal its last symbol,</i>	\\1,2,4,5,6,8,9//
160-169	<i>Très vif □ Modéré □ Plus rapide</i>		
170-172	à lui	<i>to him</i>	\\1,4,5,6,9,18//
173-187	<i>Rapide, percutant □ Bien Modéré</i>		
188-191	dont l'œil	<i>whose eyes</i>	\\1,2,3,4//
192-204	<i>Andantino □ Un peu moins Andante</i>		
205-207	devra	<i>will</i>	\\1,4//
208-210	<i>Adagio □ Assez Lent</i>		
211	se	<i>themselves</i>	--
212-213	<i>Adagio</i>		
214	voi-	<i>veil</i>	--
215-219	<i>Assez Lent</i>		
220	-ler Lorsque la	<i>where the</i>	\\1,4,5,6,9//
221-223	<i>Lent</i>		
224	nuit	<i>night</i>	--
225-230	<i>Lent</i>		
231-234	ouvrira	<i>will open</i>	\\5,6,8//
235-237	<i>Allant</i>		
238	le	<i>the</i>	--
239-245	<i>Très allant</i>		
246	sien ? ...	<i>his? ...</i>	--
247-266	<i>Prestissimo plus possible</i>		
267-274	les choses terrestres s'étaient rapprochées car celui a franchi le premier portail	<i>earthly things were brought near because it passed the first portal</i>	\\1,3,4,5,6,7,8,9,11,13//
275-279	<i>Lent</i>		
280-282	de la terreur,	<i>of terror,</i>	--
283-286	<i>Beaucoup plus lent</i>		
287-290	celui-là est enclos dans le vestibule qui conduit à un nouvel inconnu...	<i>one is enclosed in the vestibule that leads to a newly unknown ...</i>	\\1,2,3,4,6,9//
291-299	<i>Beaucoup moins lent</i>		
300-306	doucement et sans plus rien attendre...	<i>gently and without expecting anything ...</i>	\\1,2,4//
307-310	<i>[Conductor cues for unmeasured entrances]</i>		
311-314	libérée du hasard	<i>released by chance</i>	\\1,3,11//

Table 6.1: Melodic interval content in respective phrases

The penultimate phrase returns to a very natural mode of declamation, and includes almost completely stepwise movement. The melodic intervals are similar between the first ‘A’ section and the second ‘A’ section. They share the melodic intervals \\1,2,4,6,9// and both generally avoid interrupting the syllabic declamation of their respective longer phrases. With the addition of interval 3 and the shorter length, though, measures 300 onward begin a transition into the next movement. The A material, then, is not exactly comprised of motivic relations, but a general similarity between syllabic melodies that employ a limited, shared set of intervals, and are contrasted with a ‘B section’ in which the voice either performs long melismas or single notes or phonemes, following a temptation to enter into the instrumental texture.

Two examples of this ‘B style’ singing can illustrate the way in which the soprano’s single word or phoneme begins to be absorbed into the instrumental ensemble. In Example 8, for instance, a long melisma on the soprano’s ascent to A5, is not only quite technical, with instrumental-like demands of the voice (with the indication to sing without vibrato and “*detaché*”), the interjections of other instruments change the quality of certain notes. The high A5 is doubled by a gesture in the flute, breaking down the barrier between vocal and instrumental timbre. The C# and C in the voice are prepared by a B-C trill in the violin, making the sixteenth-notes in the voice a continuation of the string pattern, and the low string notes, though one, then two octaves below, contrast with the vocal pitch only by a semi-tone, muddying up the pitch clarity and creating an overall disorientation in the sound and pitch center. What was initially set up as a traditional contrast between lyrical soprano and instrumental accompaniment is broken down into fragments where the voice fails to differentiate itself from the ensemble. And in Example 9, the soprano’s single word, *nuit*, initiates a short passage of non-pitched percussion. The soprano is given the instructions in the score, ‘*presque chuchoté sans nuances.*’ This attack aligns with the percussion group’s downbeat after a short silence.

One moment stands out from this formal schema. The phrase at measures 269-283: *les choses terrestres s'étaient rapprochées car celui a franchi le premier portail de la terreur*, is not actually a return to the melodic style of the beginning of the movement, but it does recommence the syllabic singing of a longer line of text that was characteristic of the A section. It is here, actually, that the soprano reaches the fullest absorption into the instrumental ensemble. The melodic interval collection nears completion, avoiding only the octave and intervals 2 and 10 (that is, interval class 2): \\1,3,4,5,6,7,8,9,11,13//. Rather than maintaining a position as vocal soloist, the soprano is incorporated into the ensemble in two ways: first, by continuing the disjunctive phrasing of the bowed strings and woodwinds, which begin in a sort of contrapuntal character; and second, by using percussive articulations and consonants, aligning with the percussion and plucked string sections in modes of attack. In measure 273, shown in example 10, Barraqué indicates for the soprano to sing 'très brusque, presque brutal,' and from measure 268 on, the non-pitched percussion are 'tout en [^]ff.' Many of the melodic percussion and plucked strings also have *marcato* throughout, emphasizing their already articulate character. In addition to blending with the attacks, there are moments when the instruments pair with the voice in a way that muddies up the distinction between vocal and instrumental timbres: In measure 269, shown in example 10, the harp plays the same rhythm in contrary motion; in measure 271, the clavichord trills on the same high g the soprano holds, and in measure 273, the percussion reinforce each note of the soprano until the voice joins the vibraphone's D#-E trill with her own constant E. All of these elements create a moment where the soprano is absorbed into the percussive texture of the ensemble before transitioning back into the role of vocalist in the A material.

P. fl.
 G. fl.
 Hbois
 C. ang.
 P. Clar.
 Clar.
 Cl. bas.
 Bass.
 Xyl.
 Vib.
 Glock.
 Cel.
 Clav.
 Harp.
 Guir.
 Batt. I.
 Batt. II.
 Batt. III.
 Batt. IV. C. al. 4
 Choeur S.
 Choeur A.
 Choeur T.
 Sop. s.

270
 271
 272
 273
 274

risonner
expressif
poco
C. raul
Timp
mf
ff
molto
très brusque, presque brutal

La h
 Un peu en dessous du T¹
 rap - pro - chées
 car ce - lui
 qui a franchi le pre -
 mier por - tail

43

Example 6.10: Measures 269-274

Barraqué's treatment of musical lines finds a malleability that is directly related to different, even opposing, modes of temporality: the conscious, linear passing of time versus the unconscious, chaotic multiplicity of times. Will a particular melody reinforce the vision of temporal continuity of the listening or singing subject? Or will the neutralization of that continuity lead to a complex relation between voice and ensemble, or among different voices themselves, or even of the non-linear, open development of thematic possibilities? In the latter case, which is often serial and post-serial music at its most complex, the temporal mode is not one that orients the listening subject to a higher level of coherence, but grasps the feverish dispersion of the self that was a persistent theme of the philosophical word that surrounded Barraqué.

Conclusion

For Barraqué and the French thinkers associated with him, the attention to death was not motivated by its destructive, fragmentary power of negation, but rather an affirmative perspective, a positivity put into relief or activated by its proximity to negation. At the end of his short essay on his poetics of death, Barraqué meditates on Beethoven's *Heiligenstadt Testament* in order to emphasize that the act of creation is foremost an affirmative one. "Like every creator, I love life. I am sometimes unhappy, I can be hopeless, but I love life, I love everything that lives."⁶³ For Barraqué, musical creativity is the clearest manifestation of the vitality in confronting death: "And from this death, which is the achievement of all life (the extraordinary gift of music!) is born the smile of being human."⁶⁴ Barraqué's poetics of death is based on an existential perspective of radical affirmation, not destruction that—as Barraqué wrote of music, 'oversteps its limits.'⁶⁵

In another text that happened to be published the same year as Barraqué's short essay, Gilles Deleuze credits Blanchot for this precise insight. "It is life," Gilles Deleuze writes, "that

⁶³ Barraqué, *Écrits*, 183: Comme tout créateur, j'aime la vie. J'en suis parfois malheureux, je peux en être désespéré, mais j'aime la vie, j'aime tout ce qui vit.

⁶⁴ Ibid. 182. Et de cette mort qui est l'achèvement de tout vie (extraordinaire don de la musique!) naît le sourire d'un être humain.

⁶⁵ Ibid. 181.

overwhelms me, scattering its singularities all about, in no relation to me nor to a moment determinable as the present.... No one has shown better than Maurice Blanchot that this ambiguity is essentially that of ... death.”⁶⁶ Barraqué is thus surrounded by a French intellectual lineage—contemporaneous with Blanchot and Foucault, presaged by Sartre and carried on by Deleuze—which worked with an affirmative notion of death. For this tradition of thought, death is not simply a future negation of the self, but a poetic standpoint whose meaning removes the inhibitive boundaries of self-identity within human existence. This freedom spills into philosophical concepts, and, as I have argued, music. The act of removing limitations is not a passive or destructive one, necessarily, but one where the forces, perspectives, and meanings within an ostensible unity are dispersed out into a larger milieu, where they can then create new relations and new meanings.

The bridge between Barraqué’s general existential perspective and his actual compositional practice thus relies on the formation of an affirmative account of this force of dispersal—not fragmentation or destruction, but a setting-free of musical and ontological forces. It began with the question of death in Heidegger, which, in later French thinkers came to influence a version of the self whose existence was not oriented toward the authentic unity of being, but rather dispersed outward into the world, to a diversified being accomplished poetically. This outward dispersal did not merely characterize an inauthentic and mistaken perspective on death, but came to define human existence, at least the poet’s existence, as dissolved into an immanent relation with the diversity of the world. This dissolution, which then allowed being to be oriented outward, was characterized not by Heidegger’s ultimate dismissal of the inauthentic cares of the world, but as Blanchot said, an ‘authentic inauthenticity’ that was open to the plurality of the world. Freed from over-determined concepts of unity, new relationships can emerge, relationships that are not self-identical.

Because what is at stake is dissolution and not fragmentation, it is possible to relate this process directly to music. When unity is dissolved it disperses outward into the world. This chemical metaphor does not prioritize the solute. There is no lost whole to be nostalgic for, nor a future synthesis that gives meaning to the present. It is unconvincing that there is some future

⁶⁶ Gilles Deleuze, *The Logic of Sense*, trans. Mark Lester (New York: Columbia University Press, 1990). 151.

unity that Barraqué seriously expected to accomplish with respect to a complete cycle for *The Death of Virgil*. Barraqué's idea of 'incompletion without end' accounted for a force of creativity that was not oriented toward closure, but to the proliferation of perspectives and experiences. This creative force could begin with compositional decisions, but flowed outward to musical experience and perhaps even to self understanding.⁶⁷

Fragmentation, on the other hand, must maintain a difference in kind between sorts of fragments. The fragment points to an object or self which, in some utopian state, may be pieced back together. The musical fragment, the fractured life, the shard of a broken vase—these are not interchangeable for all the logical similarity in their fissures. Unlike fragmentation, though, the act of dissolution does not leave explicit differences among the pieces. A fractured life may closely relate to a style of musical fracture, but a dissolved or dispersed life may very well intermingle with a dispersed musical work in the expressive content of a vocal line, a moment of recognition between two distantly related moments.

In dispersion, the musical and the subjective do not require an analogical relation, but enter into direct communication. Deleuze argued the most extreme version of this position with respect to the 'chaotic' literature of Mallarmé and Joyce: "The identity of the object read really dissolves into divergent series defined by esoteric words, just as the identity of the reading subject is dissolved into the decentered circles of possible multiple readings."⁶⁸ This mutual freedom of literary creation, perception itself, and personal self-identity to dissolve and interact with one another at a level that Barraqué called 'cellular' or Deleuze called 'molecular': a moment of expressive gesture, of text, and of experience, of recognition, of attention led away from unity toward the complexity of relations among a diversity of moments.

In *Le temps restitué*, Barraqué's commitment to loose motivic relations, exemplified in the relations among text settings but decisive for the overall organization of the work, is not an

⁶⁷ Henrich makes the striking observation that the serial process of *Le temps restitué* performs the same twist as Joyce's *Finnegan's Wake*, where the incompleting serial process at the end of the work is the first half of the abruptly started second half of the process at the beginning of the work, circling around on itself. Henrich, "Des Techniques Sérielles Dans Le "Temps Restitué"."

⁶⁸ Gilles Deleuze, *Difference and Repetition*, trans. Paul Patton (New York: Columbia University Press, 1994), 69.

apologetic or nostalgic reflection of a transcendental unity. The way his choral counterpoint fluctuated between coherent unity and chaotic dispersal realized the sound of a proliferation of voices that live within his chosen text. His solo vocal writing for the soprano accomplished—even within the single voice—a creative interdependence within the instrumental context. In this piece, dispersion is dramatized within different compositional elements, moving from coherence to dissolution, continuity to discontinuity. The open relations among different ideas create open possibilities of understanding the music. As Barraqué wrote of Debussy’s music, “If Debussy allows us to imagine, in our creation and from our creation, a plurality of analyses, a panoramic perception, a diversity of musical understanding, then it is good for one to have the courage to take on a renewed adventure, and without ceasing, submit to the inquietude.”⁶⁹ For Barraqué, creativity made new demands. Whether in the construction or even the experience of his music, the saturated complexity of his style grew from the intensity of life taken in the full implication of its temporality.

⁶⁹ Barraqué, *Écrits*, 273. Si Debussy nous a permis d’imaginer, dans notre création et en dehors de notre création, une pluralité d’analyses, une perception panoramique et diverse de l’entendement musical, c’est bien, qu’il avait le courage d’assumer une aventure renouvelée et sans cesse soumise à l’inquiétude.

Chapter 7: Conclusion

The discourses I have described in the preceding chapters were formed by the convergence of multiple issues of musical aesthetics into an ostensibly univocal discussion of time. The variety of ‘times’ that emerged did not share the stability of a clear concept, but a shared problem. As composers scrutinized each musical parameter in order to cultivate new approaches to composition, they confronted stylistic decisions that affected something so basic to their understanding of music that they were led to frame it in terms of time itself. Likewise, in their search for a more synoptic theoretical foundation, something ‘axiomatic’ as Boulez might say, the ‘unity of time’ that musical elements shared seemed to provide this grounding. Often, the generative element to this problem was precisely that attempt at a synthesis of different musical elements within a single theoretical approach. The perceived need for some sort of theoretical foundation suggests why the concern with time was so pronounced with serial composers.

As Adorno rightly cautioned though, the theoretical approach to various musical parameters under the concept of time is in tension with the realization and experience of music. The question of musical experience constituted another, and as I have argued, a more central reason that composers occupied themselves with time. This concern with experience and time does not so easily reconcile with the efforts at describing the unity of time in music from a theoretical angle, but the way in which composers approached the two issues together was another productive site of thinking. This site was quite large: music is temporally heterogeneous, not only at the scale of perception and memory, but also in the temporal disclosure of human time and temporality. If time is not a dimension down to which all musical phenomena must be reduced, but rather, as Souris might say, a creative site of conceptual polyphony, then it is possible to find within that heterogeneity a concrete historical image of that era. A history of musical time is thus best understood as a history of theoretical creativity.

While I have treated each composer in relative isolation in each chapter, I have also tried to demonstrate the constant presence of a tightly knit intellectual community. If, in the end, these composers did not make their mutual influences entirely transparent, they can, at the very least, be found in the audience of their community’s shared questions. Just as Boulez’s 1960 lectures were written ‘at Darmstadt for Darmstadt,’ many other lectures, essays, radio broadcasts, books,

and musical works from these composers were in a real sense often written for each other.¹ While this situation did not have hard and fast boundaries, there are certain general historical horizons that mark off a provisional conclusion to the era. By the end of the 1950s, Paris was no longer home to Boulez and Stockhausen; Goeyvaerts was not even composing; Messiaen's class was attended by a new, diverse, international collection of composers. The end of the 1960s also saw a number of conclusions: Adorno passed away in 1969, Stravinsky in 1971, Barraqué in 1973, and the *Domaine Musicale* concerts also ended in 1973. Boulez's final lecture at Darmstadt was in 1965, Stockhausen's was in 1974 until his return in 1996. By the early 1970s, then, the historical convergence that occurred in the early 1950s dissipated to such a degree that the influences so prevalent through the 1950s and 1960s no longer held the same sway.

While these composers constituted a specific nexus of discourse, it should be noted that a number of other composers lived in close proximity to these theoretical concerns, but whose individual trajectories placed them outside the immediate context I have been trying to develop. For example, Carl Dahlhaus points out the unique contribution that the German composer Bernd Alois Zimmermann gave to the philosophy of time and music during the same era.² As I briefly mentioned, the Bergsonian heritage surveyed in Chapter 2 should include a more extensive study of Dieter Schnebel and Henri Pousseur. The recent interest in the philosophical work of Vladimir Jankélévitch also deserves note with respect to his own Bergsonian interpretation and his concern with the music of Debussy.³ Iannis Xenakis's concept of time, perhaps most closely allied to the dimensionality of mathematics, could be framed with the same intellectual world that I have sought to illustrate.⁴

¹ Boulez, *On Music Today*, 5.

² Carl Dahlhaus, "'Kugelgestalt der Zeit': Zu Bernd Alois Zimmermanns Musikphilosophie." *Musik & Bildung: Zeitschrift Für Musikerziehung* 10, no. 10 (1978): 633-36; Bernd Alois Zimmermann, *Intervall und Zeit: Aufsätze und Schriften zum Werk*. (Mainz: Schott Musik International, 1974).

³ Vladimir Jankélévitch, *Debussy et la mystère de l'instant* (Paris: Plon, 1949).

⁴ Iannis Xenakis, *Formalized Music: Thought and Mathematics in Composition* (Hillsdale, NY: Pendragon Press, 1992).

And to be sure, the early 1970s was by no means an end to the discussion of time. Considering the extent that Boulez and Stockhausen influenced the avant-garde throughout the second half of the twentieth century, it is no surprise that the interest in time maintained a certain amount of intellectual capital for later composers. In certain ways, Brian Ferneyhough's Darmstadt lecture in the late 1980s, 'On the Tactility of Time,' picks up where the earlier Darmstadt composers left off two decades earlier.⁵ Ferneyhough's discussion of his work *Mnemosyne* (1986), focuses on "situations in which alterations in the flow of time ... becomes sensually palpable."⁶ Another Darmstadt lecture, given by Gérard Grisey in 1980, attempts to move beyond the ideas of Boulez, Stockhausen, and Messiaen towards a concept of time based on degrees of complexity. While his ideas are mostly derivative of the preceding generation, it is notable that he gives explicit attention, like Ferneyhough, to the performative and experiential elements that time invites.⁷ George Crumb's occupation with time did not manifest itself extensively at the theoretical level, but can be heard within the thematic titles of his notable works, *Echoes of Time and the River* (1967); 'Magic Circles of Infinity' and 'Abyss of Time' from *Makrokosmos* (1972); as well as the structural divisions within *Vox Baelanae* (1971). A number of other notable musical works of the second half of the twentieth century took up the theme of time in some way. If these works seemed to be removed from the discourse of the European avant-garde, they nevertheless access the same cultural capital that the avant-garde had originally laid claim to and grew out of very similar aesthetic positions. Charles Wuorinen's well received electronic work *Time's Encomium* (1969), Lukas Foss's *Time Cycle* (1960), and Grisey's works *Tempus ex Machina* (1979), *le temps et l'écume* (1988-89), and *Vortex Temporum* (1994-96) all suggest that at least certain composers remained occupied with the theme of time in their music, as they followed their own paths from the serial and electronic world of the 1950s.

On the other hand, the early 1970s also saw a more articulate opposition to the discourses I have described. In addition to the many biographical reasons that the early 1970s saw an end to

⁵ Brian Ferneyhough's 1988 Darmstadt lecture, published as Brian Ferneyhough, "The Tactility of Time," *Perspectives of New Music* 31 no. 1 (1993).

⁶ *Ibid.*, 21.

⁷ Gérard Grisey, "Tempus ex Machina: A Composer's Reflection on Musical Time," *Contemporary Music Review* 2, no. 1 (1987): 239-275.

certain discussions about time, it was also in that era when the question of musical time became, to some, as indicative of the disengaged, over-intellectual world of the avant-garde, which did not find a place within the increasingly political concerns of some composers even within the European circles. Although Cornelius Cardew was the English translator for Stockhausen's essay "...how time passes...", his radical shift in the 1960s, expressed in his famous diatribe 'Stockhausen Serves Imperialism' follows a traditional Communist critique of the avant-garde, rejecting its ephemeral subject matter as politically uncommitted.⁸ Cardew does not comment on the specific topic of time, but his concern with the ideological significance of Stockhausen's thought directly opposes the avant-garde on the abstract style of theory through the 1950s and 1960s. Other composers, while not so vocally opposed to the rarified discourse on musical time, framed their music with similarly political overtones and did not produce extensive theoretical discourse that approached abstract issues like time. For example, the group of Italian composers engaged in the European avant-garde, including Luciano Berio, Luigi Dallapiccola, and Luigi Nono, shared many stylistic similarities to the composers in Paris and Darmstadt, but often seemed more concerned with implicit or explicit political themes than philosophical issues of theory.

For certain composers, who defined themselves in relation to or opposition with the post-war avant-garde, the discussion of 'time' became a site of discursive rupture. One interesting case that deserves more attention is George Rochberg. Rochberg's theoretical concern with musical time paralleled his own break from the avant-garde. His essays from the early 1960s, before his radical shift away from serialism, build on the thought of Susanne Langer and others about the nature of musical time from an abstract, theoretical voice that worked to defend the post-tonal world.⁹ After his famous rejection of serialism, Rochberg does not return to extensive theoretical discussions of time, though a number of his works return to this theme in a different, tonal context.

⁸ Cardew, *Stockhausen Serves Imperialism*.

⁹ George Rochberg, "Duration in Music" (1960) and "Concepts of Musical Time and Space" (1963) in *Aesthetics of Survival* (Ann Arbor: University of Michigan Press, 2004)

One major arena in which time has been renewed as a primary concern is the development of phenomenological approaches to music analysis since the 1980s. A host of analytical discussions have developed out of the direct application of philosophical approaches to time to the study of both new music and common practice music. Thomas Clifton begins his phenomenology of music with an extended reflection on the temporal bases of perception and its relevance for music analysis.¹⁰ David Lewin's later work relied on the phenomenology of time to further his unique theory of transformational analysis.¹¹ Judith Lochhead's phenomenological approach to music analysis relies on the development of analytical perspectives from the cultivation of the concept of time in Husserl and phenomenology.¹² Christopher Hasty's analysis of rhythm also relies extensively on phenomenological thoughts of Husserl, Bergson, and other philosophical treatments of time.¹³ All of these approaches to music and time deal with twentieth century music through twentieth century philosophical thought because of the theoretical productivity of these ideas, not through any historical arguments about their relationship. This productivity, though, suggests that the theoretical horizons of the mid-century still hold a potential for post-tonal theory, given a critical enough perspective on the historical biases that have cast doubt on a broader relevance of a number of composers' ideas.

If general questions of form and structure, the meaning of unity and variety, continuity and discontinuity, dialectics, style, and the nature of the listening experience became, for a certain moment at least, issues of time, it is equally important to note that they were not always related in such a way, nor did they necessarily remain connected to the specific topic of time in subsequent decades. Similar to a visual focal point of a lens, the myriad trajectories of thought that coalesced under the theme of time diverged again into a variety of discussions as composers

¹⁰ Thomas Clifton, *Music as Heard: A Study in Applied Phenomenology* (New Haven: Yale University Press, 1983).

¹¹ David Lewin, *Studies in Music with Text* (New York: Oxford University Press, 2006); Brian Kane, "Excavating Lewin's 'Phenomenology,'" *Music Theory Spectrum* 33 no. 1 (2011): 27-36.

¹² Judith Lochhead, *The Temporal Structure of Recent Music* (Dissertation: Stony Brook University, 1982).

¹³ Christopher Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1996).

continued along their different developments. Following these trajectories past the Paris and Darmstadt of the 1950s and 1960s reveals that these threads of thought blurred into a diversity of issues: psychology, phenomenology, physics and acoustics, developments in technology, issues of narrative, and a host of other matters. The various concepts of time that composers of the post-war generation developed transformed in quite a few different ways by the end of the twentieth century. Certainly in some cases the problem remained one of time, but then also became issues of ‘listening,’ of ‘processes,’ ‘sounds,’ ‘things’ or even ‘places.’ What were once issues of musical *time* lost their metaphysical tinge, and what had been implicit premises about embodied, experienced music became explicit in a reshuffling of topics and terms.

Many of the musical issues that were addressed under the notion of ‘time’ have followed philosophical paths into other frameworks of thought. A variety of phenomenological and post-phenomenological methods have developed that are not primarily concerned with time, or have sublated time into broader themes.

Edward Casey presents a line of thinking about time that provides a very different conception of the synthesis of space and time than that of the early twentieth century. Rather than reduce time to the dimensionality of space-time as Minkowski had proposed, place orients time toward a synthesis of event. The concept of place and of event preserves the conceptual independence of time while also describing a broader context: from the abstraction of space-time to the embodiment of place. “Place and region gather space and time in emergent events of construction and exchange.”¹⁴ The interest in music and place reflects the productive route into questions of time via a more syncretic perspective that involves embodied, emplaced, historical accounts of music. Other theoretical approaches take on topics that were at one point considered problems of time. The specific focus on ‘sound’ studies approaches precisely those issues that were once considered to be in the realm of the question of time. Katherine Kaiser’s study of Stockhausen’s work within the electronic studio shows how the creative engagement with

¹⁴ Edward Casey, “How to Get From Space to Place in a Fairly Short Stretch of Time: Phenomenological Prolegomena,” *Senses of Place* (Santa Fe: School of American Research Press, 1996), 42.

technology revolved around basic issues of performative embodiment.¹⁵ That this was a concern of Stockhausen himself is not immediately evident from his lectures and writings, but from both the question of time and of sound, these concerns become strikingly clear. Other theoretical frameworks like ‘thing’ theory or discussions of ‘process’ follow the philosophies of Heidegger, Whitehead and others who were concerned with time, but contextualized it with different philosophical issues.¹⁶

Parallel to the avant-garde discourse concerned with time throughout the twentieth century, there was a large concern for the question of temporality within literary narrative. The literature of the twentieth century called for a reappraisal of time just as much as the scientific, musical, and other worlds. The studies of Marcel Proust alone take the issue of time in a variety of directions. Julia Kristeva, Deleuze, and Paul Ricoeur have all provided significant studies of time in literature that have considerable potential in their application to music.¹⁷ Peter Kivy also draws connections between the novel and the musical work with respect to their similar temporal character, where their own artistic time is different than real time.¹⁸ From a theoretical perspective, Adlington takes up Paul de Man’s account of temporality to approach the music of Ligeti and relates it to Adorno.¹⁹

It is from a slightly different response to de Man that Frederick Jameson declares the end of temporality, a level of theoretical exhaustion about the discussion of time that prevents any

¹⁵ Katherine Kaiser, *Listening to Recorded Voices in Modern Music*. (Dissertation: Stony Brook University, 2015).

¹⁶ Cf. F. David Martin, “The Power of Music and Whitehead’s Theory of Perception,” *The Journal of Aesthetics and Art Criticism* 25 no. 3 (1967):313-322.

¹⁷ Julia Kristeva, *Proust and the Sense of Time* trans. Stephen Bann (New York: Columbia University Press, 1993); Gilles Deleuze, *Difference and Repetition* trans. Paul Patton (New York: Columbia University Press, 1994); Deleuze, *Proust and Signs* trans. Richard Howard (Minneapolis: University of Minnesota Press, 2000); Paul Ricoeur, *Time and Narrative* trans. Kathleen McGlaughlin and David Pellaur (Chicago: University of Chicago Press, 1984).

¹⁸ Peter Kivy, “Continuous Time and Interrupted Time: Two-Timing in the Temporal Arts,” *Musica scientiæ: The journal of the European Society for the Cognitive Sciences of Music* (2004).

¹⁹ Robert Adlington, “Musical Temporality: Perspectives from Adorno and de Man,” *Repercussions* 6 no. 1 (1997)

further inquiry from gaining a meaningful hold.²⁰ Indeed, there is some validity to Jameson's position when perusing the immense literature about time that has emerged over the last century. However, if Jameson is exhausted by the study of temporality, perhaps it is because he does not acknowledge that the proliferation of temporality in the literary world, to say nothing of the musical world, develops parallel to, or more so within, the creative act itself. This creativity, of course, is not without its own limits. Ultimately, the mid-century composers engaged such a wide variety of sources for their ideas on time that their horizons do provide a large arena for philosophical thought about music today. If the concerns with their problematically modernist deployment of their thought are addressed, much of this twentieth century discourse remains a valuable tool for current thought. After all, to echo Adorno, merely recognizing the limits to a discourse, we do not thereby escape it. In fact, in certain respects, the scope of thought implicit in the composers I have addressed is quite large, more expansive than many contemporary considerations that accept the merely dimensional, or at least one dimensional concept of time. There is an invitation in these horizons to renew the human dimension of the question of time, to renew the Bergsonian and phenomenological ways of thinking that do not merely reduce down to dimensionality. If there is a valuable lesson to be taken from these composers, it is the validation of following intuitional approaches as modes of grappling with the human complexities of musical time. This position provides at the very least a revival of what has the danger of becoming a somewhat marginal discussion about music. It also sheds light on a more basic invitation that arises from this study, namely that the answer to the question is not merely one of discovery, but also a creative process. The arena that has been simultaneously opened up and circumscribed by so many intellectual horizons defined the problem and definitions but also the criteria of consistency of ideas, their productivity, and even their meaningfulness. This dissertation has thus reconstructed composers' ideas in this way, both as a grounding of a theoretical approach and a creative revision of its results.

²⁰ Fredrik Jameson, "The End of Temporality," *Critical Inquiry* 29 no. 4 (2003): 695-718.

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Appendix: Text given in Bruzzichelli edition of *Le temps restitué* of Barraqué's adaptation of Kohn translation

Cf. Hermann Broch, *La Mort de Virgile*. Translated by Albert Kohn. Paris: Gallimard, 1955. Pages 93-99.

Cf. Broch, *The Death of Virgil*. Translated by Jean Starr Untermeyer. New York: Pantheon Books, 1945. Pages 97-104

LA DESCENTE

LA LOI ET LE TEMPS

La loi et le temps,
nés l'un de l'autre,
l'un l'autre s'abolissant et toujours se réenfantant
se reflétant l'un l'autre et, visibles seulement par ce reflet,
chaîne des images et des contre-images
enferment le Temps, enferment l'archétype
sans jamais totalement les saisir et pourtant
devenant toujours plus intemporelle,
jusqu'à ce que dans un dernier symbole,
où l'image de la mort s'unit à celle de toute vie,
figurant la réalité symbolique de l'âme,
son domicile, son intemporel instant, et ainsi,
la loi manifestée en elle
sa nécessité.

SYMBOLE DE NUIT

...c'est au sien de la nécessité que tout s'était accompli...
La nuit va-t-elle lui révéler son dernier symbole, à lui dont l'œil devra se voiler,
lorsque la nuit ouvrira la sien ? ... les choses terrestres s'étaient rapprochées
car celui qui a franchi le premier portail de la terreur, celui-là est
enclos dans le vestibule qui conduit à un nouvel inconnu... doucement et sans
plus rien attendre... libérée du hasard...

PORTAIL DE LA TERREUR

car celui qui a franchi le premier portail de la terreur, est entré dans
le vestibule de la réalité, puisque sa connaissance, se découvrant
elle-même
commence à comprendre la nécessité dans l'Univers,
la nécessité de tout événement,
comme la nécessité de son âme propre.
Car celui qui fait cette expérience,

il est engagé dans l'Unité de l'existence,
dans l'instant pur, partage de l'Univers et de l'homme,
de son âme propriété la plus inaliénable,
en vertu de laquelle elle flotte par nécessité,
au dessus de l'abîme ouvert du Néant menaçant,
au dessus de l'aveuglement de l'homme ;
car il est engagé dans l'instant perpétuel et du savoir fait d'ignorance,
dans la pré-science divine de l'homme,
ignorante, puisqu'elle demande et doit demander,
douée de savoir puisqu'elle précède toute question,
don divin, conféré à l'homme dès l'origine des temps
comme sa plus intime nécessité humain,
... l'homme tremble de répondre, sa connaissance tremble de répondre
l'homme est lié à la connaissance, la connaissance
est liée à l'homme,
tous deux liés entre eux, tremblant de répondre,
écrasés par la divine réalité de la pré-science
par la immense réalité enfermée dans la question riche de savoir,
... tout connaissance terrestre
et qui pourtant, ici-bas seulement,
dans le monde terrestre, peut avoir, doit avoir une réponse,
réalisée dans la monde terrestre,
comme le jeu alterné de la dualité, formatrice du monde
la réalité métamorphosée en vérité, la vérité en réalité,
d'après l'ordre auquel l'âme est astreinte,
sa nécessité.
Car l'âme tendue pour la question
est engagée dans sa vérité salvatrice,
destinée à se connaître, destinée à s'interroger, destinée à son pouvoir
créateur,
tendue entre la sécurité du savoir et la capacité de connaître
... et de cette façon,
invoquée par le savoir originel, invoquée par cette question
qui connaît le non-hasard de l'existence, générateur d'unité
elle est donc appelée au savoir enfanté par la connaissance,
... appelée à la connaissance de la loi dépouillée du hasard ;
l'âme est ainsi dans un perpétuel désert,
... vers son incarnation et son extra-carnation
dépouillées l'une et l'autre du hasard dans la connaissance de la loi,
son point de départ et son but unis dans les sphères,
faisant de l'homme...
... Car l'homme est engagé
dans la conscience de la perception fondamentale de son âme,
... la perception fondamentale
de ses actes et de sa quête, de son vouloir et de sa pensée, de ses rêves

et il est ouvert au non-hasard infini du réel,
ce symbole le plus compréhensif et le plus puissant,
symbole doux, symbole de bronze et très véridique,
de la réalité de son moi,
vers lequel il veut retourner et retourne à jamais,
engagé dans l'instant de son propre symbole,
afin qu'il lui devienne sa constante réalité ;
car cette instant dans lequel l'homme est engagé
est le « quand même » de sa convocation terrestre,
le « quand même » de son inextinguible liberté
et de son inextinguible volonté de connaître,
si inflexible,
qu'elle devient plus grande que l'insuffisance terrestre,
se dépassant elle-même,
devient le « quand même » titanesque de l'humanité.
En vérité, l'homme est engagé dans sa tâche de connaître,
et rien n'est capable de l'en écarter,
pas même l'erreur inévitable,
fortuite et peu de chose en présence
de sa tâche, affranchie de hasard.

...L'INACHÈVEMENT SANS CESSÉ

... mort... souffle-fuyant mais cherchant la mort, cherchant mais fuyant
l'ouvre... poussé... et plus loin... repoussé de nouveau vers la poésie, comme
si elle pouvait s'apparenter à la mort... oh!.. oui oh! si grand que soit l'échec
de cette vie... toujours et éternellement condamnée à l'échec... parce que,
il reste attaché à tous les effrois de l'erreur...
même l'erreur.

CAR CE N'EST QUE PAR L'ERREUR

car ce n'est que dans l'erreur, ce n'est que par l'erreur,
où il est inéluctablement engagé,
que l'homme evient le chercheur qu'il est,
l'homme que cherche.
Car l'homme a besoin d'accepter les vains efforts,
il lui faut accepter leur terreur, la terreur de tous les errements,
et la reconnaissant, la boire jusqu'à la lie,
il faut qu'il en prenne conscience,
non pur se mortifier, mais
parce que la terreur ne peut être surmontée
que par cette conscience connaissante,
parce qu'alors, seulement, il sera possible
de traverser la porte de corne de la...
pour atteindre à l'existence ;
c'est pourquoi l'homme est engagé dans le domaine des insécurités,

engagé, comme si aucun navire ne le portait plus,
bien qu'il flotte et s'éloigne dans une barque flottante,
c'est pourquoi il est engagé dans les espaces sans cesse renouvelés,
de sa prise de conscience,
dans les espaces de son moi, prenant conscience de soi-même,
prise de la conscience du Moi – destin de l'âme humain.
Mais celue derrière qui
se sont refermés les lourds battants du portail du terreur,
celui-là a atteint le vestibule de la réalité et le flot non discerné
sur lequel il flotte et glisse,
ce non-discernement devient le fondement de son savoir,
car il est le courant de croissance de son âme,
l'inachèvement de son moi, qui jamais ne peut être achevé,
et qui pourtant s'épanouit en unité
dès que le moi prend conscience de soi-même, —
rendu impérissable par la croissance, le courant de l'unité de l'Univers
est révélé à sa conscience, est contemplé par lui
en une simultanéité dont la présence immédiate
unit tous les espaces qui contiennent... en un espace unique
en un seul et unique espace de la source originelle,
et que, comme celle-ci,
abrite le moi en elle, tout en étant contenue par le moi,
est embrassée par l'âme tout en embrassant l'âme,
repose au sien du temps et conditionne les temps,
est attachée à la loi de connaissance et crée la connaissance,
voguant dans son courant de croissance,
voguant dans le flottement de son devenir et de sa croissance,
qui, seul,
est la source de réel,
se grandes et surnaturelles ces irradiations mutuelles de Moi et de l'Univers,
que voguer et être contenu, que la délivrance et l'emprisonnement
indistinctement se confondent en une commune transparence,
oh! d'une si impérissable nécessité,
oh si immensément transparents que dans l'isolement des sphères supérieures,
seulement accessible au regard, seulement accessible au temps,
connu dans le regard et dans le temps
se reflétant dans le regard et dans le temps, se reflétant dans le visage
humain,
ouvert et levé vers le ciel par une douce main d'airain,
enserré dans la trame du destin
enserré dans la trame des étoiles
le don promis de la non-vanité s'embrase,
à jamais affranchi du hasard,
temps accordé par la grâce,
réconfert terrestre, ouvert à la connaissance!