THE ORIGINS OF SYNTHETIC TIMBRE SERIALISM AND THE PARISIAN CONFLUENCE, 1949–52

by

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LIST OF ABBREVIATIONS

AMS	American Musicological Society
Darmstadt	Darmstadt Summer School (Darmstädter Ferienkurse...)
GRM	Groupe de Recherches Musicales
GRMC	Groupe de Recherches Musicales Concrète
IGNM	Internationale Gesellschaft für Neue Musik
INA	Institut National de l'Audiovisuel
ISCM	International Society for Contemporary Music
PSF	Paul Sacher Foundation. Basel, Switzerland.
SIMC	Societé internationale pour la musique contemporaine
TOM	Traité des objets musicaux, by Pierre Schaeffer
Viennese	Viennese School; Schoenberg School

ABSTRACT

The role of the three major composers of synthetic timbre serialism—Cage, Boulez, and Stockhausen—can be described through the standard model employed in the Hegelian dialectics of history: Cage is the father of extended serialism, Boulez is the composer of the Past, and Stockhausen the composer of the Future. The suggestion that Cage—and not Boulez—was the father of extended serialism will be argued in both historical and composition-technical terms.

By 1948 Boulez had combined Leibowitz's promotion of Webern's athematic music with Messiaen's applications of Hindu rhythm theory, and merged both with the art of Bach. Cowell in the 1930s designed serial theories and electronic instruments; he was at the forefront of a universal music in Bauhaus spirit. Cowell taught Cage 'new materials' composition and micro-macrocosmic structure. Around 1948 Cage discovered several forms of silence in Coomaraswamy, Meister Eckhart, Klee, Webern, Blanchot, and McCarthy, and conceived his own universal theory of music.

The Parisian confluence between 1949 and 1952 portrays the links between the origins of timbre serialism and several other modernist aesthetics as well as important related trends in poetry, art, science, and philosophy. During his 1949 sojourn in Paris, Cage's music and theories deeply influenced Messiaen, Goeyvaerts, Boulez, and Schaeffer. Messiaen composed *Mode de valeurs* inspired by Cage's 'parametrical thinking' and in response to Boulez's critique of his harmonic style. The neo-classicist Goeyvaerts turned to serialism and Boulez redoubled his theoretical speculations. New friends Cage and Boulez forayed into uncharted musical territory and, together with their associated circles, constituted a Transatlantic School. Boulez joined Cage in calling for

the establishment of music research centers. Schaeffer had access to such a center and, stimulated by Cage in 1949, invented concrete music as a new type of universal music. The neophyte-serialist Goeyvaerts introduced static serialism to Stockhausen who joined the Transatlantic School in 1952. Boulez introduced him to Cage, Stravinsky, Webern, electronic timbre serialism, and Schaeffer's experimental timbre alchemy. When Parisian pointillism was born in 1952, it included a heterogeneous group of electronic and instrumental timbre painters: Boulez, Cage, Goeyvaerts, Messiaen, and Stockhausen.

NOTE TO THE READER

Often quoted resources are cited in an abbreviated format. The name of the author is spelled in capital letters followed by the year of publication, such as 'AUTHOR 1999'. These resources and their abbreviated form of citation are listed on the next page.

Throughout the text, quotations are given in the original language. Foreign language quotations are provided with translations into English in the footnotes. Where possible we provided these English translations from published resources. Translations without attribution to a published text are provided by the author.

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INTRODUCTION

This dissertation focuses on the early phases of synthetic timbre serialism in the period 1949–52. Synthetic timbre serialism, sometimes simply called 'serialism', is also known as 'total', 'general', 'multiple, 'integral', or 'extended' serialism. We propose the two qualifiers 'synthetic' and 'timbre' for this category of serial music. Below we will discuss in detail the problem of naming musical repertories that, in their construction, involve series and argue the adoption of the qualifier 'timbre' for a wide range of serial works. 'Timbre' can be regarded as an open system or a variable formula, defined by physical and perceptual quantities in a multi-dimensional space; 'timbre' serialism moves into a multi-dimensional field beyond 'pitch-serialism'. The second qualifier 'synthetic' refers to the characteristic that distinguishes first and second phase post-war serialism: the microstructural composition of the material. The previous phase—'Classic' timbre serialism—also operated in several musical dimensions, but its compositional focus remained within the macrostructural levels of music.

Many composers, ideas, and works will at times take the spotlight in the pages that follow, but in these introductory remarks the three composers with the most important roles in the development of synthetic timbre serialism must first be unequivocally identified: John Cage, Pierre Boulez, and Karlheinz Stockhausen. Their respective roles can be summarized through the standard model employed in the Hegelian dialectics of history: Cage is the father of synthetic timbre serialism, Boulez is the composer of the Past, and Stockhausen the composer of the Future. This heuristic model, to be sure, is not employed for the first time: it was applied by René Leibowitz in the 1940s to profile the respective roles of the composers of the Viennese School: Schoenberg was the father

of dodecaphony, Berg was the composer of the Past, and Webern was the composer of the Future. It will be our task in this dissertation to provide the evidence and documentation to show that this striking, perhaps even revolutionary parallel is, in fact, neither accidental nor far-fetched. The suggestion that Cage—and not Boulez—was the father of synthetic timbre serialism—a thesis that deserves to be underlined—will be argued in both historical and composition-technical terms.

Perhaps less surprising, but definitely not widely noted, is the fact that Stockhausen's music and theories were also fundamentally shaped by his early encounter with Cage—first through the agency of Boulez in early 1952 and then, by the end of that year, through their first direct contact. When the German composer joined the 'inner circle' of what we will call the Transatlantic School, Boulez and Cage had already been communicating for three years about issues of musical complexity: it must be credited to the genius of Stockhausen that he was able to withstand the impact of the ideas from both the French and the American genius—without becoming a mere follower—and synthesize elements from both. His theory "...wie die Zeit vergeht..." (1956) or his *Gesang der Jünglinge* (1955–56) are prime witnesses of this synthesis, and offer elements that point far into the future. Because of the particular difficulties in uncovering the historic roots of Cage and Boulez—as well as the complex historic configuration that linked them with Stockhausen by 1952—a configuration we will call the Parisian confluence—we had to limit the core period of this study to 1949–52. Stockhausen's synthesis of Cage's and Boulez's worlds of music will only be shown in its first tender roots, in the very last chapters of this study, and Cage and Boulez therefore will be at the center of the argument.

The proposed thesis must overcome both historical and conceptual obstacles. We will address the historical problems first. The most often heard theory about the origins of synthetic timbre serialism involves a significant role for Olivier Messiaen and, in particular, his composition *Mode de valeurs et d'intensités* (Darmstadt, summer 1949). We will show that Messiaen's role has been misunderstood: by 1949 he had been following the leads given by Cage and Boulez. The latter had assimilated Messiaen's teachings by 1945–46 and his criticism of Messiaen's music is documented in the article "Propositions" of 1948.[1] There is overwhelming evidence that Cage—and not Messiaen—was the key figure who introduced 'parametrical thinking' in Europe after the Second World War. Moreover, we argue here that the music of Cage's *Sonatas and Interludes* and its implicated theories about composing the inner sound in terms of its acoustic parameters were the major direct influence on Messiaen's composition of *Mode* in the summer of 1949.

The equally widespread notion that Boulez—and not Cage— invented synthetic timbre serialism will be put to the test. In a first approach to this problem, we can note that the point of origin of the new aesthetic and its composition technique is veiled behind several layers of obscure dating problems as well as complex conceptual problems, involving the definition of post-war serialism. These problems are reflected in a widespread distress about, and—among specialists—criticism of, even the terms used to identify the music concerned. We will return to these issues below. The two points of origin for synthetic timbre serialism are in general identified as Boulez's composition of *Structures Ia* (1951) and, more solidly, the publication of Boulez's article

[1] Pierre Boulez, "Propositions", *Polyphonie* 2 (1948): 65–72, reprinted in *Points de repère* 1 (Paris: Bourgois, 1995), pp. 253–62.

"Eventuellement..." of 1952.[2] Without going at this point into a detailed argument about this important article, we can simply note that Boulez, towards the end of his exposition, could not avoid mentioning how closely his theoretical propositions matched Cage's ideas. He cited a number of them, but did not analyze in detail what he meant—leaving the reader the task to connect the dots. We will see that this public admission—within the theory that officially represented the 'birth certificate' of synthetic timbre serialism—only very superficially did justice to Cage. In reality, Cage's contribution outweighed that of Boulez.

Boulez, we must hasten to add, had perfected Classic timbre serialism prior to meeting Cage in 1949. Synthesizing influences from his teachers in the mid-1940s, Boulez developed the essential tenets of this 'first phase' serialism by 1945–46. Its origins are crystallized in a set of miniature compositions for piano: *Notations* (1945). By 1949 Boulez had perfected this earlier type of 'extended' serialism in his Second Piano Sonata (1946–48) and, perhaps even more impressively, in his String Quartet (1948–49, later known as *Livre pour quatuor*). Boulez's music had a tremendous impact on Cage when they became closest friends in 1949—Cage, extending his own prior music theory, strove to equal Boulez's 'syntactical' complexity. The gist of Classic serialism's theory was published in Boulez's article "Propositions" of 1948.[3] The chronology shows that the origins of 'first phase' serialism in Paris date to around 1945—a time at which Vienna-based Universal Edition was still under allied fire, mostly from Russian troops. Boulez had assimilated his teachers' offerings within the brief two-year

[2] Pierre Boulez, "Eventuellement...", *Revue musicale* 112 (May 1952): 117–48, reprinted in *Points de repère* 1 (Paris: Bourgois, 1995), pp. 263–295.
[3] Op. cit.

period 1944–46, but it does not follow from this meteoric development that the influence of his teachers was less formative. We will discuss, portray, and gauge the respective contributions of his three most important teachers: Andrée Vaurabourg, Olivier Messiaen and, last but not least, René Leibowitz.

We will begin with a reassessment of Leibowitz's background and his seminal role as the leader of Parisian dodecaphonists in the 1940s. Leibowitz developed an existentialist interpretation of the Viennese School and, in general, drew on a 1930s surge of French interest in German philosophy and literature. His involvement with the intellectual and artistic avant-garde in the Paris of the 1930s and 1940s gave Leibowitz the vision to *create* the three Viennese composers as an allegory of Hegelian dialectical history. In his book *Schoenberg and His School*, Anton Webern occupied the place of the future.[4] This powerful aesthetic endorsement—formulated in the early 1940s and soon reaching a worldwide audience through publication in major languages—should suffice to argue for the inclusion of Leibowitz in any account of post-war serialism. Not only did he bring the music of the Viennese to young composers as early as 1944, but his promotion of Webern as the 'composer of the future' became the source for the latter's importance to an entire post-war generation—an historic fact concealed by Boulez's later animosity toward Leibowitz.

[4] René Leibowitz, *Schoenberg et son école: l'étape contemporaine du language musica*l (Paris: Janin, 1947) and René Leibowitz, *Schoenberg and His School: The Contemporary Stage of the Language of Musi*c (New York: Philosophical Library, 1949). My insights into Leibowitz's relations with the Parisian world of artists, poets, and philosophers were helped greatly by Sabine Meine's recent dissertation on Leibowitz. Sabine Meine, *Ein Zwölftöner in Paris: Studien zu Biographie und Wirkung von René Leibowitz (1913–1972*) (Augsburg: Wissner, 2000). Although not comparable in scope, Reinhard Kapp's path-breaking earlier Leibowitz research should be mentioned at this point. Reinhard Kapp, "Im Schatten des Urbilds des Doubles," *Musiktheori*e 2, 1 (1987): 15–31.

Nevertheless, it must be stressed that Boulez had developed Classic timbre serialism by 1945–46—at a time when Leibowitz was his teacher. Nor can we forget the name of Andrée Vaurabourg, Boulez's counterpoint teacher from 1944–46. When one thinks of the development of timbre composition, one's attention should pause to reflect on the role Bach's art of harmony and counterpoint played for Boulez. In Bach's music Boulez found the model for his life-long obsession of synthesizing vertical and horizontal aspects of musical structure.

In the 1930s Messiaen, in his mid-twenties, had married talented composer and violinist Claire Delbos and was a founding member of *La Jeune France*, which provided a forum for the music of young French composers and contemporary music from other countries. Contemporary witnesses as well as the scholarly work of Nigel Simeone were particularly helpful in bringing back the radical *rythmicien* Messiaen, composer for Ondes Martenot, the instrument of the future that took Paris by storm in the 1930s and 1940s. He even composed quarter-tone music. Jean Boivin's monograph on *La classe de Messiaen* proved an invaluable resource of primary source materials, especially in regard to hard-to-document clandestine classes in occupied France.[5] In the early and mid-1940s, Messiaen was at the forefront of musical developments in Paris and his name had been noted beyond the borders of France. A complex mosaic of aesthetic shifts and rifts developed after 1945, stretching the gamut from a Messiaen compared to an 'atomic bomb' to the rather more peaceful, dedicated collector of bird songs. In the interval, some notable ups and downs occurred in the relationship between Boulez and Messiaen.

[5] Jean Boivin, *La classe de Messiae*n (Paris: Bourgois, 1995).

We will show that, in the eyes of Boulez, Messiaen *lost* the distinction of being an avant-garde composer at the very latest by early 1948.

The repercussions of this shift have hitherto not been widely understood; many authors believe that Messiaen's *Mode* inspired Boulez to 'invent' synthetic timbre serialism in his composition *Structures Ia*. In their view Messiaen's *Mode* demonstrates the latter's continuing leadership well into the early 1950s. We will provide arguments showing that Messiaen wrote *Mode* in response to Boulez's criticisms of his harmonic writing. But we must now turn to the composer whose music, arguably, had an ever-greater part in the composition of *Mode*: John Cage.

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* *

We proposed that Cage was the father of synthetic timbre serialism. The word 'serialism'—and our understanding of its essence—can help us to see better Cage's input in the origins of synthetic timbre serialism. As we will argue in more detail below, the conceptual key to post-war serialism lies in its fundamental aesthetic choice: timbre—as a non-linear, multi-dimensional, open-ended concept and a new listening approach—replaced the traditional hierarchies based on pitch and rhythm. Historically, however, Cage's predestination to become the father of synthetic timbre serialism lies deeply hidden in his formative years. The key to their secret is found in the only recently appreciated, controversial early history of his formidable and brilliant teacher: Henry Cowell.

While Cage liked to present himself as a student and, more importantly, heir of Schoenberg, his links to Schoenberg's music and aesthetics appear tenuous—at best. We

will discuss Cowell's childhood, education, and formative period and portray his links with European culture. His mother Clarissa Dixon, a poet and person far ahead of her times, provided him with a complete education in home schooling; he grew up with the music of the Classics, Romantics, and Modernists. He was a precocious genius, who read hundreds of books before the age of fourteen and composed nearly one hundred works before the age of seventeen. In his early music he imitated European models from all periods but, after coming in contact with Leo Ornstein's music in New York in 1916, he adopted a radical tone-cluster technique and began a career as ultra-modern pianist and composer.

He completed a proto-serial theory and, by the 1930s, Cowell's ultra-modern music was famous in America, Europe, and Cuba. His connections with European avant-garde and modernist movements were unmatched by any other American. He had toured Europe no less than five times in the 1920s and 1930s. His study of world music in Berlin in 1931 was also important. Here he became acquainted with the largest collection of world music and learned to play the gamelan. He also organized lectures on contemporary musical materials at the Bauhaus. At the same time Cowell was the most active promoter of modern music in America. We will see that, to an overwhelming degree, Cage followed the exact path outlined by Cowell in the 1930s.

Cowell's career came to a drastic halt in 1936, when he was incarcerated in San Quentin and sentenced to fifteen years in prison on a morals charge.[6] He was released and pardoned in the 1940s but, as a sex offender, Cowell had to tread carefully and became a quite different person. He started a new life on the East Coast and many of his

[6] Michael Hicks, "The Imprisonment of Henry Cowell," *Journal of the American Musicological Society* 44, 1 (Spring 1991): 92–119.

friends needed to relate to him in new ways, perhaps often different in private than in public.

Cowell's influence on Cage will become evident in the discussion of the music that characterizes Cage's formative period in the 1930s. In his own texts, Cage remained silent about Cowell's direct influence although, at times, he does praise Cowell in the most general terms. Cowell's composition techniques are widely regarded as Cage's innovations. In addition, there is a deep silence about Europe, which makes Cage's silence about his teacher Cowell even denser. Cage's involvement with Bauhaus principles began in the 1930s and continued throughout the 1940s and the early 1950s. These historical influences were the constant driving forces behind Cage's experimental, non-academic aesthetics, a fact that becomes only more relevant when we perceive that Cage's interest in Eastern spirituality and the universalist Christian mysticism of Meister Eckhart were mediated by European forerunners too, in particular the English aristocrat and eminent art historian Ananda Coomaraswamy, whose appreciation for certain English philosophers of the mid-nineteenth century was shared by Walter Gropius, the founding father of the German Bauhaus.

Our review of Cage's intellectual and musical developments culminates in early 1949, with the successful New York premiere of his *Sonatas and Interludes* for prepared piano and the publication of a brilliant theory of modern music, which we will name Cage's 'universal theory of music'. It must have been after January 1948 that Cage found out that silence could be the "ultimate possibility of speech." He had been aware of both 'silence' and Webern prior to this discovery; the new element—an epigraph on Webern's music found in Leibowitz's monograph *Schoenberg and His School*—gave

Cage the musical key to his 'universal theory of music'. The theory was a polemical call —explicitly likened to an inventor's patent—that all composers should abandon harmonic structure and submit to the law of temporal structuring (universal, but discovered by Cage). Cage's proof was based on the fact that silence and sound have only one parameter in common: duration. Since both silence and sound form the necessary ingredients of music, Cage argued any rational structure must be time-based. This 'universal theory of music' was the source of much pride when Cage traveled to Europe in 1949 and met with Boulez and other Parisian composers.

In the spring and summer of 1949 Cage sojourned in Paris; Boulez introduced him to the Parisian elites and, at several occasions in 1949, Cage's music for the prepared piano music was heard in the French capital. He met with Messiaen, Schaeffer, and Goeyvaerts and both Cage's music *and* his theories had far-reaching effects on each of those composers. It bears repeating that Cage—and not Messiaen—introduced the so-called 'parametrical thinking' in Europe. Cage was the major catalyst in the generalization of timbre serialism from the level of musical syntax into the microstructure of sound.

Between 1949 and 1952 Boulez and Cage influenced one another, as they shared their compositional ideas and projects in their correspondence.[7] They also exchanged scores and actively promoted one another's music on their respective continents. In addition, they stimulated other composers in their circles to take part in this exchange and, finally, they published articles that presented their accomplishments and aesthetic views side-by-side, thereby announcing to the outside world the existence of a Transatlantic School. This School faded into the background when Darmstadt became

[7] Jean-Jacques Nattiez, ed., *Pierre Boulez, John Cage, Correspondance et Document*s (Winterthur, Schweiz: Amadeus, 1990).

the focus of international developments in new music and, after 1952, the ideas of Cage and Boulez were most fully developed and perfected by Stockhausen.

At the center of the Transatlantic School we thus find Cage and Boulez and, in their published correspondence, we can follow the origins and early progress of synthetic timbre serialism. Cage's focus on the inner sound and timbre composition inspired Boulez to venture far into uncharted territory—so far, in fact, that he had to abandon many of his projects—and, by 1951, formulated a theory of synthetic timbre serialism. On the other hand, Boulez's earlier Classic timbre serialism aesthetically appealed to Cage. Boulez's Second Piano Sonata and his 'Complexity' String Quartet had a profound impact on Cage's outlook and he sought ways to reach a similar level of syntactical complexity.

In later years both Boulez and Cage took a great distance from this period, apparently uncomfortable with this shared past. These developments are immaterial to our study; we chose to limit our reflections to the time period ending in 1952.

Boulez had developed the foundation of Classic timbre serialism by 1945–46; but while he had an unfailing sense of his own aesthetics before Cage's arrival in 1949, he was isolated within the musical world of Paris. Not a single one of his compositions had been premiered in Paris since 1946. With Cage, Boulez met for the first time a composer who shared his aesthetics, had brilliant ideas and, to top it all off, knew how to get things moving. Through his intervention, Boulez was able to publish his first score. French publishers, afraid to lose business to Cowell's journal *New Music*, offered Boulez a publication deal. Cage and Boulez spent much time together in 1949, thus laying firm foundations for a close friendship over the next four years.

But Cage stayed almost half a year in Paris and his influence extended beyond his friendship with Boulez. Messiaen is on record saying that hearing Cage's *Sonatas and Interludes* was one of the most profound musical experiences of his life and, only weeks after this experience, Messiaen composed *Mode de valeurs et d'intensités*.

Boulez's Second Piano Sonata, with its violent beauty of pulverized sound and rational delirium, profoundly moved Cage. Boulez did everything to promote the music of Cage in Europe, while Cage did the same for Boulez in the United States. We will point out the mutual learning process between Cage, Boulez, and their circles. The New York School initially rallied around the music of Boulez and Webern; Boulez, for his part, broke the wall of musical isolation only after his reconciliation with Messiaen, which can be dated, tentatively, to late 1950 or early 1951. Boulez was invited to teach his new music at Paris Conservatory and, as a consequence, Michel Fano, Jean Barraqué, and other young composers began to study Boulez's timbre serialism. David Tudor and Cage investigated Boulez's music and aesthetics and, at the end of 1950, Cage reported that Boulez had a small but devoted group of followers in New York. American composers submitted some of their scores to Boulez, in some cases with kind requests for criticisms. Meanwhile, Cage and Boulez had both began to compose systematically the timbral microstructure and were clamoring for the use of technology to further their experimental research into rhythm and timbre.

But while Cage and Boulez became increasingly aware that they were developing the exact same ideas in 1951–52, a number of other developments were spawned, which evolved aside or in parallel without too much direct intercommunication. The Transatlantic School was part of the larger confluence in which synthetic timbre serialism

evolved. In particular, Schaeffer's activities at the Parisian Radio were important. Schaeffer controlled access to the technological equipment that both Cage and Boulez needed for their musical research. Cage was perfectly aware of the latest technological developments in sound technology when he met Schaeffer in 1949.

The Paris of the late 1940s also saw the birth of electronic music: long before Cologne and other European studio's opened their doors, the Parisian avant-garde made their first contact with a new world of music technology at Schaeffer's Studio d'Essai at the Parisian Radio. Schaeffer's aesthetics are not easily described; he studied with Nadia Boulanger, worshipped Stravinsky, and favored Gluck's reform operas. At the same time, he was attracted to certain ideas in modern art (an obvious attraction to Dadaism), esotericism, and philosophy. He was a professional sound engineer, high-ranking radio administrator, notoriously anti-establishment throughout his life, media philosopher, writer of novels, timbre researcher and, for short periods, an idiosyncratic composer of concrete music. But while he had long been an experimenter into new forms of radio art, he invented concrete music only after meeting Cage in 1949. This is a widely overlooked fact; Schaeffer created concrete music, almost, in retrospect.

Chapter four focuses on Schaeffer and provides an exegesis of the manifesto of concrete music and his early texts. We will attempt to de-mythologize his network of statements in regard to the 'primitives' of concrete music and show his overlooked entanglement with Cage and Boulez since the late 1940s. Schaeffer's first theory of concrete music—published in late February 1950—was even vaster than Cage's universal theory of music: it was a music that included all other musics past and present, both conceivable and inconceivable. We will describe the short life of Schaeffer's disc-based

concrete music, and its split into two different trends in 1951–52, serial and non-serial timbre composition, before a third, more stable stage of experimental music is finally reached in 1953.

While Schaeffer's eclectic aesthetics might lead us to speak of him as a Dadaist neo-classicist, the Belgian Karel Goeyvaerts, who betrayed a similarly vagrant aesthetic attitude, might be thought of as a neo-classical serialist. For the most part scholarly literature has remained unaware of Goeyvaerts's successful early career as a neo-classical composer. During the initial two years of his Parisian studies (1947–49), his music was not only broadcast on French and Belgium National Radios but also won two composition prizes—neither of them noted for their support of dodecaphonic aesthetics. Most strikingly, perhaps, in 1949 he received the Lili Boulanger Composition Prize for his *Music* (1948). Nadia Boulanger handed the prize to him in person. In the old French fight with Schoenberg and, in more general terms, German musical aesthetics, Boulanger most emphatically represented Stravinsky. She was appalled at the phenomenal success of the Parisian dodecaphonic movement, especially when it reached near-epidemic proportions around 1948–49. Goeyvaerts, well on his way towards a successful career as a composer, was supported by neo-classical leaders such as Boulanger, Darius Milhaud, Jean Rivier, and Paul Collaer. Shortly before 1950, near the end of his three-year study period in Paris, he presented his teacher Milhaud with a first dodecaphonic work—suddenly, he had switched sides.

Cage again played a pivotal role. In the spring of 1949, when he introduced his prepared piano music to the students in Messiaen's class, Cage was a strong and vocal supporter of Webern's music. (In later years, his earlier vehement endorsement of

Webern—for reasons different from Boulez's—vanished almost completely from public consciousness.) Yet, Cage's music and theories differed from the reigning dodecaphonic aesthetics. His music made a strong impression on students and, in particular, on Goeyvaerts. The peaceful, inner-world timbres of the *Sonatas and Interludes* provided Goeyvaerts with an alternative perspective on how to employ Webern and inspired his subsequent search for a purist depersonalized musical language.

Although five years Goeyvaerts's junior, the twenty-year old Jean Barraqué was already well versed in the music of the Viennese School. He was an expert of the pointillist aesthetics found in Webern's late works, having devoured Leibowitz's *Schoenberg and his School* in early 1947. Barraqué, erstwhile challenger of Boulez, helped Goeyvaerts to make the transition from neo-classicism to timbre serialism. Messiaen, with whom Goeyvaerts had taken analysis classes since 1947, had no influence on his switch to dodecaphony.

Goeyvaerts had begun to explore dodecaphony during his last year in Paris (1949–50) and, returning to Belgium in the summer of 1950, his music began to show the first effects of these researches. He formulated the twin laws of the synthetic number and octave rotation and composed the first 'through-organized' composition, his Sonata for two pianos (1950–51). These laws constituted the basis of static synthetic timbre serialism. While Goeyvaerts still submitted his neo-classical *Music* of 1948 for his participation at the Darmstadt Summer School of 1951, he introduced Stockhausen to his elegant new composition system during their first encounter at Darmstadt in 1951.

The new composer friends were struck also by the depersonalized, non-dynamic aesthetics of Messiaen's *Mode*, when Goléa presented this music at the summer school.

Unaware that Cage and Boulez had inspired Messiaen, when he synthesized in *Mode* the aesthetics of the *Sonatas and Interludes* and Boulez's Classic timbre serialism, Goeyvaerts and Stockhausen reacted to this "music of the stars" in an incredulous manner. Neither had been fond of Messiaen's orgiastic hedonism—known from his recent *Turangalîla* Symphony—and *Mode* had truly nothing in common with these prior aesthetics. Since Goeyvaerts had just turned to serialism, the question was whether the older composer had had a similar change of heart. But because Goléa brought only *Mode's* recording to Darmstadt—and not its score—only repeated listening to the recording could help Goeyvaerts and Stockhausen to find an answer to that question. No score preface informed them how Messiaen had constructed a multi-dimensional mode—a mapping of Cage's gamut and parametrical thinking into traditional notation.

On the other hand, it was hardly necessary to have a score to hear the effect of Boulez's 1948 critique that Messiaen composed exclusively in a harmonic style: a lack of vertical formations in *Mode* struck Goeyvaerts and Stockhausen as similar to the former's Sonata for two pianos, which Stockhausen vehemently defended against Theodor W. Adorno's attacks by comparing it to an abstract painting. From their discussion about the Webernesque pointillist aesthetics in these works, the two composers, assisted by Herbert Eimert, developed the term "pointillism". We will show the stations of the term's development and, in particular its entanglement with the serial tape music realized at Schaeffer's studios in Paris. In 1952, at the Darmstadt Summer School, the audience heard Messiaen's *Quatre études de rhythme* (1949–50), Boulez's Second Piano Sonata (1946–48), Nono's *España en el corazón* from *Epitaffio per Garcia Lorca* (1952), Stockhausen's *Kreuzspiel* (1951), Maderna's *Musica su due dimensioni* (1952). In

addition, the latest serial and non-serial tape music by Boulez, Pierre Henry, Messiaen, and Schaeffer was performed. From these concerts and talks held during the Summer School, the German press picked up the term "pointillism", which for one or two years became attached to the new musical aesthetic before it was more permanently replaced by the term "serielle Musik".

Goeyvaerts connected Stockhausen with Paris. After their three-week brainstorming at Darmstadt in 1951, Goeyvaerts returned to Belgium via Paris, already carrying Stockhausen's request to study in Paris in his baggage. He asked his former teachers Milhaud and Messiaen if they would accept a young German student, as of yet unable to speak a word of French. By January 1952 Stockhausen studied with Milhaud and Messiaen, and a month later he met Boulez. Just over six months after hearing Messiaen's *Mode*, Boulez introduced Stockhausen to Cage's music—including the parameter charts Cage had used in the *Music of Changes* and the comparable ones of Boulez's *Structures Ia*. His musical instinct told Stockhausen that he had located the source behind Messiaen's new aesthetics. The music of *Mode* remained stellar, to be sure. But in its pointillist constellations, Stockhausen detected the signatures from Cage and Boulez, twin leaders of the Transatlantic School. They had the answers he had been seeking in Paris, after his momentous Darmstadt experiences in 1951. The friendship between Boulez and Cage was at a climactic point; both had been investigating the possibilities of composing the acoustic microstructure. Boulez was just in the process of realizing his second study in what I will call 'synthetic timbre serialism' for magnetic tape. He took Stockhausen into Schaeffer's studio to show and explain him this work.

Cage's forte—learned from his brilliant teacher Cowell—had long been to stimulate collaboration and exchange between like-minded composers; this practice was naturally continuing and expanding into Europe, as Boulez now welcomed Stockhausen, Henri Pousseur, Fano, Barraqué, Michel Philippot, and other new members to the Transatlantic School. Before leaving for his trip to Canada and the United States in the fall of 1952, Boulez asked Stockhausen to contact Cage in order to help organize a two-hour radio program featuring the music of Cage. This was the first time Stockhausen and Cage came into direct contact; Cage sent Stockhausen a score of his *Music of Changes*. Prior to his departure, Boulez arranged that Stockhausen could take his place at the busy Schaeffer studios. By December of 1952, Stockhausen had realized his first study in synthetic timbre serialism: his *Konkrete Etüde* is built along the lines of Cage's square-root form. This transfer of knowledge was a major consequence of the Transatlantic School; its function may have been fulfilled by late 1952 and it falls outside the boundaries of this study to investigate the causes of its demise.

In summary, then, the Parisian confluence of 1949–52 brought in contact the early stages of new music's most important post-war developments, before the focus of international attention and activities turned to the Darmstadt Summer Schools around 1952–53. This time-place constellation of composers, music, and ideas included the Transatlantic School, Messiaen's short-lived detour into pointillism, Schaeffer's disc-based concrete music, Goeyvaerts's static serialism of the synthetic number, Boulez's Classic and synthetic timbre serialism, as well as Stockhausen's formative period in Paris 1952–53.

A close examination of primary sources, the comparison of key musical works, and a precise chronology, will reveal that a number of widely held conceptions most probably should be revised. To a large extent—but not exclusively—these revisions involve the impact of Cage on Messiaen, Schaeffer, Boulez, Goeyvaerts, and Stockhausen. But the historic data we have introduced above form only one half of the two-part argument that Cage was the father of synthetic timbre serialism. The conceptual challenges of timbre serialism begin with our basic understanding of its aesthetics, reflected, in its most crystallized form, in the very name adopted to identify this music. We must now turn to argue our usage of the term "timbre serialism".

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We may begin by noting that, throughout the twentieth century, timbre became an increasingly important factor in musical thought. Beginning with Schoenberg's *Farben* movement from the Five Pieces for Orchestra (1909), the composers of the Viennese School explored hitherto unknown expressive potentialities of timbre by means of traditional instruments.[8] The Italian Futurists conceived of an Art of Noise, based on new

[8] In this dissertation the Schoenberg School is often addressed as the 'Viennese School'—without ordinal number. Its origin dates to the year 1904, when Berg and Webern became Schoenberg's students. The latter's *Harmonielehre* (1911) may be thought of as the school's manifesto: "Dieses Buch habe ich von meinen Schülern gelernt." ("I have learned this book from my pupils."). His students responded, in 1912, with a small volume in honor of their teacher: Alban Berg, Anton Webern, Wassily Kandinsky and others, *Arnold Schönber*g (München: Piper, 1912). In the same year, the art journal Wassily Kandinsky and Franz Marc, *Der Blaue Reite*r (München: Piper, 1912) included three songs by the members of the school, to wit: Schoenberg's *Herzgewächse*, op. 20, Berg's 'Aus dem Glühenden', op. 2, no. 4, and Webern's 'Ihr tratet zu dem Herde'. This made the school's collective participation in the new Expressionist movement widely visible within the art world. It was essential that, in the early days of the school, Schoenberg was in a state of heightened creative awareness—he had no academic background and was a searcher himself—and this led to an intense exchange with his students, beyond the normal student-teacher relationship: each work opened a new world; authenticity was more valued than technique. The notion that Haydn, Mozart, and Beethoven constituted a school, on the other hand, is hard to maintain and so the ordinal 'second' has been dropped in scholarly usage (see, for example, the correspondence of the Viennese School—more than 2000 letters between Schoenberg, Berg, and Webern—published as: Thomas Ertelt, ed., *Briefwechsel der Wiener Schul*e (Darmstadt: Wissenschaftliche Buchgesellschaft, 1995)). Publications in English on the Viennese School are exceptionally slow to give up the spurious usage of the ordinal 'second' (see, for example,

instruments, as an aesthetic parallel to the modern urban world of cars and industrial machines. At the same time, the technologies of electronic sound synthesis and storage were developed and, by mid-century, with the advent of recording on magnetic tape, enabled composers to formulate the first systematic approaches to timbre synthesis. In later decades these early systematic approaches were refined further with digital techniques, which led to real-time computing and a new level of interactive timbre composition.

The conceptual problems faced in speaking of timbre composition begin with the very word that defines it. 'Timbre' applies to a wide variety of phenomena. When thinking about timbre in terms of a music instrument or a voice, one may at first believe to have here a relatively straightforward and well-defined notion. Closer examination, however, reveals a complex set of problems. The attempt to talk about the subtleties of timbre perception quickly falls short, due to the lack of appropriate vocabulary and, not accidentally, the alternative term for timbre, 'tone-color', suggests that these subtleties may be as varied as the colors on a painter's palette.

In scientific approaches, meanwhile, a similar but related problem surfaced. In 1863 Helmholtz published his scientific research into the inner architecture of sound; this standard work on the 'material of music', quickly translated into English and French,

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Bryan R. Simms, *Schoenberg, Berg, and Webern: A Companion to the Second Viennese schoo*l (Westport, Conn: Greenwood, 1999)). The origin of the 'first/second' distinction dates back to musicologist Guido Adler, who is guilty of erecting the 'Viennese School' in reference to Haydn, Mozart, Beethoven—mainly in order to oppose Riemann's 'Mannheim School'—which then led authors to speak of a 'second' Viennese school. Riemann's view has long been superseded and is so ancient, that it is barely known today. *New Grove 2* maintains a 'tight-lipped' entry s.v. 'Second Viennese School'—unsigned, to be sure —acknowledging the 'precarious notion' of a 'First Viennese School'. *MGG* maintains a more comprehensive entry s.v. 'Wiener Schule', by Rudolph Stephan.

remained authoritative well into the early twentieth century.[9] (Cowell's early proto-serialist theories are unthinkable without Helmholtz.) Helmholtz had been aware that the dynamic portions of timbre, such as the attack phase of a sound, have a significant impact on timbre perception. However, given the scientific limitations of this pre-electronic period, he focused his research on the static portions of timbre, and explained some characteristic differences between vowels or music instruments through the overtone model.

In 1910 Stumpf in Berlin conducted research into the dynamic portions of timbre, asking expert listeners to identify sounds without their initial attack phase. Differentiating between inner (overtone) and outer (attack phase, loudness, context) timbre characteristics, Stumpf began to pinpoint, even on the 'atomic' level of a single timbre-sound-form, some of the true complexities involved in timbre perception.[10] In recent years timbre research proliferated into many directions. The widely known multi-dimensional waterfall-spectrograms visually illustrate the masses of acoustic data contained in the physical world. Now systems of data reduction are needed to pinpoint where, why, and how, a human listener, for example, can distinguish between a normal violin and a Stradivarius timbre or, alternatively, recognizes—within seconds—a specific acquaintance among millions of different voices.

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[9] German first ed.: Hermann von Helmholtz, *Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musi*k (Braunschweig: Vieweg, 1863); French first ed.: *Théorie physiologique de la musique, fondé sur l'étude des sensations auditives*, trans. Georges Guroult and Auguste Desir Bernard Wolff (Paris: Masson et fils, 1868); English first ed.: *On the Sensations of Tone as a Physiological Basis for the Theory of Music*, trans. Alexander John Ellis (London: Longmans, Green, and Co., 1875).

[10] Karl Stumpf, *Die Sprachlaute: Experimentell-phonetische Untersuchungen nebst einem Anhang über Instrumentalklänge* (Berlin: J. Springer, 1926), pp. 374–75.

If these descriptive problems exist on the level of a single timbre-sound-form, they are compounded when, in a concert with orchestral music, many timbres occur simultaneously. The aesthetics of Classical music, however, are centered on one or more *linear* narratives and therein timbre has a supportive function, providing perspective to harmony and melody. Modernist complexity, as encountered in cubist paintings, consciously shuns such linearities from the outset.

Abstract art strives for nonfigurative complexity in order to transcend the narrative lines of nineteenth-century art. Analogously, in music we perceive that a conscious avoidance of traditional linearities is characteristic for many types of modernist timbre compositions. In this sense, then, a number of aesthetics strongly relate to the concept of timbre composition, including early expressionism, impressionism, ultra-modernist tone-cluster music, certain dodecaphonic works, modernist percussion and sound-film music of the 1930s and 1940s, disc-based concrete music around 1950, as well as chance music and post-war timbre serialism in their various forms. The historic encounter of several of these 'timbre aesthetics' in Paris after 1949 constitutes, in no small part, the essence of the Parisian confluence; Cage, Boulez, and Schaeffer shared an interest in timbre. Before turning to their different approaches to this phenomenon, we will first discuss the scope of the term 'timbre serialism'.

There is a tendency, mainly in anglophone usage, to include in serialism the works of the Viennese School. This terminological practice does not reflect the multitude of serial composition strategies or their varying, and sometimes even opposing aesthetics. An all-inclusive category 'serial music' is as meaningful as an all-inclusive category 'scale music'. In order to address these problems, anglophone authors have sometimes adopted

a qualifier and speak, for example, of 'total' serialism. This usage certainly suited more reactionary forces, intending to brand the modernist aesthetic as dictatorial. Grant pointed out that

> ...the qualifier 'total', used not only to talk of 'total serialism' but applied in the sense of 'total control', paints a limited picture of the aesthetic impetus for this music: it implies a lack of freedom, and, as Eimert himself pointed out, can be easily equated with 'totalitarianism'—a comparison which is particularly unfortunate given that serialism was shaped by the aftermath of the Third Reich.[11]

The main argument for qualifying serialism as 'total' is the extension of serial thought from the domain of pitch to other dimensions, such as rhythm and intensity. But how 'total' was this 'totality'? Authors who adopt this limited view of serialism seem to be entirely unaware of basic concepts such as defective series, negative rhythms, and 'organic' hierarchies built from crossbred cell structures.[12] The qualifier 'total' also betrays a lack of familiarity with the composition strategies involved in timbre serialism and, not surprisingly, many works beyond 'kindergarten stage'—as Toop described works such as Boulez's *Structures Ia* (1951), Goeyvaerts's Sonata for two pianos (1951), and Stockhausen's *Kreuzspiel* (1951)—still await perceptive analyses many decades after their composition. On a cautionary note, Toop added that

> Serialism, like any other rich approach to composition, is only marginally described by the recitation of its surface mechanics. Its essence lies in the musical, philosophical, and aesthetic ideas and conflicts that it helps to articulate.[13]

Indeed, how does the use of series relate to the aesthetic content, in other words, our experience of the work? One may think here, by way of an extreme, of analyses of

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[11] Morag Josephine Grant, *Serial Music, Serial Aesthetics: Compositional Theory in Post-War Europe* (New York: Cambridge University Press, 2001), p. 5.

[12] Pierre Boulez, "Eventuellement...", pp. 263–295.

[13] Richard Toop, "On Complexity," *Perspectives of New Music* 31, 1 (Winter 1993): 42–57.

electronic timbre compositions that amount to marathon bookkeeping exercises, filling page after page with numbers, series, and permutations.[14] To be sure, surface mechanics document necessary stages in the work's construction; on the other hand, high doses of detail may turn into the analyst's diploma of misunderstanding. This is by no means a simple problem; Erhard Karkoschka, a seasoned analyst, once stated that he continued such analytic practices in full awareness of their muteness.[15] Serial analyses often leave both analyst and reader with a curious sense of frustration at their conclusion. Was this really what we heard and, if not, will we be able to hear these numerical structures in the future? A sense of 'total' anguish may easily replace the erstwhile satisfaction of having succeeded in solving a complex serialist puzzle. What if the use of series was only aimed at destroying all linearities, including the perception of series? Our analysis would then simply constitute a list of negatives and fail to address the resulting actual musical phenomena. And, even stronger, what would be the analytic implication, if we were to recognize—and take seriously—that the aesthetics of timbre serialism invokes our subjective presences in the here-and-now of musical experience?

In this sense, then, the qualifier 'timbre' is proposed here for a wide group of instrumental and electronic serial compositions after 1945. 'Timbre' may be read as a metaphor for complex compositional strategies but, more importantly perhaps, as a new kind of listening, essential to the aesthetic. Composers of timbre serialism dismantle traditional linearities in order to create various types of acoustic environments that let us experience sound in its concrete physicality. We are invited to listen to timbres in a

[14] The Silberhorn analysis, for all its good work, fits the description. Heinz Silberhorn, *Die Reihentechnik in Stockhausens Studie II* (Herrenberg: Musikverlag Döring, 1978).

[15] Erhard Karkoschka, "Analyse 1993: Kritische Überlegungen am Ende eines Berufslebens," *Musiktheorie* 12, 1 (1997): 91–95.

participatory mode (causing the irritation of listeners who reject both freedom and responsibility for their own perceptions). Timbres appear as single entities or in various constellations; we may identify lines, processes, textures, masses, blocks, or densities within a larger, more complex whole. In this sense, then, our listening to classics of timbre serialism, such as Boulez's Second Piano Sonata or Stockhausen's *Kontra-Punkte*, compares to our viewing of Marcel Duchamp's *Nude Descending a Staircase*, No. 2 (1912)—a work that, with a fine note of perversion in its title, also invites the viewer to participate in its uncertain play of light, lines, and colors.

Figure 1: Nude Descending a Staircase, No. 2[16]

[16] Marcel Duchamp (1887–1968), *Nude Descending a Staircase (No. 2)*, 1912, oil on canvas — 57 7/8 x 35 1/8 inches (147 x 89.2 cm), Philadelphia Museum of Art, The Louise and Walter Arensberg Collection 1950. Painting © Succession Marcel Duchamp, by permission. Photography of painting © The AMICO Library (<http://www.amico.org/> accessed in 2003): PMA_.1950-134-59, licensed for non-commercial, educational use. This original painting is mainly in light and dark ochers. The mechanical portrayal of a subject at once so sensual and time-honored was felt as an outrage, when the painting was first exhibited in New York in February 1913. The motion or human figure in *Nude Descending a Staircase* occur not in the painting, but in the viewer's mind. The painting portrays a single, permutatively repeated, *shape*, six times —each permutation shifted down and to the right.

Who would think of writing a detailed serial analysis of the *Nude*, counting and measuring its lines, distances, and colors, in order to document, perhaps at a later stage, their various interrelationships?

In addition, it is apparent that timbre serialism's main protagonists took an intense interest in timbre at a very early stage in their career. Boulez, for example, was attracted to African, Tibetan, and Indonesian noise-pitch instruments in the mid-1940s and the performance indication 'Pulverize the sound' near the end of his Second Piano Sonata's fourth movement provides a unique proof of his concern for raw sound.[17] Likewise, the relation between noise and pitch had been topical for Stockhausen as early as *Kreuzspiel* (1951) and probably earlier, since the same interest in noise and pitch may have guided him to choose as a thesis topic Bartók's *only* chamber work involving percussion, the Sonata for two pianos and percussion (1937; BB 115). Furthermore, for *Gesang der Jünglinge* (1955–56) he most emphatically declared his intention to compose timbres in their multi-dimensional continuum.[18] In this work he provided a compendium of microstructural composition techniques. Some of the resulting timbre scales in reality constitute *cycles* of micro-compositions. On the macroscopic level, Stockhausen's musical thought worked, among other elements, with timbre scales, various rhythmic scales, text semantics, awareness of historic styles, densities, polyphonies, spatial characteristics, and large-scale architectural considerations of musical form. Although long appreciated as a seminal masterwork of twentieth century music, *Gesang* had to wait

[17] Cf. Messiaen's interest in the gamelan or his irritated remarks to Goléa: "Permettez-moi de vous dire que ce qui attirait Boulez dans la musique exotique, ce n'étaient pas les modes, mais les timbres, et spécialement les extraordinaiers percussions du Tibet, de Bali et de certaines musique noires." Antoine Goléa, *Rencontres avec Olivier Messiae*n (Paris: Slatkine, 1984), originally published 1960, pp. 245–46. ("Allow me to inform you that what interested Boulez in exotic music were not modes, but timbres—and especially the extraordinary percussion musics of Tibet, Bali, and Africa.")

[18] Karlheinz Stockhausen, "Aktuelles," (1955), quoted from *Texte* 2 (1964), pp. 51–57.

almost fifty years before a comprehensive and aesthetically perceptive analysis appeared in print.[19] The analysis disclosed how series were used on as many as ten, twenty, and even thirty compositional levels and, still, the music remained irreducible to serial thought. Rather, as briefly hinted above, musical thought functions in both analytical and synthetic modalities when the basic elements of the composer's workshop are constituted and brought into contact with his musical language.

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In conclusion, then, the linear concept of a series—a relic of traditional melodic thinking—amounts to seeking a work of figurative art in Duchamp's cubist *Nude*. Timbre serialism seeks discontinuity on the level of musical syntax and synthetic timbre serialism extends these discontinuities to the microstructure of timbre composition. The series is a malleable tool, an empty rational structure, which can be deployed and function at many levels of musical thought. This multi-dimensionality, combined with an organicist ideal, was first employed in Cowell's square-root form and later perfected by Cage. Neither Cage nor Boulez nor Stockhausen were shy to use 'defective' series, apply creative 'inserts', or plan degrees of freedom in systems that otherwise were rationally planned throughout. In short, the essence of these approaches lies in a research to experience and compose timbre and, in general, an experimental approach to composition. As long as the notion of 'timbre' remains inexhaustible, these two essential characteristics remain inseparable. Synthetic timbre serialism had chosen to abandon all simple linearities and explore the uncharted territories of timbre, in other words, musical

[19] Pascal Decroupet and Elena Ungeheuer, "Through the Sensory Looking-Glass: the Aesthetic and Serial Foundations of 'Gesang der Jünglinge'," *Perspectives of New Music* 36, 1 (1998), pp. 97–142.

complexity. Once it is understood that 'order' and 'linearity' are not the only functions of 'series', a smaller conceptual barrier to appreciate Cage's leadership role as the father of synthetic timbre serialism disappears: the use of coins to determine the musical values in a system is of no further consequence. Synthetic timbre serialism is neither linear nor total nor accidental; rather, its essence lies in the above-mentioned rich approaches to timbre composition.

Cage learned from Cowell the characteristic Bauhaus approach to the materials of music. When these artistic trends were expunged violently from Germany and Europe, Cowell, in a comprehensive manner, perhaps was the leading musical exponent of the Bauhaus aesthetic. It was one of his major achievements to bring this approach to America and communicate the essential aesthetics to Cage. Through Cowell, Cage became aware of serial principles since the 1930s: in Cowell's book *New Musical Resources* he had studied the idea of organizing pitch and rhythm according to the same ratios—along with numerous examples of mapping these overtone ratios to other sound dimensions.[20] In an ironic development, due to his incarceration in 1936, Cowell's leadership was silenced and Cage appeared to have invented this approach all by himself. He cultivated the approach as his own for more than a decade, constantly adding new perspectives stimulated by his ongoing contact with the refugee exponents of the Bauhaus. Finally, in 1948, Cage found one additional element that had not been present in Cowell's theories: musical silence. This element was the primary building block of the universal theory of music. This theory, we argue, contained all the essential elements of

[20] Henry Cowell, *New Musical Resources* (New York: Knopf, 1930).

synthetic timbre serialism by 1949 and made Cage the true father of this post-war aesthetic movement.

In coming to Paris in 1949, Cage brought with him an impressive set of basic composition tools—far more sophisticated in his concepts than Boulez or any of his Parisian colleagues at the time—and, in addition, provided his brilliant universal theory of music. He introduced parametrical thinking; the fundamental equality of sound and silence; the micro-macrostructural time-based structure; an idiosyncratic theory of form and structure and, in general, argued for absolute priority of time over pitch (harmonic) structure. He promoted the use of technology for timbre composition—sound synthesis *and* sampling—for more than a decade before coming to Paris. We suggest Cage's thinking and ideas at the very least greatly helped Schaeffer, in 1949, to formulate his project of concrete music.

Initially unsettled and stimulated by Cage's brilliant world of musical thought, Boulez after 1949 attempted to reach a similar freedom of tradition and openness to material. This resulted in his article "Eventuellement...", ripe with the concepts learned from Cage. In the end, Boulez would return to more traditional views: in his *Musikdenken heute*, he assigned equal priority to pitch and duration, thus showing a closer link to the traditional priority of pitch structures. Stockhausen, on the other hand, was ready to give time structures absolute priority and, as a composer, maintained an unrelenting path of innovation. Cage's path, in the later 1950s, would lead to deeper exploration of active listening and silence, the major discovery of his life.

Leibowitz had considered his book on the Viennese School as a necessary 'breach of silence'. In a final twist of fate, it may well have been in Leibowitz's book that Cage

found the key to unlock the concept of musical silence some time in 1948. At the top of the Webern chapter Leibowitz had placed an epigraph by Maurice Blanchot:

> But, when we have discovered in language an exceptional power of absence and of denial, we are tempted to consider the very absence of language as part of its essence, and silence as the ultimate possibility of speech…[21]

[21] LEIBOWITZ 1949, p. 226. We are quoting from the English version; the French version of this book was published in early 1947.

CHAPTER 1: CLASSIC TIMBRE SERIALISM BEFORE 1949

In the immediate post-war period, the Darmstadt Summer School did not yet play a significant role in new music, and the most important musical developments took place in Paris. For the most part France and Paris had been spared the widespread destruction caused by the Second World War—twice. Parisian musical activities continued throughout the war and, after the Liberation, a surging interest in the music of Schoenberg, Berg, and Webern confronted in the most unequivocal fashion the reigning Russo-French neo-classicism of Stravinsky, *Les Six*, and the offshoot *La jeune France*. Olivier Messiaen, viewed as an iconoclastic radical in the immediate post-war period, and René Leibowitz, emerged as leading figures of the avant-garde. Both composers played a fundamental role in developing a new musical language, not least for Pierre Boulez, who had found his way to Paris in 1943 and studied with both of them. This chapter focuses first on Leibowitz, the central figure for Parisian dodecaphonists in the mid and late 1940s; secondly on Messiaen, whose impact remained confined to a smaller but important circle of Conservatory students; and thirdly on Boulez, who laid the foundations for serial music by synthesizing the influences from Messiaen and Leibowitz with the contrapuntal skills learned from Andrée Vaurabourg. The Ondes Martenot reached the apex of its fashion during the mid-1940s, when many French composers, including young Boulez, wrote for this granddad of the synthesizer. Among avant-garde musical thinkers, Paris was home to Russian emigré Wyschnegradsky. He called the new sound world 'pansonority' and researched its laws, including continuous pitch spaces, innovative microtonal scales, and new rhythmic concepts.

Leibowitz energetically promoted the music of the Schoenberg School in Paris. The rise of German music in Paris may seem surprising for many reasons, not least the old and bitter rivalry between France and Germany as well as the Second World War that had been won and lost. But the development lines ran deeper, because intellectuals had already adopted Hegelian and Marxist theories in the interbellum period, and the music of Schoenberg was less associated with Germany than with idealism, Freudian psychoanalysis, and utopian ideas about society, such as communism and anarchism. In the immediate euphoria after the liberation of Paris, suppressed left-wing intellectuals emerged from the confinement of the underground, finally able to speak out again. Jean-Paul Sartre and Simone de Beauvoir, for example, launched the journal *Les Temps Modernes* as a forum for iconoclastic ideas and critical analyses.

Leibowitz contributed essays on music to this review, reflecting on the composer's role in the modern world. His synopsis of music history showed the development of dodecaphony as a historic necessity, in terms familiar to us from Schoenberg, but we will find that Leibowitz added new elements, which radicalized dodecaphony and shifted its central aesthetics towards the late music of Webern. He regarded Schoenberg as the source, Berg as the past, and Webern as the future and, in his monograph on the Schoenberg School, formed basic ideas that contributed to the development of Classic and synthetic serialism. While we can only highlight the main features of this seminal book—essential reading to scholars interested in understanding both the rise of Parisian dodecaphony in the 1940s and its concurrent further developments into Classic and synthetic timbre serialism—we will emphasize the key analytic notions derived from Webern's music, such as 'athematic music', or 'isolated tones' that take on a thematic

function. Historically, Leibowitz appears not only as the truly heroic defender of last resort for dodecaphony in Europe during the life-threatening years of Vichy France (for fear of their lives, many dodecaphonists and their families were driven into far away countries, and many perished among those who stayed), but as a figure with links to Dadaists, Existentialists, and Surrealists. Among his friends we find George Bataille, Michel Leiris, Tristan Tzara, and André Masson. We will retrace major stations of his post-war activities as a writer, teacher, conductor, composer, and critic.

While Leibowitz's fame and influence reached a peak around 1947–49, Messiaen had become notorious for a number of iconoclastic works a few years earlier, around 1945. Reviewing his roots as a member of *La Jeune France* in the 1930s—where he already proved himself as a daring modernist in writing an electronic sextet and a microtonal work—we find Messiaen after the war as a controversial teacher at the Paris Conservatory, facing stiff opposition from the Parisian establishment and orthodox currents such as Nadia Boulanger, the iconic supporter of Stravinsky's neo-classicism. His works of the mid-1940s provoked scandals and the Parisian press unleashed harsh criticisms for his combination of the sacred with the sensual and even erotic themes.

In those days Messiaen taught classes in traditional harmony at Paris Conservatory. He was barely past his thirtieth birthday, exceptionally young compared to the average Conservatory teacher. In his *Technique de mon langage musical* he had formalized for didactic purposes the major elements of his musical language, and he organized private analytic sessions in which he discussed these new ideas with a select number of highly talented individuals. These private sessions included the study of music banned from the Conservatory and, for that matter, from any other public institution in France. By 1943–

45 Messiaen had become the rallying point for an iconoclastic group of young musicians, who met with Messiaen outside of the Conservatory; they became known as 'the arrows' (*les flêches*) of their Sagittarius teacher.[22]

Our appreciation of Boulez's student years is marred by dating problems and controversial data. There are few reliable sources in regard to his earliest period, and solid data is often harder to obtain than mythology. We will address a number of problematic points by critically evaluating and comparing key primary resources and early secondary texts. Reviewing the stages of Boulez's relatively short, direct learning period with teachers, we will be able to look beyond his later blanket criticisms of Leibowitz, for example, and see a more nuanced picture: an early period of happy involvement, followed by a more casual association with the Leibowitz circle and its activities until at least 1947–48. A shift occurred when Leibowitz became a close friend of Schoenberg—also in the period 1947–48—providing a possible explanation for Boulez's later stringent criticism of his erstwhile friend and teacher. A similar shift in public perception, albeit in the opposite sense, occurred in regard to Messiaen.

An easily overlooked, important influence on Boulez were his private counterpoint studies with Andrée Vaurabourg, which took place in weekly lessons and outlasted both his studies with Messiaen and Leibowitz. Already by 1946 Boulez felt his teachers had nothing more to convey to him, and chose to continue autodidactically his learning process. It is not widely appreciated that Boulez, combining pitch and duration series, composed works of Classic timbre serialism as early as 1945–46. Inconveniently for those who feel that a new type of serialism began in the early 1950s, Boulez's early

[22] *Les flêches* will be discussed in more detail on page 65.

works are poorly described as dodecaphonic. Adopting this view, his compositions prior to 1952 would fall into a gray area of music history. Here they are viewed as works of Classic timbre serialism, showing in construction details of the Second Piano Sonata and the subsequent String Quartet (later named *Livre pour quatuor*) Boulez's increasing perfection in the new composition technique. More than any other composition prior to *Marteau sans maître* (including the more experimental *Structures Ia*), the Second Piano Sonata brought Boulez musical fame and became a key work when the Webernesque aesthetic turned into a 'fashion' in the early 1950s. The String Quartet, on the other hand, was too far ahead of its time. Its complexities resulted in demands so exorbitant on the performers that it took decades before it was premiered. These two important works mark the apogee of early timbre serialism, a period which Boulez himself described as 'classical' and for which—aside from the music of Bach, early Schoenberg, early Stravinsky, and late Webern—he had found aesthetic ideals in the poetry of Antonin Artaud, René Char, and Stéphane Mallarmé.

In summary, then, this chapter provides a synopsis of three musicians at different stages in their careers, who contributed significant elements to the world of Parisian avant-garde music during the five-year period 1944–48. From the perspective of timbre serialism, the significance of Leibowitz goes beyond Boulez, beyond Paris, and even beyond France, as we will see in subsequent chapters. This section constituted the basic educational framework for a wider group of young composers in the post-war era and, time and time again, we encounter names of colleagues of Boulez, without being able to extend our research more deeply into the intricacies of their lives, activities, and relationships with each other. It lies beyond the scope of this study and remains a

worthwhile challenge for future research to establish the coordinates of this particular Parisian cotêrie in more detail. Absent such a detailed study, Boulez's sketched student years also may illustrate the parallel development of his contemporaries, such as Jean-Louis Martinet, Serge Nigg, Antoine Duhamel, Yvette Grimaud, André Casanova, Michel Philippot, Claude Helffer, Yvonne and Jeanne Loriod, Pierre Henry, and many more. Each of the three protagonists of this chapter appears in a characteristic role: Leibowitz as visionary promoter of Webern's *Klangfarbenmelodie* and a purist, organicist 'athematicism'; Messiaen as spiritual promoter of rhythm, timbre, and an openness to all musics, sometimes bordering on eclecticism (but in reality the expression of his profound love of music) and, finally, Boulez as the poetic promoter of a synthesis between the ascetic and the eclectic, the mind and the heart.

Leibowitz and the Athematic Music of Webern

René Leibowitz (1913–72) occupied a fascinating position halfway between the circles of French Existentialism and the emerging serialist aesthetic in post-war Paris. Recently Sabine Meine published a comprehensive study establishing his kaleidoscopic historic place in that regard.[23] Leibowitz's importance was recognized by his immediate contemporaries, but his historic role has became more and more relative over the years, sometimes vanishing altogether from historic accounts of post-war music in Europe. This is surprising; even if Leibowitz's music has not found a wide audience as of this writing, an entire post-war generation of composers depended on his historic role in

[23] Understandably, in the current context I have to confine myself to a limited selection of the facts and connections drawn in her study. MEINE 2000.

teaching the music of the Viennese School; due space must be given to this pivotal figure in the history of twentieth century music.

Leibowitz started promoting the music of the Viennese School on 25 August 1944, on the very day of Paris's liberation. Dozens of the most gifted composers—first from Paris and later from far away—became his students. By 1952 Messiaen, Goeyvaerts, Nono, and Boulez had been familiar for several years with the works of Schoenberg, Berg, and Webern, and they all owed this early knowledge directly or indirectly to the activities of Leibowitz. During the period 1949–52, Leibowitz's position came under attack from the more traditional composers and theorists as well as from the more radical members of the young avant-garde. Nevertheless, he was a major common reference point for the avant-garde from 1944–52, at first directly and later through his dialectical *Aufhebung.* It is imperative, therefore, to reassess his figure from an objective point of view. The uncritical adoption by many later composers of Boulez's view elevating the importance of Messiaen at Leibowitz's expense, as well as more than a few music historians—not least Antoine Goléa—unfortunately has obscured the historic truth.

Born in 1913, Leibowitz grew up in Warsaw. His father, Max, originally from an Orthodox Jewish family in Riga (Latvia), elected a secular life-style and became a car dealer in Warsaw.[24] Coming to Berlin in a situation of deep personal crisis, Max Leibowitz succumbed to a sudden outbreak of cancer in 1929. René and his brother Joseph spent a period with their uncle Hirsch Leibowitz's family in Berlin, briefly separated from their mother. The latter soon married a wealthy Frenchman and the sons

[24] Meine's book is adorned by a photograph of Leibowitz leisurely sitting on his 'Dama bianca' (a white Ford Thunderbird cabriolet) at the Parisian *Place de la Concorde*. She suggests that Leibowitz inherited his taste for extravagant cars from his father Max. MEINE 2000, p. 38 fn. 139.

swiftly followed her to Paris, probably as early as 1929. The brothers, now well off, completed their school education. René spent some time searching for his final purpose in life: in the early 1930s he appeared as a bar pianist, calling himself Ray, in the Bohemian Parisian quarters around Montmartre. He felt at ease in the company of literates, philosophers, and artists and at the same time played golf and tennis within high society circles.[25]

The decision to dedicate his life to music appears to have crystallized in the mid-thirties. He met a number of musicians from the inner Schoenberg circle, for whom Paris, on their flight from the Fascist policies of Nazi Germany, was often the first destination.[26] Chief among them were Rudolf Kolisch, the brother of Schoenberg's second wife Gertrude, and pianist Erich Itor Kahn, who not only performed the complete piano works by Schoenberg but also was aware of their composition method. Kolisch organized regular meetings where Leibowitz struck up a friendship with Kahn. This circle of refugees (especially Kahn) was Leibowitz's prime source of information on the music of the Schoenberg School.[27] In a letter of October 1937 Leibowitz approached Kahn (seven years his senior) to hold meetings in order to discuss music. First serious compositional aspirations can also be traced to the late 1930s. As a composer, Leibowitz

[25] Sabine Meine's book contains numerous communications from anonymous sources, likely related to these mysterious French high society circles.

[26] This movement boosted the intellectual and artistic life of Paris in the 1930s. At the outset the German emigrés probably planned to built a new life in Paris, until these hopes gradually crumbled and then vanished completely with the French debacle in the Second World War.

[27] According to Meine's research, Leibowitz is unlikely to have studied with Webern, Ravel, or Schoenberg in person. In 1946 Leibowitz presented himself as student of Webern to Adorno, but not to Schoenberg, when he first contacted him in 1945. See MEINE 2000, pp. 29–36. The myth of Leibowitz's teachers runs through all music encyclopedias and musicological literature (except *New Grove* 2, by S. Meine). For example in NATTIEZ 1990, p. 57 fn. 6 one finds: "René Leibowitz…. Elève de Schoenberg, Webern, et Ravel."

maintained close ties to his preferred models. Over the course of his life he became prolific, but his works are still too rarely performed or studied as of this writing.[28]

Before 1940 Leibowitz had already struck up many friendships within the artistic circles associated with Surrealism. The writers Michel Leiris and George Bataille as well as sculptor André Masson were among his close friends. What mattered most to them was a certain inner attitude, which Leiris described as the 'esprit surréaliste'. They shared a fascination for Nietzsche, Dostoyevsky, Marquis de Sade, Artaud's 'theatre of cruelty', and the German romantics—tendencies quite representative of French intellectual and artistic circles at that time.

In the mid-thirties, Paris became increasingly open to German philosophy. In 1929 Edmund Husserl presented seminars introducing his transcendental philosophy at the Sorbonne. Then, from 1933 to 1939, Alexandre Kojève held his famous Hegel seminars. Among his listeners we find illustrious names such as Breton, Bataille, Queneau, Merleau-Ponty, Jacques Lacan, and Raymond Aron, the later philosophical mentor of Jean-Paul Sartre. In these lectures Kojève linked Hegel with Marx and Heidegger, thus

[28] Jacques-Louis Monod, a Leibowitz student from the 1940s who emigrated to New York, published a catalog of Leibowitz's works. In its preface Rudolf Kolisch stresses that Leibowitz's "functions—as interpreter, as teacher, and as author—vanish, however, when compared to his accomplishment as composer: he left 92 works behind, among them five operas. It is an unbelievable symbol of the state of the music industry that Leibowitz as a composer is as good as unknown, and that performances of his works hardly ever take place." Jacques Louis Monod, *Rene Leibowitz, 1913–1972: A Register of his Music and Writing*s (Hillsdale, N.Y.: Mobart, 1983), p. 5. The bequest of Leibowitz was donated to PSF in 1991. The inventory includes a listing of unpublished materials, partially studied by Meine, as well as a music manuscript by Paul Dessau and a literary manuscript by George Bataille. Ulrich Mosch, ed., *René Leibowitz: Musikmanuskript*e (Winterthur: Amadeus, 1995). The silence about Leibowitz may be about to break up. Apart from Sabine Meine's in-depth study of Leibowitz's life, Susanne Gärtner investigated a few of Leibowitz's works in much detail. See Susanne Gärtner, "La discipline dodécaphonique: Untersuchungen zu René Leibowitz' Rezeption später Werke Anton Weberns" (Lizentiatsarbeit an der philosophisch-historischen Fakultät der Universität Basel, 1996); Susanne Gärtner, "Komposition als klingende Analyse: Rene Leibowitz' Sonate op. 12 in ihrer Beziehung zu Weberns Variationen op. 27," *Schweizer Jahrbuch für Musikwissenschaf*t 19 (1999), and id., "New Stocktakings from an Apprenticeship: Boulez and his Sonatina", paper read at AMS Houston, 14 November 2003.

bridging radically different philosophical approaches: the dialect philosophy of history and the descriptive method of phenomenology. These intellectual currents formed the basis for a reception of German music beyond iconic nationalism and in particular served to distinguish neo-classicist aesthetics from the profound idealism of Schoenberg and Webern. Leibowitz's intimate acquaintance with the avant-garde of French philosophy and art enabled him to formulate a unique dialectical and idealist approach in his own music history writing, as we will see below. All these circumstances provide merely a snapshot of Leibowitz's figure and the dazzling network of intellectuals and artistic friends in his surrounding.[29] We must now turn to his activities as pre-war music critic.

Leibowitz first wrote for the liberal journal *Esprit* and already then displayed a wide knowledge of Parisian musical institutions and venues. From the very beginning of his work, he made unmistakable aesthetic choices. In his first contribution of 1938 he reviewed a performance of Stravinsky's latest work:

> *Jeu de Cartes*. Ça, ç'est effectivement un cauchemar que l'on croit subir en l'écoutant. Petits bouts de musique empruntés ça et là, souvent aux compositions les plus insignifiantes, le tout agençé avec une habilité diabolique (ce qui augmente encore l'impresion de cauchemar), voilà de quoi est faite cette dernière oeuvre de quelqu'un qui fut un grand musicien.[30]

Marveling at the positive reception the Parisian audience accorded to *Jeux de Cartes*, Leibowitz conjectured that this could only be explained by 'a society seeking rapid and

[29] For his relation with Daniel-Henry Kahnweiler, André Masson, Georges Limbour, George Bataille, Tristan Tzara, Raymond Queneau, Claude Levi-Strauss, Michel Leiris, Jean-Paul Sartre, and more see MEINE 2000, pp. 50–78, 118–26.

[30] René Leibowitz, "La Musique," *Esprit* 6, 67 (1938), p. 140. ("*Jeu de Cartes*. This, indeed, is a nightmare one believes to be experiencing while listening. Little snippets of music, borrowed on the left or on the right, often from the most insignificant compositions, all of which is put into action with diabolic dexterity (further heightening the impression of a nightmare): this is the last work of someone once known as a great musician.") The great musician of the past mentioned is the Stravinsky of *Les Noces* and *Le Sacre*. In his review Leibowitz calls both of these early works 'chefs d'oeuvres'. Messiaen and many younger post-war composers of the avant-garde are defined by the same aesthetic differentiation. Adorno, on the other hand, stands apart. He rejects all of Stravinsky.

cheap amusement, the only type of entertainment that this stupid and petty society can still afford'.[31] Surely, this acrid dismissal of neo-classical Stravinsky and the Parisian public's hedonism reveals one thing: the twenty-five-year-old Leibowitz had attitude. Such sharp polemics occasionally contrast with enthusiastic reviews, where the music of Viennese School is concerned. After a 1938 performance of Webern's Piano Variations, Leibowitz commented:

> Webern, le seul compositeur de nos jours qui soit remonté à la source même de la musique, qui a pris sur lui de mettre un point d'interrogation devant chacune de nos locutions musicales courantes... Webern pense sa musique organiquement en excluant d'elle tout détail inutile, en la fondant sur la pureté du travail thématique et polyphonique...[32]

As early as 1938—barely one year into his study session with Kahn and many years prior to the surge of the Parisian dodecaphony in the mid-1940s—Leibowitz has interiorized the basic concepts of the Viennese School: Webernesque 'organicism', Schoenberg's law of economy of means, and an ongoing Bauhaus-like questioning about musical syntax. The notion of purity will become important for many composers, for example Goeyvaerts in 1950.

In 1940 Leibowitz and his family went into hiding in Vichy France, first in Cannes and later in St. Tropez. All attempts to acquire a U.S. visa for the entire family had failed, even though his friend Paul Dessau had secured references from Schoenberg, Schnabel, and Krenek. During his three-years exile in the early 1940s, Leibowitz composed and wrote the book *Schoenberg et son école*—which would grant him

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[31] Ibid., my translation.

[32] Reinhard Kapp, "Im Schatten des Urbilds des Doubles," *Musiktheori*e 2, 1 (1987), p. 15. ("Webern, the only modern-day composer who dared to go back to the wellsprings of music, who took it upon himself to put a question mark in front of all current musical expressions... Thinking his music organically, Webern excludes all unnecessary detail from his music and bases it on the purity of thematic and polyphonic work...")

international fame by the late 1940s.[33] All the while he kept contact with other artists in hiding, such as for example the Dadaist Tristan Tzara. He returned to Paris a few months before its liberation in August 1944. Hiding out at the home of Georges Bataille, he was involved in a commando action to secure manuscripts of Walter Benjamin from impending seizure by the Nazis and in other resistance activities. He is rumored to have recorded Schoenberg's Wind Quintet, op. 26, at the French radio, while it was still under German occupation. In a highly symbolic act, Schoenberg's Wind Quintet was broadcast immediately after the liberation of Paris.[34]

The zero-hour atmosphere in Paris of the fall of 1944 was characterized by unbridled euphoria, especially from the quarters of the political left and liberal-minded. There was a pent-up desire to discuss all issues that had been suppressed under the reign of Fascism. The music of Schoenberg, Berg, and Webern was practically unknown at that time and Leibowitz, almost single-handedly, brought about a sea of change through his activities in the immediate aftermath of the war in France.[35] In light of the wide opening to German philosophy discussed above, the traditionally rampant anti-German musical bias at the Paris Conservatory became indefensible at the zero hour: any suppression was equally unthinkable. This combination of factors thus gave rise to the most unlikely of

[33] René Leibowitz, *Schoenberg and His School: The Contemporary Stage of the Language of Music*, translated by Dika Newlin, New York: Philosophical Library, 1949. French original as *Schoenberg et son école*, Paris: Janin, 1947.

[34] Reinhard Kapp, "Im Schatten des Urbilds des Doubles," *Musiktheorie* 2, 1 (1987), p. 17. According to Sabine Meine, it was impossible to find documents in support of this orally transmitted episode. I suggest the Schaeffer archives might yield some supporting evidence for this episode. In the immediate aftermath of the liberation of Paris, Schaeffer was the director of French National Radio.

[35] This view is expressed by Boris de Schloezer—a Russian emigré musicologist living in France—in his rather critical review of *Schoenberg et son École*. He admits that 'the silence has been broken' and shows himself apologetic of Leibowitz's 'extremism', given his position as the lone strong supporter of this music at zero hour. Boris de Schloezer, "La Musique," *La Fontaine -- Revue mensuelle de la Poésie et des Lettres françaises*, 59 (April 1947): 131–38. Max Deutsch's role, a student of Schoenberg who also lived in Paris in the post-war period, is incomparable to Leibowitz's, although Deutsch did conduct the French premieres of *Das Buch der hängenden Gärten* in 1947 and *Erwartung* in 1948.

all cases: a Schoenberg renaissance starting in Paris, the city of Stravinsky and the French neo-classicists. Surprisingly, the fact that the Fascist occupation had been a *German* one did not militate against Schoenberg, Berg and Webern in the way one might have expected.

More than a year before the full publication of *Schoenberg et son École*, Leibowitz published its historic chapter in *Les Temps Modernes* in the fall of 1945.[36] He also wrote articles for the journal *Critique*, founded by Georges Bataille, and the journal *L'Arche*. Here he invariably described the contemporary musical climate in terms of a crisis due to the lack of important composers. On every possible occasion he put forward the Schoenberg School as the only viable alternative. His reach went beyond France; the essays in *Les Temps Modernes* and *L'Arche*, for example, were also eagerly read and discussed by a group of Belgian composers and composition students. Avant-gardists André Souris and Pierre Froidebise, initially more disposed to Stravinsky, were shaken by the arguments made in "Stravinsky ou le choix de la misère musicale" from 1946.[37] Souris, then editor of the journal *Polyphonie*, quickly became a close friend of Leibowitz.[38] Among Belgian students we find musicologist Célestin Deliège, who

[36] The journal was a central platform for French Existentialism. Founded by Sartre and Merleau-Ponty, the list of authors publishing in this journal included Simone de Beauvoir, Michel Leiris, Claude Lévi-Strauss, Bertolt Brecht, Samuel Beckett, William Faulkner, Antonin Artaud, Raymond Queneau, Marguerite Duras, Raymond Aron, Pierre Klossowski, Boris Vian, Jean Genet, and Maurice Sachs. See Howard Davies, *Sartre and 'Les Temps modernes'* (Cambridge: Cambridge University Press, 1987), p. 25.

[37] René Leibowitz, "Stravinsky ou le choix de la misère musicale," *Les Temps Modernes* 2, 2 (1946): 1320–36. This article is soon followed by a 'position paper' on another alleged leading light of contemporary music: René Leibowitz, "Béla Bartók ou la possibilité du compromis dans la musique contemporaine," *Les Temps Modernes* 3, 1 (1947): 705–31.

[38] Composer, conductor, and musicologist Souris (1899–1970) was a central figure for post-war serialism in Belgium. As director of the Music Department of the Brussels Séminaire des Arts (1944–49) he introduced and arranged performances of works unknown in Brussels, especially serial music. He directed the Belgian section of the ISCM (1946–52) and was editor of the journal *Polyphonie* (1946–49). His work for *Polyphonie* stopped after the fourth issue, which was entirely dedicated to the 'dodecaphonic system' and included a composer portrait of Leibowitz.

studied with Froidebise in Liège and Souris in Brussels in the 1940s. He describes the tectonic shift caused by Leibowitz's publications:

> Tout cela [les publications de Leibowitz] a modifié entièrement le point de vue de chacun, mais beaucoup plus facilement chez mes amis et moi, évidemment, nous étions d'une génération plus jeune. Avant cette nouvelle littérature, on connaissait Schoenberg, mais vraiment très mal; on ne reconnaissait qu'un certain Schoenberg, le Schoenberg postwagnérien, tout le Schoenberg regero-brahmsien dodécaphonique avait été négligé, pratiquement censuré, comme on sait. A partir de Leibowitz, les points de vue ont été rapidement changés. Mais, ce qui est curieux, c'est qu'on a glissé en un temps record vers Webern. C'est Webern qui a été la révélation. J'avais 25 ans à peine, en 1947, quand j'ai connu les premières partitions disponibles de Webern, les Variations pour piano op. 27, la Symphonie op. 21. Je dis 'partitions disponibles': le problème était doublé d'une grande difficulté à se procurer ce matériel: les transactions commerciales avec l'Autriche n'étaient pas ouvertes. On n'avait aucun contact avec l'éditeur, l'Universal. On était donc relativement bloqué et on copiait les partitions. Voilà comment nous avons vécu cet épisode au début de l'après-guerre.[39]

The manual copying of particular scores from Schoenberg, Berg, and Webern began in 1945. The first generation of Leibowitz students, such as Martinet, Nigg, Grimaud, and Boulez, directly copied scores from Leibowitz and from then on the Webern score-copying network steadily grew.[40] Commercial availability of scores from the Viennese School remained poor until well into the 1950s. In late 1951 Stockhausen practically

[39] "All of this [publications by Leibowitz] entirely changed everybody's point of view, but much easier among me and my friends, of course, because we were of a younger generation. We knew Schoenberg before this new literature was published, but our knowledge had been very poor indeed because only the post-wagnerian Schoenberg had been acknowledged. The dodecaphonic Schoenberg, based on Reger and Brahms, had been excluded, practically censured as we now know. Beginning with Leibowitz, opinions rapidly changed. But what is really strange is that we slid with record speed towards Webern. Webern was the revelation. I was barely twenty-five in 1947, when I got to know the first available Webern scores, the Variations for piano, op. 27, and the Symphony, op. 21. I say 'available Webern scores' because it was extremely difficult to obtain such materials: commercial transactions with Austria were impossible and we had no contact with the editors at Universal in Vienna. So we were quite blocked in that sense and copied the scores by hand. This is how we lived during that episode at the beginning of the post-war era." Célestin Deliège, "Contrepoint libre à trois voix," *Brussels Interview with Pascal Decroupet and François Nicola*s, (<http://www.entretemps.asso.fr/Deliege/Celestin/Entretien.html> accessed on 6 May 2003), original document from Spring 1998.

[40] Boulez kept the following items from his studies with Leibowitz: Schoenberg's *Herzgewächse*, op. 20, a two-page analysis of Webern's Symphony, op. 21, short scores of the Concerto, op. 24, the First Cantata, op. 29, and the Piano Variations, op. 30, as well as a full score of the String Quartet, op. 28. Pierre Boulez, *Musikmanuskript*e (Winterthur: Amadeus, 1988).

begged Goeyvaerts to send him a score of Webern's Piano Variations by mail; apparently not a single score was available in Cologne. Morton Feldman recalled that the commercial availability of Webern scores was equally catastrophic in the United States:

> As late as 1950 you couldn't buy a score of Webern anywhere in town. I remember seeing Seymour Shifrin copying out Webern string quartet music from the library and photostatting copies for his friends.[41]

The big exception to the rule was Leibowitz's first book, which contained more than fifty score excerpts from the Viennese School. When *Schoenberg et son École* became commercially available in France, its effect was described as a thunderclap hitting the blue skies of French life.[42] It is true. On one hand it answered the thirst for information, on the other the medicine provided stoked even more curiosity! The Belgian avant-garde of the mid-1940s actually had forged ahead of their French colleagues; they had been able to set their sights on a prepublication copy of *Schoenberg et son École*. One of their friends, the composer Vladimir Woronoff, worked for the journal *l'Arche* and was also editing Leibowitz's book.[43] The book made its way around the globe. Japanese Kunio Toda came into contact with *Schoenberg et son École* during his stay in French Indo-China. He brought Leibowitz's book to Japan as early as 1948, where it inspired leading

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[41] Morton Feldman, "Morton Feldman Slee Lecture, November 20, 1972", Baird Hall, University at Buffalo, The State University of New York, transcription by Nicola Walker-Smith, (<http://ublib.buffalo.edu/libraries/units/music/spcoll/feldman/mfslee315.html#top> accessed on 3 March 2003).

[42] "On s'imagine difficilement aujourd'hui le coup de tonnerre que ces deux livres répresentèrent aussitôt dans le ciel bleu de la vie musicale française." GOLÉA 1958, p. 23. ("Today one has difficulties imagining the thunderclap that those two books created on the blue skies of French musical life.") Goléa stated that the two books presented "de la musique sérielle, un tableau cohérant, d'une clarté remarquable" ("a coherent, remarkably lucid picture of serial music."

[43] "…*Schoenberg et son École*, dont on s'était, avant édition, procuré des copies du tapuscrit, grâce à notre ami Vladimir Woronoff qui, ayant des responsabilités à *L'Arche*, en a été, je crois, l'éditeur." Deliège, "Contrepoint libre". (...we had procured ourselves with typescript copies of *Schoenberg and His School* before its publication, thanks to the help of our friend Vladmir Woronoff who, having also responsibilities at [the journal] *L'Arche*, was the book's editor, if I am not mistaken."

Japanese dodecaphonists Minao Shibata and Yoshiro Irino.[44] Among the cultural islands of the United States, New York was closer to Paris than to Washington. A stream of artists—musicians included—commuted between New York and Paris after the war. In 1946 composers Virgil Thomson and Nicolas Nabokov, for example, visited liberated Paris to take the pulse of the very latest dodecaphonic developments.[45] When he obtained a copy of Leibowitz's book, Schoenberg was enthusiastic and soon his best American pupil, Dika Newlin, was hard at work on an English translation. In this way the 'gospel' spread around the globe with remarkable speed. From the outset, as I will further discuss below, the 'gospel' included the orientation towards Webern.

Aside from his activities as a writer and music critic, Leibowitz, from the fall of 1944—and indeed Liberation Day itself—organized as many concerts as possible featuring the music of the Viennese School. By January 1947, at the first full-scale dodecaphonic festival, this activity had grown from a one-man show into a movement. Young musicians discussed the festival program enthusiastically on the streets of Paris,[46] while the older generation remained puzzled about this vigilant return of an alleged dead trend.[47] Webern's Symphony took Messiaen, who had not heard any of Webern's music

[44] Shibata (1916–96) and Irino (1921–80) in the decade that separates Leibowitz and Boulez. For an example of this early Japanese dodecaphony: Minao Shibata. *Three Poems after Katsue Kitazono's Surrealistic Verse*s. Compact Disc. Tokyo: Fontec, 1990.

[45] For example: Thomson and Nabokov were treated to a performance of Boulez's First Piano Sonata with the composer himself at the piano. Thomson was immediately sold. Upon his return to New York, he wrote an article in the New York Herald Tribune in which he heralded Boulez as "the most brilliant, in my opinion, of all the Paris-under-25s." Joan Peyser, *Boulez* (New York: Schirmer, 1976), p. 53. Peyser did not provide the date of Thomson's article.

[46] The festival was organized by the Club d'essai under the direction of Leibowitz. Its concerts at the Ecole Normale included works by Duhamel, Lutyens, Dessau, Nigg, Webern, Leibowitz, Schoenberg, Souris, Searle, Casanova, Dallapiccola, Berg, and Kahn. For full program information, see MEINE 2000, pp. 259–60.

[47] George Auric, a reigning neo-classicist authority at the time, regarded dodecaphonic music as 'tendance morte'. See the comments of Serge Nigg, present at the concert. Quoted in BOIVIN, pp. 61–62. Compare similar comments by Wolfgang Fortner to Henze, page 51.

until then, by surprise. His first reaction after the concert was: "Mais c'est une musique impressioniste!"[48] Although Messiaen knew Schoenberg's *Pierrot Lunaire* and Berg's *Lyric Suite* (both of which he discussed in his classes), this was a new dodecaphony. To my knowledge Messiaen's reception of Webern has not been studied,[49] but it is fair to assume that, soon after this astounding first encounter, Messiaen would have investigated Webern's music in more detail.

Leibowitz's teaching activities in the post-war years have not been studied at all. We have to combine information from the published testimonies of former students, quite a few of which can be found in Jean Boivin's *La classe de Messiaen*. In 1944 André Casanova appears to have become Leibowitz's first student. Casanova was so enthusiastic about his teaching that, before long, he had drawn a few of his friends into the circle. First Maurice Le Roux and, shortly thereafter, Serge Nigg started instruction with Leibowitz in the fall or winter of 1944–45. Others young composers swiftly followed.[50] Boulez appears to have started lessons in the spring of 1945. Claude Helffer became Leibowitz's student in harmony and counterpoint through the mediation of Michel Philippot. Leibowitz taught Helffer classic harmony with Schoenberg's *Harmonielehre*, modal counterpoint, and fugue. Helffer was asked to prepare his harmony and counterpoints exercises 'at the table'. During weekly lessons Leibowitz played the results, asking his student to comment, and sometimes made a personal remark. Helffer also remembers private concerts, which Leibowitz organized in order to

[48] "But this is impressionist music!" Serge Nigg's recollection. BOIVIN 1995, p. 62.

[49] The comments and recollections made by Messiaen's students, as reported by Jean Boivin, do not contain specific information on Messiaen's reception of Webern.

[50] Other students of Leibowitz were Yvette Grimaud, Bernard Saby, Pierre Souvtchinsky, Jean-Louis Martinet, Jean Prodromidès, Jacques-Louis Monod, André Souris, Michel Philippot, Claude Helffer, Antoine Duhamel, Hans-Werner Henze, Vinko Globokar, Diego Masson, Norbert Moret, Carlos Jiménez Mabarak, Keith Humble, Allan Pettersson, and probably many more.

familiarize his students with the music of the Viennese. A concert in early 1948 is of particular interest as it included the French premiere of Webern's Concerto, op. 24:

> J'ai le souvenir très précis d'un concert où j'ai entendu pour la première fois le Konzert op. 24 de Webern, sûrement en première audition en France, et où Serge Nigg, déjà plus ou moins brouillé avec Leibowitz, tenait la partie de piano. Parmi les familiers de cette époque il y avait, outre Michel Philippot, Antoine Duhamel, Jacques Monod [...], Jean Prodromidès...[51]

There can be no doubt that during the five-year period before 1950 Leibowitz was the umbilical point of reference for all those musicians in Paris who were interested in dodecaphony. Internationally, the situation was barely different. Steinecke contracted Leibowitz to teach dodecaphonic composition courses at Darmstadt in 1948 and 1949. These were the first two years Darmstadt opened its doors to international composers, and thus Leibowitz appeared again as a primary mediator of the music of the Schoenberg School. Henze's recollection highlights the difference between Darmstadt's dull first years and the refreshing impact of Leibowitz's teaching in 1948:

> Der erste Ferienkursus war 1946. Da haben wir Brechts *Lehrstück vom Einverständnis* aufgeführt (ich dirigierte), und es wurde sehr viel diskutiert, vor allem über den Text und seine Bedeutung. Über die Musik (von Hindemith) wurde eigentlich gar nicht diskutiert. Anfangs war keiner der später bekannt werdenden jungen Komponisten da, ich war so ziemlich der einzige junge, es gab auch einige, die im Dritten Reich mehr oder weniger mitgemacht hatten—die Namen habe ich vergessen—aber von denen wollte man nichts mehr wissen, ihre Musik fiel einfach ab, sie verschwanden dann auch mehr und mehr von der Bildoberfläche.
>
> Darmstadt nahm ja eine sehr dynamische Entwicklung, es wurden bald Entscheidungen getroffen, Weichen gestellt. Schon 1947 [recte : 1948] kam René Leibowitz und leitete eine Schönberg-Analyse-Klasse. Er war ein

[51] "I have a very clear memory of a concert in which I heard Webern's Concerto, op. 24, for the first time, certainly a French premiere, and in which Serge Nigg, already more or less at odds with Leibowitz, played the piano part. Among the familiars of that period, other than Michel Philippot, there were Antoine Duhamel, Jacques Monod [...], Jean Prodromidès..." See Helffer, "Evocation de René Leibowitz" (July 1992) and Philippot, "Souvenir de René Leibowitz" (April 1992). Philippot had been a Leibowitz student before Helffer. Claude Helffer (1922–) is a virtuoso pianist well-known for his brilliant interpretations of the post-war serialist piano repertoire. Michel Philippot (1925–92) was a composer, radio programmer, and musicologist close to Boulez and Schaeffer in the 1950s.

> wunderbarer Lehrer, und ein liebenswürdiger Mensch übrigens, er hat mir sehr viel beigebracht. Wir wollten endlich genauer wissen, wie das mit der Zwölftonkomposition nun ist, es gab doch kaum Partituren und Aufnahmen, geschweige denn Theoriebücher, und mein Lehrer, Wolfgang Fortner in Heidelberg, sagte mir damals in den Jahren 1946 und auch noch 1947 auf Befragen, daß die Zwölftonmusik eine Sache ist, die sich längst schon vor 1930 erledigt hatte.[52]

Henze's words convey an impression of the teaching qualities of Leibowitz and, perhaps even more importantly, highlight the background within which this teaching emerged. Denazification—not only in Germany, although certainly that country was the obvious candidate for such attempts—never penetrated to the heart of musical institutions. Only the most flagrant cases of criminal involvement were addressed, which left most silent witnesses or collaborators in their positions at music schools (and in other institutions). By the beginning of the Cold War these people actually turned into assets. For many of the young generation all over Europe—from Austria to Spain and Italy to Sweden—this kind of denazification was not an option. They turned away in disgust and sought alternatives, such as dodecaphony. As a prime target of Fascist prosecution, it was free from blame and held much promise for the intellectual renewal sought after the war.

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[52] Hubert Kolland, "Die Schwierigkeit, ein bundesdeutscher Komponist zu sein: Neue Musik zwischen Isolierung und Engagement. Gespräch mit Hans Werner Henze.," in *Musik 50er Jahr*e, ed. by Hanns-Werner Heister and Dietrich Stern (Berlin: Argument-Verlag, 1980), p. 58. Fortner echoed the evaluation by Georges Auric, see page 48. ("The first summer course was in 1946. We put on Brecht's *Lehrstück vom Einverständnis* (I conducted it), and there was a great deal of discussion about the text and its meaning, but nobody discussed Hindemith's music. At the beginning none of the composers who were later to become famous was there. I was the only young composer among instrumentalists and singers of my age. There were also a few senior composers who had more or less collaborated during the Third Reich —I've forgotten their names—but nobody wanted to know about them; their music was no good, and they quickly vanished from the scene.

Darmstadt's development was dynamic; decisions were swiftly taken and guidelines laid down. As early as 1947 [recte: 1948] René Leibowitz took a class analyzing Schoenberg. He was a marvelous teacher and, what is more, a delightful man; he taught me a great deal. We wanted to know in more detail what twelve-note composition was all about. But there were hardly any scores or recordings, let alone theoretical works, and my teacher, Fortner, had informed me in Heidelberg in 1946 and 1947 that twelve-note music had gone out long before 1930.") Hans Werner Henze, "German Music in the 1940s and 1950s," in *Music and Politic*s (Ithaca, New York: Cornell University Press, 1982), pp. 37–38.

Henze's comment that there were "hardly any scores or recordings, let alone theoretical works" on the dodecaphonic method of composition highlights the effects of the fierce Fascist oppression of so-called degenerate music. The music of the Viennese School as well as important books, such as Schoenberg's *Harmonielehre*, had been denounced as cultural Bolshevism. In many European libraries, these sources had not survived the onslaught of Nazi barbarism and this scarcity lasted well into the 1950s. Moreover, none of the three Viennese composers had published a comprehensive book on dodecaphony and, thus, Leibowitz's pioneering publications on the music and theory of the Schoenberg School held a crucial status, nothing short of an absolute monopoly.

SCHOENBERG AND HIS SCHOOL

We must now turn to the book that made all the difference: *Schoenberg and His School*. Comparing the latter with other monographs on dodecaphony that became available in the early 1950s, it becomes clear that none of them could have fulfilled a similar function of providing both information and inspiring philosophic exegesis. The reason is: in his discussion of the music of the three Viennese composers, Leibowitz supplied more than fifty excerpts of actual scores, in some cases even complete works.[53] The first post-war book on dodecaphony to appear in Germany, Eimert's *Lehrbuch der Zwölftontechnik* of 1950, included only about five excerpts from Schoenberg's music. Eimert is representative of a group of more mature composers who sought to detach dodecaphonic theory from its close connection with the Schoenberg School; therefore this lack of score excerpts was also systemic and not merely due to a lack of access to

[53] For example, the first movement of Webern's Five Pieces for Orchestra, op. 10. In René Leibowitz, *Schoenberg and His School: The Contemporary Stage of the Language of Musi*c (New York: Philosophical Library, 1949), pp. 199–200. Also large portions of the Piano Variations, op. 27, and Symphony, op. 21.

source materials. Krenek, another pre-war dodecaphonist, saw the major importance of the twelve-tone technique in the restoration of counter-point.[54] Josef Rufer's *Die Komposition mit zwölf Tönen* of 1952 was a more serious and unique competitor to Leibowitz. Rufer had been Schoenberg's assistant before the latter's forced exile in 1933 and, during the preparation of his book, again worked closely with Schoenberg up to the latter's death in July 1951. The intention was to provide a composition treatise as close as possible to the spirit of Schoenberg. But in 1952 more than a few members of the young generation had found their own set of compositional problems, so that Rufer's book, rather than making history, turned almost instantly into a historic document.

With Leibowitz's first book the matter stands differently. Its subtitle 'The Contemporary Stage of the Language of Music' makes plain that Leibowitz is not as much presenting an historical account of the music of the Viennese as he is posing a big challenge to contemporary music in general. His layout of the subject matter in five parts confirms this view:

1. Prolegomena of Contemporary Music
2. Arnold Schoenberg: The Origin and Foundations of Contemporary Music
3. Alban Berg: The Awareness of the Past in Contemporary Music
4. Anton Webern: The Awareness of the Future in Contemporary Music
5. The Structure of Contemporary Musical Speech

The 'Prolegomena' chapter deals with the history of Occidental music and the last chapter—making the fine distinction between language and speech—provides a summary of the most advanced positions in music to date. The central three chapters retrace the historical development of the three Viennese composers as a series of compositional

[54] Ernst Krenek, *Studies in Counterpoint: Based on the Twelve-Tone Technique* (New York: Schirmer, 1940). Morag Grant proposes an alternative view: "While Krenek and others focused on the *harmonic* rather than contrapuntal aspects of the twelve-tone technique, the writings of René Leibowitz not only emphasized the essential contrapuntality of the technique, ..." My emphasis. Grant, *Serial Music, Serial Aesthetics*, p. 42.

problems and their more or less successful solutions in the form of actual music. On the most global level of analysis, Leibowitz sees Schoenberg as the central genius of the Viennese; he laid the foundations for a transition from a tonal world to an as of yet unknown musical future, a *terra incognita*. Berg is portrayed as the genius oriented towards the past and, most importantly for the history of post-war music, Webern's works constitute the most advanced stage of contemporary music around 1940.

In the preface, Leibowitz's discloses that in his "opinion the true artist is the one who not only *recognizes* and becomes completely aware of the deepest problems of his art, but who also proceeds to their solution with the utmost integrity and uncompromising *moral strength*."[55] The moral imperative—reflected throughout the book in the use of terms like honesty, courage, and purity among others—was of deep concern to many young post-war composers. The artist is here portrayed almost as a philosopher seeking out the most fundamental problems of existence and, once identified, proceeds to propose valid solutions. In this sense, then, the book transcends by far an apologetic account of a particular musical style.

The key to reading the book lies perhaps in the introduction, subtitled 'The Essential Factors of Occidental Music and the Conditions of their Comprehension'. It is the conscious employment of polyphony that differentiates Occidental music from all other types of music in the world. Polyphony is an "inseparable whole… constantly under the most absolute control to be found in any form of valid musical expression"; it combines horizontal and vertical musical dimensions of music under a single unifying principle.

[55] LEIBOWITZ 1949, p. xvi. Boulez certainly would agree with Leibowitz on that point.

On the one hand, the essential meaning of polyphony is embodied in a "continual synthesis" that consciously takes its lead from all prior historical acquisitions, a synthesis Leibowitz describes as a "ceaseless march towards the horizon of the musical future [which] belongs to the very essence of polyphony…thus connected with an endless chain of generations of musicians—known or unknown—working for each other." This reflects Leibowitz's abstract approach and his engaging philosophical tone. The term 'synthesis', employed in a Hegelian sense, characterizes his dialectical approach to music history.

On the other hand, Leibowitz draws on Heidegger's language philosophy when he states that the essential meaning of polyphony originates "in a first *intentional creative effort*, at first a *project* and then a *realization.*" His endorsement of Parisian existentialist circles is most clearly borne out by his usage of the word 'project':

> This term [project] will be used throughout this book in its strictly Heideggerian sense (Entwurf), i.e.: by existing, the human body *pro-jects* the world, causes the world to *be there*: this *pro-ject* is man's faculty of *being*; by continuously projecting himself in all his actions he becomes aware of his reality and of the reality of his actions which exist as the *present* and determine the *future.*[56]

This attitude redefines man's relation with history. Leibowitz does not stay within the limits of the Hegelian heritage—which defined Schoenberg's thinking—and thereby radicalizes the primacy of the idea in musical composition. Heidegger's philosophy moves beyond Hegelian dialectics by questioning the fundamental nature of time. The key lies in the statement that 'existing causes the world to be there'. Each existence therefore may indeed create its own world, and the independent mechanistic vision of an objective world becomes an illusion. Simultaneously the formulation of ideas as

[56] ibid., p. xxi, fn. 1.

language and, in our case, music, attains an essentially magic dimension. Potentially, naming is coming into being.

Thus, to return to Leibowitz's quest for the essential meaning of polyphony as defined in a first historic intentional creative effort, he finds that scholars disagree whether it is the practice of organum or heterophony that led to polyphony. Yet, both "theories describe the first polyphonic experiments [in Occidental music history] as the unfolding of two distinct parts from a single initial sound-form" and thus "the primitive 'polyphonic' forms imply at one and the same time the notions of variety and unity." Leibowitz concludes that "from the beginning there cannot be any polyphony—that is to say, a certain form of musical variety—without a *unifying principle.*"[57]

Schoenberg, Webern, Leibowitz, and Boulez firmly adhered to this organicist ideal of composition. On the American West Coast, Cowell—a good friend of Schoenberg—called the overtone series "the living essence from which musicality springs"[58] and by 1930 had developed a proto-serialist organicist composition model, which was of major importance in Cage's early formation. But nowhere in post-war Europe were these principles laid out more cogently than in *Schoenberg and His School*. In a text on the emerging pointillist style written in December 1952, Stockhausen stated, for example, "tone ordering [that is, composition] therefore means the subordination of tones to a uniform principle, which is preconceived."[59] Below we will see how Goeyvaerts transmitted these basic principles from Leibowitz's publications to Stockhausen.

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[57] ibid., p. 5.
[58] Cowell, *New Musical Resources*, p. 139.
[59] Karlheinz Stockhausen, "Situation des Handwerks: Kriterien der punktuellen Musik," (Paris) (December 1952), quoted from *Texte* 1 (1963), p. 18.

Thus, Leibowitz maintains, polyphony originates from a primitive unity, and all compositional stages are increasingly complex stages of elaboration of this historic unfolding from an initial sound-form. Leibowitz's concept of polyphony is unusual in that it includes both harmonic and contrapuntal musical structures, but it is precisely this duality which constitutes the driving force of history: a new development "synthesizes all previous stages," but no stage can ever pass for a "definite and immutable result."[60]

Skipping past the chapters introducing the music of Schoenberg and Berg, we must briefly focus on Leibowitz's promotion of Webern as a major orientation point for post-war aesthetics. Leibowitz shows that, in his first independent works, Webern perfected the *Klangfarbenmelodie* and the miniature form. Citing the Six Bagatelles, op. 9, the Five Orchestral Pieces, op. 10, and the Three Small Pieces for Violoncello and Piano, op. 11, Leibowitz comments:

> The brevity of these pieces seems to defy the very idea of time; the longest rarely last more than a minute, the shortest only a few seconds. One can no longer speak of *themes* in this music; the very motives become shorter and shorter, until a single tone takes over the duties of a motive. What a purity of invention, what economy, what skill of variation is revealed in these amazing scores!

Even more striking than the concept of athematic music, we find here the idea of a single tone functioning as motive. Later Stockhausen would claim that he made the historical step from Webern's focus on interval proportion to the single tone—a step that logically lead him to synthetic timbre composition and the need for experimentation in the electronic studio—a correct claim, but one that will be qualified to account for the role of Leibowitz and Cage in Stockhausen's discoveries.

[60] LEIBOWITZ 1949, p. 36.

Continuing his discussion of Webern's first independent period, Leibowitz selects the first of the Five Orchestral Pieces, op. 10, to demonstrate Webern's perfecting of the *Klangfarbenmelodie* mechanics—a challenging project, even today. Beyond such a pioneering attempt, the music may speak for itself, since it is reproduced in short score and thus shows just how Webern organized pitch, duration, timbre, and dynamics on a note-by-note basis. In all of this Leibowitz shows how the "effort to achieve purity", based on Schoenberg's maxim of an economy of means, brought Webern to the frontiers of the known musical universe (and later, one might add, aided by the liberating influence of Cage's music and theories, brought Boulez to the border of Klee's non-classical *terra incognita*: the *Fruchtland* of Bauhaus aesthetics and philosophy).[61]

In a second chapter on Webern, Leibowitz focuses on a new period in which "Webern's style becomes so original that it can be recognized in every measure" and introduces this style in the following manner:

> …even today, some listeners who can appreciate Webern's work up to Op. 20 admit that they are thrown completely off the track when they hear most of the following works. The very appearance of these scores is disconcerting. Their bare bones frighten us. A few notes seem to have been scattered at random without any apparent reason. Hearing this music produces a similar impression. The musical speech is chopped up by continual rests. There seems to be no melody, no harmony; as for the rhythm, it appears incomprehensible. The instrumental style, too, proves problematic, reduced as it is to the emission of *isolated tones*, without the slightest concern for sonority as such. The whole produces the effect of a world of chaos ruled in the most arbitrary manner.[62]

This remarkable description fits certain pointillist works to a tee. The importance of silences, the conscious avoidance of all melody, a rhythmical construction beyond the norms of hierarchical metrical structure, and the emission of "isolated tones": all these

[61] See page 194.
[62] LEIBOWITZ 1949, pp. 210–11.

characteristics are hallmarks defining the pointillist style of the early 1950s. The pointillist description of Webern's music thus precedes pointillist music by at least five years and it stands to reason that the "isolated tone" described is indeed the origin of the later German "Punkt" that gave rise to the label "punktuelle Musik".[63] Later in that chapter, Leibowitz sets out to approach the turning point on his way to *terra incognita* by analyzing significant parts of the Webern's Symphony. Yet, neither of those works constitutes the true "culmination of contemporary polyphony".

For Leibowitz, this point is only reached in his last chapter on Webern, where he characterizes Webern's Piano Variations, op. 27, as the apogee of contemporary musical language. Beginning the longest analysis of a single work within his book, Leibowitz introduces the first seven measures of the composition:

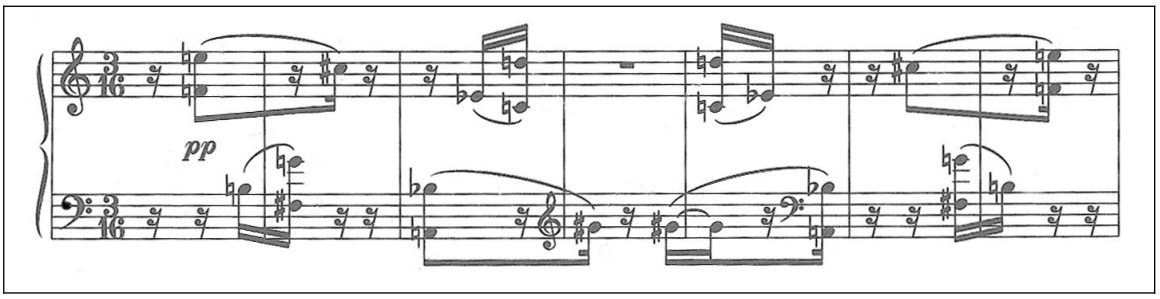

Figure 2: Piano Variations, op. 27, section I, mm. 1–7[64]

> The first section itself is subdivided into two distinct segments (a and b). The first segment (a), measures 1–7, includes that *Spiegelbild* (mirror-image) characteristic of Webern's last works.[65] Again we note the ruling principle of rhythmic 'asymmetrical symmetry.' Webern even adds a new and piquant

[63] I suspect Goeyvaerts may have contributed significantly to the transmission of this concept to Germany when he and Stockhausen listened to Messiaen's *Mode de valeurs* in 1951. Goeyvaerts recalled later: "What struck us [Goeyvaerts and Stockhausen] in particular was the 'punctual' style of the *Mode de valeurs et d'intensités*. There was an unmistakable similarity between that work and my Sonata." Karel Goeyvaerts, "Paris -- Darmstadt: 1947 -- 1956," *Belgisch Tijdschrift voor Muziekwetenscha*p 48 (1994), p. 46. In its palindromic construction and switching of row materials between pianos, Goeyvaerts's Sonata for Two Pianos derives more directly from Webern's Piano Variations than any other pointillist work of the 1950s. It stands to reason that he studied Leibowitz's book in detail.

[64] © by Universal Edition A.G., Wien/UE 10881, by permission.

> detail; from the middle of measure 4 (where the 'mirror' is situated) the long note-values (eighths) become short (sixteenths), and vice versa.[66]

For our purposes it is irrelevant that Leibowitz's analysis has since been challenged by countless later analyses of this work.[67] We are simply pointing out the formative potential of this text—no doubt the first in the long analytic history of this work—for the young generation. The short excerpt contains innovative commentary like "asymmetrical symmetry" and a musical *Spiegelbild* principle modified by "piquant detail". Serge Nigg's 'gestural' explanation of the palindromic structure dramatizes the participation of both hands in the crossing synthesis process of this passage. It is clear that this score and its spirited presentation were highly thought-provoking. Among the young pointillist composers Goeyvaerts's path to serialism derived almost exclusively from op. 27. His first serial work, the Sonata for Two Pianos (No. 1), carries the ideas of crossing and mirror-symmetries into the large scale form and Goeyvaerts's work in turn inspired Stockhausen for his own serial debut *Kreuzspiel*. Goeyvaerts's own analysis of op. 27

[65] Footnote by Leibowitz: "From the viewpoint of the twelve-tone technique, the Spiegelbild is obtained by the superposition of the original and the retrograde forms of the row, which change hands in the middle. One may also analyze the passage, according to Serge Nigg (doubtless the first French musician to make a complete analysis of a twelve-tone work), as follows: measures 1–4, right hand, first six tones of the row in their original order, left hand, last six tones in reverse order; measures 4–7, right hand, first six tones in reverse order, left hand, last six tones in original order. Both ways of analyzing the treatment of the row reveal the same technique, which is continued through the movement."

[66] LEIBOWITZ 1949, pp. 229–30.

[67] Important information about Webern's perspective on this work—far less pointillistic than the score might lead us to assume—became available *after* Leibowitz had published his book. Pianist Peter Stadlen and Leibowitz met at the Darmstadt Summer School 1948, where Stadlen performed Webern's Piano Variations. Webern had personally rehearsed the Piano Variations with Stadlen for the 1937 world première in Vienna and Stadlen's annotated working copy was later published. Among other important details that may affect our analytic understanding, the copy reveals a 'Hauptstimme'. Peter Stadlen, ed., *Annotated Working Copy of Anton Webern's Variationen für Klavier, op. 27* (Wien: Universal Edition, 1979).

remains unpublished,[68] so we should focus briefly on the multiple levels of crossings contained in its first seven measures:

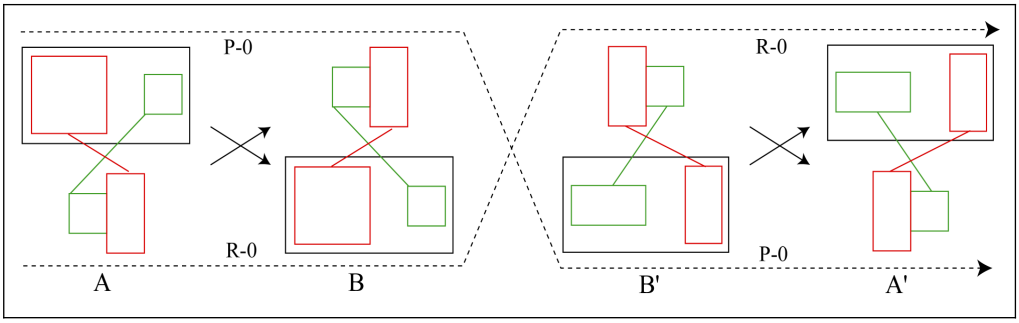

Figure 3: Crossing Mirror Symmetries in Webern's op. 27

Symmetries and crossings are ubiquitous, and Leibowitz's term 'asymmetrical symmetry' wonderfully captures the sense of the relations within the four compounds as well as in relation to their respective mirror images. We do not need to dilute this impression with a note-by-note analysis to grasp the highly abstract approach to musical forming contained in these mere seven measures, and rather propose this visual representation in terms of the aesthetics of Mondrian. It condenses the purity of design to the essential. Although the squares symbolize the sounding tones in pitch and time, the dimensions are 'normalized' among successive compounds, and thus come even closer to the underlying ideal of symmetry through perpetual crossing. This musical architecture held enormous appeal for the young generation, who were directly inspired by Leibowitz's presentation of Webern as the path to the future. At the end of his analysis—which also includes the complete score of the second movement—Leibowitz summarizes his view of Webern as the father of athematic composition:

[68] Possibly at the Goeyvaerts bequest in Leuven. See Mark Delaere, *Artistieke nalatenschap van Karel Goeyvaerts: Catalogus* (Leuven: Universiteitsarchief Katholieke Universiteit, 1998). See also fn. Fehler: Verweis nicht gefunden.

> If it is true that the entire evolution of musical language is synonymous with the evolution of the principle of variation, it is obvious that op. 27 is not only the culmination of its composer's work, but also the culmination of our musical language.
>
> *It is the first piece of music in which a composer has approached the concept of pure variation.*
>
> In our commentary on this work, we constantly put the word 'theme' in quotation marks-for good reason, since the variations reproduced no *thematic* aspect of the 'theme.' This means that in this work *everything is variation*, or, to put it another way, *everything is theme*. […]
>
> Webern's Piano Variations are, then, a basic contribution to the 'athematic' method of composition.[69]

Written in the early 1940s, Leibowitz's monograph undoubtedly is the origin of post-war Webernesque aesthetics. His own path after this first book is complex (and to explain later aesthetic shifts and public perception of Leibowitz, we must take into account his friendship with Schoenberg beginning in 1947–48), but the parallels between the pointillists and the meaning of Webern's music as presented by Leibowitz are plain to see. Careful study of *Schoenberg and His School* would lead to an intense desire to compose. Its many score excerpts and inspired commentary gave *Schoenberg and His School* a much larger influence than Messiaen's theoretical work, for example. Leibowitz had learned his craft from the wave of refugee atonalists fleeing from Fascism. He had remained in Europe throughout the darkest period and, in the void created by exile and death during the post-war period, promoted the music of Webern as the contemporary apogee of musical aesthetics.

Messiaen's Rhythmic Polyphony

Around 1944–45 Olivier Messiaen (1908–92) was the major modernist figure in France. He had completed his studies at Paris Conservatory in 1930 and, from 1931, held

[69] LEIBOWITZ 1949, pp. 240–41.

the organist position at Trinity Church in Paris, a post that he kept until the end of his life. During the 1930s he presented several works for orchestra, large organ cycles, and song cycles to the Parisian public. Together with André Jolivet, Yves Baudrier, and Jean Yves Daniel-Lesur, he founded the group *La Jeune France*, which championed a 'return to the human' and sought to bring back passion and sensuality to French music. Their inaugural concert took place on 3 June 1936 and included a presentation of the latest version of the Ondes Martenot electroacoustic instrument, performed by siblings Maurice and Ginette Martenot. In a preconcert commentary, Messiaen stated: "Every artist thus needs to try, according to the words of [Paul] Valéry, to enlarge our conceptions to the extent that they become inconceivable."[70] The four composers and the Martenots, often joined by friends, took turns organizing meetings at their homes. For example, eighteen-year old pianist, *ondiste*, and composition student Yvette Grimaud was introduced to Messiaen via the Martenots as early as 1938.[71]

[70] Quoted after Nigel Simeone, "Group identities: La Spirale and La Jeune France," *Musical Time*s 143, 1880 (Fall 2002). Messiaen was also a member of *La Spirale*, a group of composers aiming to promote "contemporary music, through concerts of French works, and through organizing exchange concerts with composers from other countries." Focused on chamber music, *La Spirale* had a short but interesting life-span from December 1935 to May 1937, including the organization of an all-Berg concert on 5 May 1936 in which the Galimir Quartet performed the *Lyric suite*. The quartet had rehearsed the work with Berg before his death (in December 1935) and made a recording for Polydor. On 19 November 1936, the Quartet gave the Paris premiere of the *Fünf Sätze*, op. 5, in a program that included works by other Schoenberg disciples. Ibid. The exodus of Jewish artists from Germany in the 1930s greatly enriched Parisian artistic and intellectual circles. It was during the same period that Leibowitz first became aware of the Schoenberg School. This indicates that Messiaen knew some music by Webern as early as 1936, but—unlike the works by Berg—the music of Webern did not make a deep impression on him.

[71] BOIVIN 1995, p. 44. The highly gifted Grimaud, born in 1920, premiered Boulez's *Notations, Trois Psalmodies*, First and Second Piano Sonatas and, with Yvonne Loriod, the first book of *Structures*. She also premiered Serge Nigg's Sonata No. 1, Goeyvaerts's Sonata for Two Pianos (with Claude Helffer), and works by Jolivet, Honegger, Wyschnegradsky among others. Her own compositions include Preludes for piano, *Quatre Chants d'espace* on non-tempered fourth-tones, and *Chant de courbe* for two pianos. She met John Cage as early as April 1949 at the ISCM Festival in Italy, where her *Three Pieces* for voice, Ondes Martenot, and percussion had been premiered. With many other avant-gardists she shared a passion for primitive music cultures. In 1956 she read a fascinating 'serialist' ethnomusicological paper on the music of the Bochiman and the Pygmies. Yvette Grimaud, "Note sur la musique vocale des Bochiman ! Kung et des Pygmées Babinga" (1960).

At the same time, Messiaen earned his first teaching positions at the École Normale and the Schola Cantorum and, by the late 1930s, was a leading figure among young French composers. Captured during the war, Messiaen spent a year in a prison camp in Eastern Europe. Prison guards permitted musical activities and Messiaen, as much as possible, spent his time composing and analyzing music. Following his release and return to Paris in May of 1941, he was offered to teach a class of advanced harmony at the Paris Conservatory. Among his students prior to 1945 we find Boulez (1944–45), Pierre Henry (1944–45), Le Roux (1943–44), Nigg (1941–44) and Yvonne Loriod. From the beginning, Messiaen taught harmony on the basis of historic examples, an uncommon practice at the time.[72] Boulez characterized Messiaen's class as "the only one that gave its members that conspiratorial feeling beneath all the excitement of technical discovery."[73]

A letter from 22 September 1943 documents the beginning of Messiaen's private composition and analysis classes at Egyptologist Guy-Bernard Delapierre's apartment. Replying to a request by Jean-Louis Martinet, the spokesman for a group of five students, Messiaen declares his willingness to organize "…régulièrement chez mon admirable ami Guy-Bernard Delapierre, des cours de composition et d'analyse musicale, auxquels Delapierre et notre petit groupe seront exclusivement conviés."[74] Delapierre and Messiaen struck up a friendship during their war imprisonment. Delapierre's stylish

[72] Messiaen's harmony text book of 1939 documents his combination of systematic and historical elements in teaching: Olivier Messiaen, *Vingt leçons d'harmonie (dans le style de quelques auteurs importants de l'histoire harmonique de la musique depuis Monteverdi jusqu'a Ravel*) (Paris: Leduc, 1939). Also notable, at that early date, is the inclusion of an exercise with a Hindu melody. BOIVIN 1995, p. 33.

[73] Pierre Boulez, "A Class and Its Fantasies," *Program Booklet of Domaine Musical Concer*t, Tribute to Messiaen on His Fiftieth Birthday (15 April 1959), quoted from *Orientation*s (1986), p. 404.

[74] BOIVIN 1995, p. 47. ("…, at my wonderful friend Guy-Bernard Delapierre's home, regular composition and musical analysis classes to which only Delapierre and our little group will be invited.")

apartment on 24 Rue Visconti offered two grand pianos in the drawing room, one of them a marvelous Bechstein. The beginning of these initially clandestine classes, distant forerunners of above-mentioned analytic class at the Conservatory that began in the fall of 1947, comes after Messiaen's completion of *Technique de mon langage musical*.[75] This two-volume work systematically presents the technical innovations that have since formed the basis of Messiaen's music. Calling themselves *les flèches,* the group of composition students and Messiaen engaged in lively debate over all analytical issues and, in the process, learned from one another.[76] Boulez joined *les flèches* in the spring of 1944. He recalls that their meetings lasted from 1 to 7 pm. Messiaen analyzed works such as Stravinsky's *Les Noces*, *Petrouchka*, and *Le Sacre*, Debussy's *Pelléas et Melisande*, *Jeux*, *La Mer*, and *Fêtes*, Ravel's *Ma Mère l'Oye*, possibly Bartók's *Music for Strings, Percussion, and Celesta*, Schoenberg's *Pierrot Lunaire*, Berg's *Lyric Suite*, and Webern's Piano Variations*,* as well as his own compositions.[77] Many of these works were banned in occupied France. Working from common two-piano arrangements of orchestral works, the excellent pianists among the clandestine 'arrows' took turns in

[75] Messiaen had started work on his technical manual of musical language during the summer of 1942 at Neussargues. In December 1942 he presented readings of it at the Conservatory. BOIVIN 1995, p. 45.

[76] The earliest members include Jean-Louis Martinet, Yvette Grimaud, Serge Nigg, Yvonne Loriod, the Canadian Françoise Aubut, and Maurice LeRoux. *Les flèches* ("arrows") were determined to revolutionize the world, turning themselves into arrows in the hands of Messiaen, who is born under the sign *Sagittarius* ("archer"). Peter Hill, "Interview with Yvonne Loriod," 9 January 1993. In *The Messiaen Companio*n (London: Faber and Faber, 1994), pp. 290–91.

[77] Boivin has collected a few student reminiscences of these earliest composition and analysis classes. BOIVIN 1995, pp. 45–52. For Messiaen and the Viennese, see pp. 309–21. I do not always agree with his inferences from the collected data. For example, I see no convincing argument why the classes of Messiaen and Leibowitz could not have co-existed quite smoothly—as long as their schedules didn't overlap. They complemented each other and, in light of Messiaen's well-known open teaching philosophy, it would not have been surprising if he had invited Leibowitz to Delapierre's apartment on more than one occasion, in order to have him assist in analyzing pivotal dodecaphonic works such as Webern's Piano Variations. BOIVIN 1995, p. 58. The fact that certain students, including Boulez, might have left one circle to become an exclusive member of the other circle seems to form an isolated phenomenon which is distorted by the focus on the person of Boulez. Messiaen's private courses were a privileged forum for the selected few, while Leibowitz's teaching grew into a musical fashion by the later 1940s.

assisting their 'archer' Messiaen during these long six-hour afternoon sessions. On 25 May 1945 Delapierre's apartment hosted the last official concert of *La Jeune France* with a single program item: *Le Quatuor pour la fin du Temps.*[78] The historic overlap between *La Jeune France* and *les flêches* suggests that the meetings transcended the function of mere teaching. Unlike the young student members of *les flêches,* Messiaen, in his mid-thirties at the time, had already made a name for himself but, at heart, he was also a musical researcher and these meetings provided him with a much needed communication forum for his own ideas.[79] His characteristic openness to music far removed in time and space—from India or Bali as well as Gregorian chant, and even bird song—and his interest in rhythmic and electronic experimentation placed Messiaen at the center of the Parisian avant-garde in 1945. Jolivet, a pupil of Varèse, was the most radically left member of *La Jeune France*. He and Messiaen occupied a similarly ambiguous position between the generations.

Messiaen's teaching approach was prospective and not retrospective and, therefore, quite indifferent to historic errors. Several of his students, conversant with Greek rhythm theory, noted that Messiaen sometimes relied on outdated insights, but none of them failed to understand that the crux was not a particular theory of rhythm but rather a way of stimulating musical thinking. In this respect one is reminded of Heidegger's famously wrong etymologies, which nonetheless stimulated some of the most fascinating philosophical concepts of the twentieth century. Messiaen did not inflict a certain body

[78] Simeone, "Group identities", p. 29.

[79] This is not to say that composition students automatically received free lessons from Messiaen, who certainly asked for payment when students had sufficient means. Boivin produces a document from the summer of 1942, in which Messiaen charges 100 francs per lesson per student (regarding a set of sporadic lessons, which took place at the house of Loriod sisters' godmother and sponsor Mrs. Sivade, prior to the meetings at Delapierre's). BOIVIN 1995, p. 45. Boulez, on the other hand, states that Messiaen never asked payment for his courses.

of knowledge on his students—a fact appreciated by both Boulez and Stockhausen. Rather, his idiosyncratic analytic insights operated on the background of their usefulness in his own compositions and, from this angle, took on their most fascinating aspect: it was as if the students were invited into the complex workshop of the composer. He was aware of the individuality of his approach, perhaps not least because of his synaesthetic experiences:

> [One of the great dramas of my life] consists of my telling people that I see colors whenever I hear music, and they see nothing, nothing at all. That's terrible. And they don't even believe me. [80]

To him, synaesthesia was a constant reminder of the individuality in musical experiences, partly explaining his refreshingly undogmatic approach to all types of music.

Language of Rhythm and Timbre

Stravinsky's *Le Sacre* stands out among the most frequently analyzed works during the private small-circle meetings at Delapierre's apartment and, after 1947, in Messiaen's analysis class at the Paris Conservatory. *Le Sacre* deeply affected Messiaen in his early formative period. In 1939 he wrote an article on Stravinsky's rhythm, which contains in a nutshell Messiaen's theatrical concept of rhythm and its historical forbears:

> Comme tous les génies novateurs, Stravinsky a vraiment inventé de toutes pièces son système rythmique. Il a eu, cependant, le sachant ou sans le savoir, des précurseurs: tout d'abord Rimsky-Korsakov, son maître, puis Debussy et Schönberg, enfin Gârngadeva, grand rythmicien hindou du XIII^{ième} siècle. Rimsky-Korsakov a préparé l'amour de Stravinsky pour les nombres premiers: 5, 7, 11, 13, etc. (voyez le choeur à 11/4 de *Sadko*). Debussy lui a ouvert la voie des mesures superposées (voyez les combinaisons des mesures à 6/4 et à 4/4 dans *Nuages*, et comparez avec *Les Noces* et *L'Histoire du soldat*). Certains augmentations rythmiques inexactes et étirées comme on peut en trouver dans le

[80] Conversation with Olivier Messiaen, 16 December 1983. In Almut Rössler, comp., *Contributions to the Spiritual World of Olivier Messiae*n (Duisburg: Gilles & Francke, 1986), p. 122. On Messiaen's synaesthesia, see Jonathan W. Bernard, "Colour," in *The Messiaen Companio*n (London: Faber and Faber, 1994), pp. 203–9.

> troisième tableau du premier acte de *Pelléas*, et les alternances de 6/16 et 2/8 à la fin de *Schéhérazade*, nous rapprochent insensiblement de Gârngadeva, et du principe vital des rythmes stravinskystes. (Ce n'est qu'en passant que je prononce le nom de Schönberg, son influence sur Stravinsky ne s'étant pas exercée dans le domaine rythmique.) Dans la série des rythmes hindous que nous a laissées Gârngadeva, on trouve le rythme 'simhavikrîdita', qui est l'application du procédé suivant: la première valeur subit d'importants changements, la deuxième valeur restant immuable. Stravinsky a considérablement agrandi ce procédé en le transformant en l'augmentation ou la diminution d'un rythme sur deux. Et cela par des répétitions brutales et forcenées, d'une puissance incroyablement fébrile et déchirante, où la logique rythmique la plus rigide s'allie aux plus invraisemblables fantaisies. Le *Sacre du printemps* est absolument typique à cet égard: on trouvera des exemples frappants de variations rythmiques partielles dans la *Glorification de l'Élue* et dans la fameuse *Danse sacrale.*[81]

By explicitly disregarding whether Stravinsky was aware of his precursors, Messiaen made plausible the inclusion of an unlikely source in his analytic approach: the medieval Indian music theorist Sharngadeva (Gârngadeva is a French transliteration). This anachronistic foreign source is so unusual that we can hardly avoid following this highly eclectic line of thought with interest.[82] Messiaen discovered the 120 *deçi-tâlas* (a catalog

[81] Olivier Messiaen, "Le rythme chez Igor Stravinsky," *Revue musical*e 191 (May 1939), pp. 91–92. ("Like all innovative geniuses, Stravinsky built his rhythmic system from scratch. His predecessors were first and foremost his teacher Rimsky-Korsakov, then Debussy and Schönberg and, finally, the famous thirteenth century Hindu rhythmician Sharngadeva. Rimsky-Korsakov aroused Stravinsky's love for primary numbers: 5, 7, 11, 13, etc. (see *Sadko's* choir in 11/4). Debussy paved his way in the use of superposed measures (see his combinations of 6/4 and 4/4 meter in *Nuages* and compare them with *Les Noces* and *L'Histoire du soldat*). Certain imprecise and drawn-out rhythmic augmentations, as found in the third scene of the first act of *Pelléas*, and the alternations of 6/16 and 2/8 at the end of *Schéhérazade*, bring us subtly closer to Sharngadeva and the life-principle of Stravinsky's rhythms. (I pronounce Schoenberg's name merely in passing, since his influence on Stravinsky did not exert itself on the rhythmic domain.) Among the series of Hindu rhythms left behind by Sharngadeva, we find the '*simhavikrîdita*' rhythm, which consists of the following procedure: the first rhythmic value undergoes important changes while a second value remains unchanged. Stravinsky considerably extended this procedure by changing it into the augmentation and diminution of one of two rhythms. And he realized this extension through brutal, frenzied repetitions, of an unbelievably feverish and disruptive force, in which the strictest rhythmical logic conjoins with the most unlikely fantasies. The *Rite of Spring* is absolutely typical in this regard: one will find striking examples of partial rhythmic variations in the *Glorification of the Chosen One* and in the famous *Sacrificial Dance*.")

[82] The mention of Stravinsky, Rimsky-Korsakov, Debussy, and even Schönberg, next to the medieval Indian theorist Sharngadeva in such a brief text is an excellent example of the fascinating, thought-provoking, and controversial type of analysis class Messiaen would have given at Delapierre's and, after 1947, at the Paris Conservatory. Ethnic musics from all corners of the world were brought into connection with classical Western composers, and Gregorian chant with the electronic inventions of Maurice Martenot.

of rhythmic formulae) as well as the *jâtis* (melodic formulae) in a French music encyclopedia in the 1920s, early on during his music studies.[83] Simple and complex use of such formulae became central to Messiaen's compositional thinking and in his analysis of *Le Sacre* he refers to the particular Indian medieval rhythmic formula *Simhavikrîdita* as a model for the rhythm in Stravinsky's *La Danse Sacrale:*

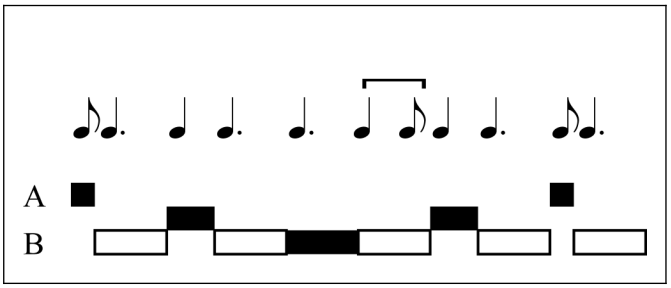

Figure 4: Medieval Hindu Rhythm *Simhavikrîdita*

According to Messiaen, the rhythmic formula *Simhavikrîdita* can be regarded as the combination of two rhythms, each of them obeying a different principle. The elements of rhythm A, shown in black in Figure 4, at first gain in duration and then diminish to return to their initial duration; this is an example of a *mobile* rhythm. The elements of rhythm B, on the other hand, stay *immobile*. Thus we have two strata that act according to their own inner logic, independent of each other. If we replace each element of Figure 4 with a complete rhythmic pattern, we arrive at Messiaen's anthropomorphic concept of *personnages rythmiques* (rhythmic actors/characters):

> Supposons une scène de théâtre: trois personnages sont sur le plateau—le premier agit, c'est lui qui mène la scène—le second est mû, est agi par le premier—le troisième assiste au conflit sans intervenir, il regarde et ne bouge

[83] Albert Lavignac, *Encyclopédie de la musique et dictionnaire du Conservatoir*e (Paris: Delagrave, 1913–1931). This dictionary is not widely available, but a complete table of *deçi-tâlas* may also be located in Robert Sherlaw Johnson, *Messiae*n (Berkeley: University of California Press, 1989), pp. 206–10. The word *jâti* means 'birth' or 'origin'. These melodic formulae are elementary building blocks for Indian ragas, Ibid., p. 10.

> pas. De même, trois groupes rythmiques sont en présence: le premier augmente, c'est le personnage attaquant—le deuxième diminue, c'est le personnage attaqué —le troisième ne change jamais, c'est le personnage immobile.[84]

A musical example, dating from the same year as his Stravinsky article, illustrates his new musical thinking and the resulting sophistication of his polyrhythmic designs. In his organ work *L'ange aux parfums* (1939) he realized three rhythmic characters: an immobile character χ (35 units) is combined with a character α and its retrograde α^R (both 22 units duration).[85]

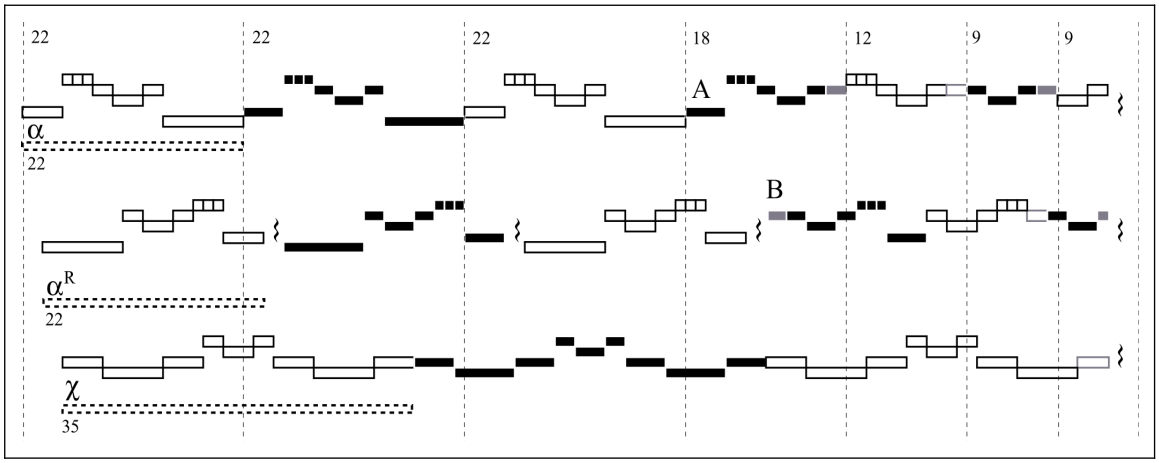

Figure 5: Rhythmic Polyphony, Beginning of Messiaen's *L'Ange aux parfums*

The diastematic notation for durations (briefer is higher) in Figure 5 endows the rhythmic characters with a distinct visual *Gestalt*. Thus, in the top line, the rhythmic character α appears three times without any alteration (white – black – white). After the letter mark *A* in the top system, the rhythmic character α is progressively diminished (black –

[84] Olivier Messiaen, *Conférence de Bruxelle*s (Paris: Leduc, 1960), p. 4. ("Imagine a stage: three characters are on the floor; the first is active, he controls the scene; the second is moved by the first, the third is present without taking part in the conflict; he watches and does not move. In the same way, three rhythmic groups are facing each other: the first is in augmentation, the character who attacks; the second is in diminution, the person attacked; the third never changes, the motionless person.") Ibid., p. 12. Messiaen provided the metaphor of the theatre to explain his concept of rhythmic polyphony within a speech held at the Brussels World Fair of 1958.

[85] *L'ange aux parfums* is the third work from Messiaen's organ cycle *Les corps glorieux* (1939).

white – black – white). In the central staff system, the retrograde rhythmic character α^R enters slightly later than rhythmic character α. The retrograde character keeps shifting, since it is preceded by a silence until letter mark *B*. After *B*, its duration is progressively reduced. Only the third rhythmic character remains immobile. Its symmetrical pattern cannot be retrograded, although Messiaen points out that one can view each symmetric rhythm as the combination of a rhythm (first half) and its retrograde (second half). Such symmetric mirror patterns interest Messiaen: they represent the charm of impossibilities and link to his metaphysical aesthetics. The rhythmical structure presented above is ametrical; bar-lines are provided as *visual aids* to facilitate performance. Similar 'performance aid' bar-lines would soon become commonplace in the instrumental music of Boulez, Pousseur, Stockhausen and other new serialist composers.[86] The graphic transcription in Figure 5 shows at one glance the aesthetic proximity to the medieval isorhythmic motet.

While Messiaen sought inspiration in bygone centuries, he was also open to the latest technological developments of his time. His first electroacoustic works for Ondes Martenot predate his *musique concrète* studies of the 1950s by more than a decade. He has described the Ondes Martenot as having "fallen from the future onto our planet."[87] The siblings Maurice and Ginette Martenot had been part of the inner circle of *La Jeune France* since the mid-thirties and Messiaen had written a sextet for Ondes Martenot,

[86] Although bar-lines usually do not have metrical meaning in their music, their presence often prompts performers to introduce an unintended syncopation feel into the music.

[87] See Messiaen's preface to Jeanne Loriod, *Technique de l'onde électronique type Martenot* (Paris: Leduc, 1987–1999), vol. 1, p. ii. Maurice Martenot (1898–1980) taught at the École Normale and the Schola Cantorum since the early 1930s and at Paris Conservatory since 1946. Jeanne Loriod (1928–), younger sister of virtuoso pianist Yvonne Loriod (1924–), studied Ondes Martenot since age 18 at the Conservatory. She later became the most famous virtuoso and renowned teacher of the instrument.

Fêtes des belles Eaux, for the Paris World Fair *Exposition Internationale de Arts et Techniques dans la Vie Moderne* of 1937. In a second electroacoustic work Messiaen explored microtonality: *Deux Monodies en quarts de ton* (1938).[88] The Parisian specialist in microtonality was Russian emigré Ivan Wyschnegradsky. His quarter-tone treatise had been published in 1933. A first concert, exclusively dedicated to his music, had taken place in Paris on 25 January 1937. His music had little success with the general public, but was well received by the younger Parisian avant-garde: Loriod, Grimaud, Nigg, and Boulez shared Messiaen's fascination for this pioneer composer and his radical theories of pansonority and sound continua.[89] In a world premiere on 10 November 1945 *les flèches* created *Cosmos* op. 28 (1939–40), *Seven Variations on the Note C* op. 10 (1918–20), and the pantomime *Linnite* op. 25 (1937).[90] This was by no means a short-lived fad. More than six years later, on 28 November 1951, Grimaud, Boulez, Helffer, and Ina Marika premiered Wyschnegradsky's *Second Symphonic*

[88] A monophonic instrument, the *Ondes Martenot* generates sound with a beat-frequency oscillator. Its sound is modified through sophisticated interaction with systems of resonance, such as a flame-shaped wooden resonance body with strings (*la palme*) or a gong (*métallique*). The performer (*ondist*) uses the left hand to regulate the envelope of sounds (very important) or switch timbres and the right hand to determine pitch.

[89] Ivan Wyschnegradsky, *Manuel d'harmonie a quarts de to*n (Paris: La Sierène Musical, 1933). Note also his recently published *magnum opus*: Ivan Wyschnegradsky, *La loi de la pansonorit*é (Genève: Contrechamps, 1996). Wyschnegradsky (1893–1979) was a Russian composer and pioneer music theorist who settled in Paris during the 1920s. There are not many recordings of his work. I found a lone review of a recent recording and its language is so striking that it is worth a note: "A terrorist willing to kill you for an idea is as sincere as they come. When Wyschnegradsky and Mather launch their musical and theoretical assaults, they are just as sincere. There is even a strange appropriateness to the lyrics of *The Red Gospel*, written by Vassily Kniassef to celebrate the Russian Revolution. Savage, blood-drenched, dripping with cruelty and hatred, it's the sort of thing only a terrorist could love. Or a theorist." John Boyer, "God Save Us All from Theorists," *American Record Guid*e 65, 4 (July 2002), pp. 182–83. This kind of histrionics from right-wing conservatives would have amused *les flèches* and induce them to redouble their promotion of Wyschnegradsky's aesthetics of pansonority. In his postface to *La loi de la pansonorité* F. Jedrzejewski calls the theory of pansonority "one of the fundamental works of music theory, a challenge for years to come." Ibid., p. 290. Certainly many of Boulez's later theories seem close enough to Wyschnegradsky's to warrant further research into their connection.

[90] André Souris (president of the Belgium ISCM section) organized the premiere of Wyschnegradsky's quarter-tone symphony *Ainsi parlait Zarathoustra* for four pianos in Brussels, on 14 February 1947.

Fragment op. 24 (1937) for four quarter-tone pianos, timpani, and percussion under the direction of Pierre Chailly.[91]

Messiaen integrated electronic and acoustic instruments in his compositions, and the Ondes Martenot became a regular contributor in his mature works of the first period, such as *Trois petites liturgies de la présence divine* (1943–44) and *Turangalîla Symphonie* (1946–48). These compositions also feature expansive use of percussion instruments such as the celesta, vibraphone, maracas, tambourine, cymbals, drums, woodblock, tam-tam, and chimes. The music's orgiastic character was created by combining the expressive scope of a glittering timbral universe with the strictly rational layers of rhythmic construction. The April 1945 premiere of *Trois petites liturgies*, conducted by Désormière, caused the largest scandal in Messiaen's career. Critics were up in arms about the combination of religion and physical sensuality. Boulez shared with Messiaen the fascination for complex percussion timbres such as the gamelan. One day in 1945 Boulez appeared at the Trinité Cathedral to present Messiaen with a balo, a gourd-resonated xylophone that originally stems from West Africa. Its resonators are placed below the keys and have a second lateral opening covered by a membrane to obtain a typical buzzing sound. According to Messiaen, this balo represented their bond of friendship and their common admiration for exotic music.[92]

Messiaen's idiosyncratic brand of Catholic mysticism certainly was his most recognizable trait. His approach to religion is compared to the rose window of Notre

[91] A *Musik der Zeit* concert on 13 November 1953 featured Wyschnegradsky's *First Symphonic Fragment* for four quarter-tone pianos next to Boulez's *Structures Ia* and *Ib*, Leibowitz's *Explication des Métaphores*, and Jean-Louis Martinet's *Prélude et fugue*, as well as a work by André Jolivet. Grimaud, Yvonne Loriod, Else Stock, and Marcelle Mercenier were the quarter-tone pianists. Wyschnegradsky's music was also broadcast on Herbert Eimert's *Musikalisches Nachtprogramm*.

[92] GOLEA 1960, p. 245.

Dame de Paris, an eternal beauty in absolute immobility. In the long run, the above-mentioned works were well received and found their way into the canon of 'new music performed more than once', but in the short term—and this is of importance in the current context—painful criticism was voiced by many professional music critics.[93] Yet, the small circles of his supporters and friends supported him for his rhythmic theories, his open teaching philosophy, his use of exotic and electronic instruments, and a strikingly obvious deep love for music.[94] For all those reasons Messiaen was a rallying point for the young Parisian avant-garde in the early and mid-1940s but, by the end of the decade, his aesthetics were questioned by his closest friends. We will see below Boulez's severe criticism of the *Turangalîla* Symphony.

Boulez's Classic Timbre Serialism

In light of Boulez's importance for the history of modern music, the poor state of his early biography is unfortunate. The three major sources of biographical data are Antoine Goléa (1958), Joan Peyser (1976), and Dominique Jameux (1984).[95] There are surprisingly few established facts regarding Boulez's development in the period 1944–48

[93] For a sobering summary of the harsh criticisms unleashed on Messiaen after the premieres of his *Vingt Regards sur l'Enfant-Jésus* (1944) and *Trois petites liturgies de la Présence* divine in 1945, see Nigel Simeone, "Vingt Regards sur l'Enfant-Jésus," *Liner notes for Hyperion CDA67351*, (<http://www.hyperion-records.co.uk/notes/67351.html> accessed on 3 July 2003), original document from 2002. According to Yvonne Loriod, Messiaen never again bothered to read what music critics had to say about his music. In addition to that blow, Messiaen suffered a personal tragedy with his first wife, violinist and composer Claire Delbos. In 1945 she showed the first signs of dementia which would incapacitate her by 1954. Messiaen increasingly had to take care of her, in addition to their son and the family household. In 1954 she had to be moved to a nursing home, where she died in 1959.

[94] This is a recurring observation made by Messiaen students over several decades of this teaching. See BOIVIN 1995.

[95] Goléa provides a mixture of biography and interview material. He was never translated into English, but his various publications on Boulez, Messiaen, and contemporary European music in the 1940s and 1950s are frequently the terminal source of information found in secondary publications. Even though his *Rencontres avec Pierre Boulez*, published in 1958, was written not long after the depicted events, his data are often erroneous. His bias sometimes overtakes the narrative. Beyond these caveats his publications constitute important secondary source material for the period 1940–1960.

and many known details are contradictory or simply wrong.[96] I can only provide a few pointers and highlight a few contradictions.

After an uneventful youth in the center of France near Lyon, eighteen year-old Pierre Boulez (1925–) moved to Paris in the fall of 1943, determined to become a musician. From September 1943 to the end of December 1944 Boulez lived in Rue Oudinot in the seventh district.[97] In January 1945 he moved into a two-room attic apartment in Rue Beautreillis in the third district, half way between Place de la Bastille and Île Saint-Louis. He would remain in these modest but very centrally situated quarters until his emigration to Germany in 1958.

Boulez's formal studies lasted only two years: one year of preparatory harmony with Georges Dandelot (1943–44) and one of advanced harmony with Messiaen (1944–45).[98] In parallel to these classic elements of Conservatory education, he took private piano and

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Theo Hirsbrunner's Boulez monograph contains a note by the author, mentioning that he agreed with Boulez not to include any biographical material and to focus solely on the writings and works. Theo Hirsbrunner, *Pierre Boulez und sein Wer*k (Laaber: Laaber-Verlag, 1985), p. 219. Indeed, Boulez's unwillingness to collaborate with a scholar on a traditional biography seems to be the root of the biographical problem.

[96] In her recent new edition, Joan Peyser wasted an opportunity to amend her biography and provide documentation. As far as I can determine, she actually reprinted all of the glaring factual errors and embarrassing typos from the first edition in Joan Peyser, *To Boulez and Beyond: Music in Europe since The Rite of Spring* (New York: Billboard Books, 1999). Two examples must suffice: Peyser calls French composer Louis Saguer "Sauger" (PEYSER 1976, p. 76; 1999, p. 189). Her report that Boulez told Pousseur "how he had made his *Deux Etudes* for magnetic tape" during their first encounter at the *Abbaye de Royaumont* in the summer of 1951 cannot be true; Boulez's etudes were produced in the fall of 1951 and the spring of 1952. Many similar errors abundantely demonstrate that Peyser lacked—and continues to lack—command of the chronology of Boulez's works. (PEYSER 1976, p. 74; 1999, p. 187). Similarly, Pousseur displays an uncanny ability to read articles one or two years before they are published (in the same chapter). This shows that Peyser's ignorance of basic chronology extends even to Boulez's published articles. However, one should also note that, perhaps due to her idiosyncratic manner of interviewing, Peyser was able to collect information that is unavailable elsewhere and often surprising. Her interviews probably were at most documented in sketchy notes, if not entirely quoted from memory.

[97] Dominique Jameux, *Pierre Boulez* (Paris: Fayard, 1984), p. 31. Goléa, echoed by Peyser, reports Boulez lived in the *Rue Beautreillis* right away (p. 18). Goléa erroneously dates Boulez's arrival in Paris in 1942. "Il n'y avait guère plus de deux ans…à la fin de 1944, que Pierre Boulez vivait à Paris (p. 15).

[98] Boulez probably took other basic music courses at the Conservatory. Solfège or classes in music history were probably mandatory, but Peyser and Jameux are silent on this. Boulez failed the admittance test to the advanced piano class, for which he had prepared the last Beethoven Sonata, op. 111.

Ondes Martenot lessons, as well as counterpoint lessons, with Arthur Honegger's wife Andrée Vaurabourg from April 1944 to May 1946.[99] These lessons were a very important, yet often overlooked part of Boulez's formal music education. Vaurabourg never forgot Boulez's "exactitude, his memory, and the [phenomenal] quantities of homework he produced" and these lessons in counterpoint certainly would have taught Boulez far more important skills than his lessons in tonal harmony with Dandelot or Messiaen at the Conservatory. We could not locate an exact description of Vaurabourg's teaching methods but, perhaps, Boulez's infatuation with certain Bach cantatas not only reflects his ongoing concern for counterpoint, but also her "phenomenal quantities of homework". Leibowitz had formulated the essence of Occidental music as a continual struggle for balance between the horizontal and vertical dimensions of music, and Boulez found and studied in Bach's music the most perfect representation of this ideal.

Most likely Messiaen's harmony class at the Conservatory had not much impact on Boulez, who easily mastered the rules of traditional harmonic languages. He was struck not by Messiaen's colorful harmonic language but, rather, by his approach to rhythm and exotic timbres. There can be no doubt that Messiaen was a revolutionary composer in 1944, when Boulez first approached him for lessons:

[99] Peter Heyworth, "The First Fifty Years," In *Pierre Boulez: A Symposiu*m, Edited by William Glock (London: Eulenburg Books, 1986), p. 5. Heyworth does not document his sources in his very comprehensive biographical article on Boulez, but he appears to have interviewed Andrée Vaurabourg himself: "Twenty-five years later she remained a woman of precision. Consulting a piece of paper on the table before her, she was able to declare, 'Pierre Boulez first came here on Wednesday 19 April 1944, at 3 pm. He continued to come weekly until 2 May 1946. He never missed a lesson and he was never late.' […] 'He always seemed to be capable of anything.' Once the principles of fugal writing had been explained, he had needed virtually no further instruction. His exactitude, his memory, and the quantities of homework he produced were phenomenal, ..." Bennett describes Vaurabourg as a 'remarkable teacher' who brought Boulez to a 'great mastery in academic fugal counterpoint' and includes a sample of his counterpoint exercise, a four-part fugue on a theme by Purcell, dating from the end of his two-year study period. Gerald Bennett, "The Early Works," In *Pierre Boulez: A Symposiu*m, Edited by William Glock (London: Eulenburg Books, 1986), pp. 42, 44. Note also that both Peyser and Jameux report the wrong dates 'winter 1943 to fall 1945'.

> "My own link with Messiaen…goes back to that spring of 1944 when I presented myself at his house to become his pupil. […] …an almost chance hearing of one of his earliest [works]—the *Thème et Variations* for violin and piano—was enough to inspire me with an immediate wish to study with him. I felt the force of his attraction immediately, as I say, at a single hearing."[100]

Apparently, Messiaen immediately invited Boulez to join the small circle of students, friends, and composers who regularly met at Delapierre's apartment. Messiaen would have discussed his recent *Technique de mon langage musical* and analyzed great works of art, as I described above. His influence can be seen in Boulez's adoption of rhythmic techniques, exotic instruments, the Ondes Martenot, rhapsodic pianistic style (an extreme example of which is provided in Messiaen's *Vingt regard sur l'enfant Jésus*, composed between 23 March and 8 September 1944, discussed and performed at the Delapierre analysis sessions) and, very briefly, even elements of harmonic style. Around 1944–45 Boulez's early *Trois Psalmodies* for piano (1944, withdrawn) reflect Messiaen's strong influence even in the work's title.

How the relation between Boulez and Messiaen evolved from the end of the formal teaching period in 1945 until about 1948 is more obscure. Goléa suggests that Boulez turned vehemently against Messiaen after starting lessons with Leibowitz. "[Boulez] n'avait plus que mépris pour son maître, et l'affichait partout de la plus violente facon."[101] This is most certainly hyperbole. Boulez started his studies with Leibowitz in 1945 and,

[100] Pierre Boulez, "The Power of Example," , Speech on the Occasion of Messiaen's Seventieth Birthday (10 December 1978), quoted from *Orientation*s (1986), p. 418. The most detailed, and perhaps most accurate account, comes from Jameux, who suggests Boulez approached Messiaen in the summer of 1944 after failing to obtain the required clearance paperwork from the preparatory class of Dandelot. This creates some uncertainty when exactly in 1944 Boulez joined *les flèches*: "Boulez a un premier contact avec Messiaen en juin 1944. [...] Il prend des cours avec Messiaen en septembre 1944, ... [....] En novembre commencent les cours ... chez Delapierre." (pp. 25–26) Jameux is aware of the variant data given by Boulez—he cites a different portion of the text on the same page—but does not address the contradicting data. Peyser and Goléa provide no additional information.

[101] GOLÉA 1960, p. 244. "Boulez only had contempt for his master and made it known everywhere in the most violent manner." Despite this statement, neither Peyser nor Jameux report any specific examples of this attitude.

one or two years later, still organized a student petition nominating Messiaen as composition teacher for the Paris Conservatory. In addition, Goléa seems to inflate an estrangement into a major conflict. In 1957 Goléa asked Boulez if he had indeed broken with Messiaen:

> "A proprement parler, non. Mais il m'avait déçu, et je lui avais dit. C'était au moment des *Trois Tâlas.* Dans cette oeuvre apparaissait avec une particulière acuité la disproportion entre la nouveauté et le raffinement des recherches rythmiques de Messiaen, et son langage harmonique qui était resté encore assez primitif. […] En réalité, il les y [do dièse et fa dièse dans *Vingt regards sur l'Enfant Jésus*] emploie le plus tonalement du monde, et c'est le cas aussi dans les *Trois Tâlas*; en a même l'impression d'une certaine complaisance dans leur emploi, qui, à l'époque, me révoltait profondément. C'est ce que je lui ai dit, et naturellement, il en était résulté un certain froid…[102]

The *Trois Tâlas* that caused the estrangement between Messiaen and his former student Boulez are virtually unknown in the extant scholarly Messiaen literature, which bears no records of their existence.[103] In fact the *Trois Tâlas* were three movements from the *Turangalîla* Symphony: Serge Koussevitzky had commissioned Messiaen for an extensive orchestral work, leaving all important decisions such as performing forces and time needed for completion to the composer's discretion. It was understood that the exclusive rights for the world premiere belonged to the Boston Symphony Orchestra. Was Messiaen in dire financial need or did he simply want to test the music prior to the

[102] Antoine Goléa, *Rencontres avec Pierre Boulez* (Paris: Slatkine, 1982), originally published in 1958, p. 160. ("Not in a real sense. But he had disappointed me and I told him so. It was at the time of the *Trois Tâlas*. In that work the disproportion between the novelty and refinement of Messiaen's rhythmic researches on one hand, and his still rather primitive harmonic language on the other stood out very prominently. […] In reality, he employs C sharp and F sharp in *Vingt regards sur l'Enfant Jésus* in the most tonal way, and this is also true in the *Trois Tâlas*; I even had the impression of a certain complacency in their use which, at that time, deeply disgusted me. I told him that and this naturally led to a certain cooling-off...")

[103] There was no trace of the *Trois Tâlas* in the Messiaen literature I surveyed. The freshly discovered work first came to my attention in Boulez's above-mentioned critical comments, collected by Goléa, where it heralded the beginning of Boulez's estrangement from Messiaen. See fn. Fehler: Verweis nicht gefunden above. Even the recent Messiaen catalog contains no information on the mysterious *Trois Tâlas*. Nigel Simeone, *Olivier Messiaen: A Bibliographical Catalogue of Messiaen's Work*s (Tutzing: Schneider, 1998).

all-important world premiere in the United States? Under the makeshift title *Trois Tâlas* he premiered three completed movements in Paris around January/February 1948 and, later that year, the works were heard again in Vienna and Darmstadt.[104] The Boston Symphony under Leonard Bernstein premiered the *Turangalîla* Symphony officially only in December 1949, so that the partial, unofficial, and illegal premiere took place almost two years prior to the world premiere.

The criticism, mentioned above in Goléa's interview, was made public in Boulez's very first article, "Propositions", of 1948. Here he declared his adherence to Messiaen's principle of regarding rhythm and pitch structures as separate domains. First Boulez summarized the contributions by Stravinsky, Bartók, Jolivet, and Messiaen—but he does not shy away from criticizing specific characteristics of his former teacher's composition technique:

> Nous venons ainsi de parcourir une période de tâtonnements et d'essais divergents dont le côté sporadique et parfois gratuit apparaît de façon évidente et désagréable. Je crois que cela est essentiellement dû au manque de cohésion entre l'élaboration de la polyphonie proprement dite et celle du rythme. Chez Messiaen en particulier, dont le côté purement harmonique hérisserait les plus indulgents, les recherches restent à l'état de canevas recouvert tant bien que mal par une masse d'accords. Quand Messiaen fait un canon rythmique, par exemple, il est tout de suite mis en évidence par des plâtras d'accords, sans nécessité aucune; il intervient dans la construction au petit bonheur; il disparaît sans plus de facons. Bref, les recherches de Messiaen ne sauraient s'intégrer à

[104] In April 1948 the short-lived German new music journal *Stimmen* (1947–50) quoted Edgar Schall's review in the *Schweizerische Musikzeitung*, providing a rare glimpse on this secret partial premiere of Messiaen's *Turangalîla* Symphony. Performed by the *Orchestre de la Societé des concerts* under André Cluytens, Schall described the concert as Paris's most important event of the season. Aside from the usual instruments of the orchestra, there had been ten percussionists and the Ondes Martenot. Schall criticized the frequent repetitions, which had a tiring effect on the listener. Only two of the movements corresponded to their Hindu name in style, while the third—a dance of joy—had been more reminiscent of American Jazz. Schall's description suggests the third *Tâla* may have been the fifth movement of the *Turangalîla* Symphony: "The Joy of the Blood of the Stars." Edgar Schall, "Stimmen aus dem In- und Ausland: Paris," *Stimme*n 1, 6 (April 1948), p. 187. For Wolfgang Steinecke's discussion of the German premiere, see Wolfgang Steinecke, "Stimmen aus dem In- und Ausland: Baden Baden," *Stimme*n 2, 13/14 (January 1949), pp. 383–84. He compared Messiaen to a Dadaist. Steinecke described the music as a wild stylistic potpourri with strong hedonistic qualities, speaking of the music's orgiastic qualities.

> son discours, parce qu'il ne compose pas—il juxtapose—et qu'il fait toujours appel à une écriture exclusivement harmonique—je dirais presque de mélodie accompagnée.[105]

This article shows us the degree to which Boulez was independent from both Messiaen and Leibowitz by early 1948: both teachers were still on his mind but, at the same time, we may appreciate Boulez's far-reaching independence when we see him pitting them against one another. In the first lines of his article Boulez criticized Leibowitz's claim that 'pitch and rhythmic structure are inseparable' as commonplace, pointing out that one may very well separately analyze the two domains. On this point Boulez sided with Messiaen—on a theoretical level. In his criticism of Messiaen, on the other hand, he adopted Leibowitz's view (without acknowledging it) and rejected Messiaen's haphazard, chaotic way of composing. Boulez charged that Messiaen's music, lacking a unifying principle, was not composition but juxtaposition. Messiaen, seeing himself as a rhythmician, must have been particularly sensitive to the allegation that he composed *exclusively* in a harmonic style—writing melodies with chordal accompaniment.

These criticisms should dispel any notion that Boulez, by 1948, still was a student of Messiaen in technical terms. He had mastered the concepts of Messiaen's *Technique de mon langage musical* by 1945–46. In the remaining pages of his article, Boulez paraded his "[p]ropositions" for establishing a unifying principle and finding a balance between pitch and rhythm structures; the article marked the apogee of Classic timbre serialism.

Since the article was published while Messiaen was in the midst of composing his vast *Turangalîla* Symphony (the two-year project was completed by December 1948), he must have been not only unwilling but also unable to consider any abrupt change in his

[105] Boulez, "Propositions", p. 256.

harmonic style. Receiving such criticism from his young composer friend and one of his best former students must have been cause for great concern. Messiaen's relation with outside critics of his work should not be compared with his relation to Boulez. He valued Boulez's aesthetics and, we argue, these constructive criticisms brought Messiaen to question his chordal harmonic style and experiment with pointillism in *Mode de valeurs*. Composed only six months after he had completed his *Turangalîla* symphony and within a year of Boulez's "Propositions", in *Mode de valeurs* Messiaen studiously avoided *all* chord formations. Moreover, the pre-compositional ordering in *Mode* can be regarded as an attempt to establish a unifying principle for the composition. We will return to this subject below.

While Messiaen composed *Mode* in the summer of 1949, Boulez heard about the work only two years later. Boulez was overjoyed when one of his friends showed him the score of *Mode* around February 1951.[106] The composition suggested to Boulez that Messiaen had heard and appreciated his genuine criticism. He may have hoped for such a reaction, but it could scarcely have been expected from the quite famous, older composer. Thus, in response to this unexpected reaction, Boulez transferred the twelve 'triplum' timbres of Messiaen's *Mode* into series and quickly (in a single night) composed the 'automatic' and 'anonymous' *Structures Ia*. In the following days, he visited Messiaen and offered him the composition as a token of his renewed trust. In conclusion, then, the period of their estrangement lasted from around February 1948 to early 1951. It should be emphasized, however, that they clearly did continue to see and talk to each other during that three-year period.

[106] For more detailed discussion on the often contentious dating of *Structures*, see page 212.

BOULEZ AND LEIBOWITZ

The enthusiasm for dodecaphony in post-war Paris brought many students and composers in contact with one another through meetings at Leibowitz's house. Most of Boulez's early friends studied with Leibowitz, a fact somewhat obscured by the later image of Leibowitz as a 'soulless academic'. This image appears mainly to have been generated by Boulez's criticisms. In the 1940s, when Leibowitz's apartment was a major center of interest and activities, attitudes must have been different indeed. Boulez's courses with Leibowitz took more than a year, but he participated in meetings and discussions at Leibowitz's apartment past these formal studies. The precise dates when Boulez began and ended these studies have not been established with absolute certainty. Furthermore, Leibowitz's teaching methodology is also concealed by stereotypes. As an autodidact, he certainly was not trained in an academy, nor was he ever associated with academia.

There is precious little information on how those meetings at Leibowitz's evolved and how they were organized. Currently, the entire group dynamic around Leibowitz in the late 1940s remains shrouded in mystery.[107] In the roughest outlines one can see that, by 1948, the enthusiasm for dodecaphony in Paris had gained proportions noticed even outside of France: Berlin's music journal *Stimmen* repeatedly mentioned the Parisian dodecaphonists and their leader Leibowitz.[108] Around 1949 the dynamic of the group changed: Nigg went in search of a communist music and Boulez, soon closely in league

[107] While allegedly writing a chapter on Leibowitz's composition classes, Goléa in fact provides plenty of misleading data to sustain myth. For example, Goléa states that Boulez stimulated Nigg, Martinet, and other composers to 'desert' Messiaen for Leibowitz: Antoine Goléa, "Les Ateliers de composition des années quarante," (1962), pp. 111–17, quoted from *Vingt ans: De Messiaen à Boulez* (1982), originally published in 1962, pp. 111–17. Boulez did nothing of the kind; Nigg studied with Leibowitz prior to Boulez!

with Cage, pursued a radical modernist aesthetic elsewhere. On the other hand, Darmstadt was on the rise and, by 1951–52, would provide an international meeting point for young composers interested in new music.

The initial relation between Leibowitz and Boulez is distorted because, later, Boulez passionately fought his former teacher. Actually Boulez took lessons with Leibowitz for at least one and a half years. Their first encounter may have taken place in February 1945,[109] when Boulez attended a private concert at the salon of Claude Halphen. Leibowitz conducted Schoenberg's Wind Quintet, op. 26. In 1958, Boulez remembered this decisive moment:

> Ce fût, pour moi, comme une illumination. J'eus le désir passionné de me familiariser avec cette musique et surtout, pour commencer, d'apprendre comment c'était fait. J'étais encore à la classe de Messiaen. Avec plusieurs de mes camarades, j'ai constitué un groupe et nous avons demandé à Leibowitz des leçons d'initiation.[110]

Boivin's recent research includes student listings from the Paris Conservatory and many statements by former Messiaen students.[111] This allows us to qualify Boulez's recollection (as reported by Goléa). Two of Boulez's classmates, Nigg and Le Roux, had been taking classes with Leibowitz as early as 1944—thus many months before Boulez's

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[108] Occasionally the names of Nigg and Casanova appear side by side with Leibowitz. For examples, see the excellent review of world-wide Western music throughout the decade 1938–48, Hans Heinz Stuckenschmidt, "Bilanz eines Jahrzehnts," *Stimme*n, 5 (March 1948), p. 136 or the discussion of Messiaen's music in Hans Heinz Stuckenschmidt, "Messiaen und die jeune France," *Stimme*n, 3 (January 1948), p. 87.

[109] The dating 'February 1945' is based on GOLÉA 1958, p. 27. Meine gives 'June 1945', basing herself on Susanne Gärtner. Meine does not specify a page number in Gärtner, but states that Gärtner came to this result by comparing a number of conflicting accounts. I was not able to obtain a copy of Gärtner's thesis. Gärtner, "La discipline dodécaphonique". Since her thesis was written in 1996, she may not have had access to BOIVIN 1995 and would have been unable to take into account Boivin's student listings from the Paris Conservatory. See our further discussion below.

[110] GOLÉA 1958, p. 28. ("For me this was an illumination. I felt the passionate desire to familiarize myself with this music and, above all, to learn how it was made. I was still attending Messiaen's class. With several of my comrades I formed a group and we asked Leibowitz for introductory lessons.")

[111] BOIVIN 1995, pp. 56–57, 60–61, and 411.

alleged illumination at salon Halphen. Both Nigg and Le Roux had become aware of Leibowitz through Casanova. Messiaen's harmony classes were limited to a maximum of twelve students and in Boulez's only year as Messiaen student (1944–45) the class had only ten students. Nigg and Le Roux were already with Leibowitz and Pierre Henry and a few others can be excluded. Thus the 'group of fellows' Boulez remembered could not be coming from Messiaen's harmony class, but he may have confused this class with the sessions at Delapierre's apartment or, alternatively, he might have referred to students from other classes at the Conservatory. Perhaps accompanied by other members of *les flêches* such as Martinet and Grimaud, Boulez thus approached Leibowitz for lessons on dodecaphonic composition techniques. Leibowitz agreed and regular studies, starting in the spring of 1945, may have lasted until the fall of 1946.[112]

Interestingly, Boulez's first work of Classic timbre serialism, a cycle of twelve piano miniatures entitled *Notations*, is alleged to have been premiered already by February of 1945.[113] The dating problems of this work are typical in early Boulez. The February 1945 premiere date for *Notations* is most likely not accurate, since it suggests that Boulez composed the work both prior to his 'illumination' at salon Halphen and prior to his studies with Leibowitz. Hirsbrunner argued that the mature use of serial techniques in *Notations* points to a date of composition after Boulez's studies with Leibowitz:

> Das Werkchen muß kurz nach dem Unterricht bei René Leibowitz entstanden sein, denn es trägt Spuren der Reihentechnik, die überhaupt nicht schülerhaft

[112] Boulez recalled hearing about the death of Bartók (26 September 1946) when he was on his way to the last lesson with Leibowitz. Information provided by BOIVIN 1995, p. 58; no source given.

[113] "Création le 12 février 1945 par Yvette Grimaud à Paris. Enregistrement radiophonique INA." Dominique Jameux, *Pierre Boulez* (Paris: Fayard, 1984), p. 447. We could not locate further corroborating primary sources to confirm this premiere date. All internal evidence leads us to believe that the work was completed only in December 1945. Hirsbrunner noted that the piano version of *Notations* was played for the second time on 1 July 1978 by French National Radio. Hirsbrunner, *Pierre Boulez*, p. 33.

> nachgeahmt, sondern frei abgewandelt wird. 'In nuce' enthält es schon den ganzen Boulez.[114]

The manuscript carries the date '23 December', without a year and not in Boulez's hand. While it may not have been composed *after* his dodecaphonic studies, it may well have been written *while* Boulez studied with Leibowitz. By the end of 1945 Boulez had been studying with Leibowitz for about a year. But while Hirsbrunner's study of the serial structures of the work—its internal evidence—suggests that the piece was completed in December 1945, the premiere data cited by Jameux and others stands in the way of this interpretation; in addition, Boulez suggested he knew only 'atonal' works at that time:

> De Schönberg, à l'époque, je connaissais très peu de choses, exactement deux oeuvres, toutes deux de la période atonale, mais non encore sérielle: *Pierrot Lunaire* et les Trois pièces opus 11. Lorsque je composai les *Trois Psalmodies*, j'ignorais jusqu'à l'existence de la musique sérielle, mais j'avais le sentiment très net de la nécessité de l'atonalité.[115]

If this recollection is correct, then the work's completion must date from 23 December 1944 and, indeed, Grimaud may have premiered *Notations* only seven weeks later, on 12 February. Boulez dedicated *Notations* to Nigg who, as we mentioned above, already studied with Leibowitz in late 1944 and, since they were both in Messiaen's harmony class, Nigg may have given Boulez hints about the new composition method. Moreover, if Boulez really felt the necessity of atonal music as early as 1944 and two of his class mates were studying with Leibowitz at that time, why would Boulez have needed several

[114] Hirsbrunner, *Pierre Boulez*, p. 33. ("The little work must have been created shortly after the studies with Leibowitz: it shows traces of a row technique which is not at all used imitatively, in a student-like manner; rather, it is freely modified. In its essence it already contains the entire Boulez.")

[115] Goléa is the only source to corroborate this quotation. Jameux and Peyser report the same and base themselves on Goléa. GOLEA 1958, p. 20. ("At that time I knew very little of Schoenberg's music, exactly two works and both of them belonged to the atonal, non-dodecaphonic period: *Pierrot Lunaire* and the Three Pieces for Piano, op. 11. When I composed the *Three Psalmodies*, I knew nothing about the existence of serial music, but I felt very distinctly the need for atonality.") Boulez's *Three Psalmodies* were premiered with *Notations* on 12 February 1945.

more months—and a concert of Schoenberg's Wind Quintet—to follow the example of Nigg and Le Roux? On the other hand, the fact that Nigg, Boulez, and Grimaud, in late 1945, together premiered Wyschnegradsky's quarter-tone music suggests yet another perspective to explain Boulez's dedication to Nigg, perhaps dating the work to 1945 after all. In summary, then, there are contradictory clues to date Boulez's first work of Classic timbre serialism and the exact beginning of his studies with Leibowitz (or Nigg).

To show the musicological relevance of *Notations*, we will briefly characterize its music here. Each miniature has a duration of twelve irregular measures and uses the same twelve-tone row—albeit with a different beginning note. Even on this largest level one can see an equivalence of time and pitch structures, twelve and twelve. *Notations* no. 1 shows applications of secondary row structures (the interval structures of the first five tones are mapped to subsequent pitches in order to create vertical structures), which are later, found in Boulez's chord multiplication techniques. This idea has been linked to practices found in the music of Stravinsky, Debussy, and Messiaen (*résonances*) but, in Boulez's case, these 'timbral enrichments' are organically linked to the row.[116] In general, the use of 'cells' for both pitch and rhythm structures is conspicuous and Boulez accorded equal rights to rhythmic and pitch structures in the overall composition process. He also made use of Messiaen's 'added rhythmic values' and 'rhythmic characters'. If indeed it is true that Boulez wrote the music prior to knowing about the existence of the twelve-tone composition method, then he 'predicted' dodecaphony *instinctively* in order to synthesize it with the rhythm theories of Messiaen. We suggest to wait for more solid

[116] Theo Hirsbrunner, "Pierre Boulez' Weg zum Serialismus," *Musiktheorie* 2, 1 (1987), p. 4 and, for a complete in-depth discussion of *Notations*, Theo Hirsbrunner, "Pierre Boulez: Notations (1945)," *Melos* 48, 2 (1986), pp. 2–20.

information before adopting such an 'instinctual' view. It would not be surprising, on the other hand, if future evidence proved that *Notations* was composed in late 1945.

The characteristic speed with which Boulez absorbed the music of the 'Schoenberg School' in his Leibowitz lessons may be gauged indirectly. Leibowitz, in his first letter to Schoenberg from 12 September 1945, identifies himself as *spokesman for a number of young composers* and challenges him to explain "why a composer who has proved and taught the world that music could be beautiful without the slightest concession, reaches back to certain principles which seemed transcended for all."[117] This bold letter suggests a number of vivid discussions had taken place at Leibowitz's apartment beforehand. The young Boulez may well have voiced his incomprehension at the neo-classical tendencies in Schoenberg's later works in 1945, and Leibowitz, as is borne out by his first book, did in fact share this point of view. In October 1945 Schoenberg's reply arrived: he rebuffed the criticism. He did not respond to Leibowitz's follow-up letter from the same month or to yet another attempt at corresponding over these issues from April 1946.

In the meantime Boulez composed a Sonatina for Flute and Piano and his First Piano Sonata, both in 1946. Again he integrated rhythmic concepts learned from Messiaen with dodecaphonic techniques, and secured an extended serial cell technique that embraced pitch and rhythm on equal terms. This technique, combined with classical forms such as sonata, sonatina, symphony, and string quartet, formed the basis of what we call Classic timbre serialism. A few contemporary letters reveal Boulez's enthusiasm about Leibowitz's teaching. In an undated letter written after the second part of the historic introductory chapter from *Schoenberg et son École* had appeared in Sartre's *Les Temps*

[117] René Leibowitz, letter to Arnold Schönberg, Paris, 12 September 1945. Collection Leibowitz, PSI. Quoted after MEINE 2000, p. 164.

Modernes (December 1945 issue), Boulez congratulated Leibowitz.[118] In this Leibowitz essay Boulez saw the first lucid analysis and account of music history that dared to move beyond the merely empirical. Referring to his lessons, Boulez commented that he was learning immensely from the study of his teacher's Chamber Concerto for 9 Instruments op. 10.[119] At present he was composing a sonata for flute and piano, in which he sought to put into practice the principles of 'articulation' and 'counterpoint' learned from Leibowitz.[120] His teacher's aesthetic influence is also documented from third parties. In a letter dated February 1946, Grimaud told Leibowitz how much Boulez and herself were moved by his teaching, how much he helped others by setting an example, searching further and deeper as well as pursuing ever more beautiful ideals. She also let Leibowitz know how happy Boulez had been after Leibowitz's had praised his Sonata.[121] Such indices point to an unbridled, harmonious, and fruitful teacher-student relationship in 1946. Boulez also participated in early dodecaphonic concerts organized by Leibowitz. In a December 1945 concert that included Webern's Symphony and Schoenberg's Chamber Concerto, op. 9, Boulez performed the harmonium part of Schoenberg's *Herzgewächse*, op. 20.[122]

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[118] Pierre Boulez, letter to René Leibowitz, s.l., s.d.. Collection Leibowitz, PSI. See MEINE 2000, p. 211 for her German paraphrase of this letter.

[119] The Chamber Concerto is scored for flute, oboe, clarinet, bassoon, horn, violin, viola, violoncello and double bass. It was written between 1943 and 1944, near the end of Leibowitz's exile in Southern France. See Mosch, *René Leibowitz*, p. 10.

[120] Boulez refers to his Sonatina for Flute and Piano. Peyser reports that the work was commissioned by Jean-Pierre Rampal, but does not document her source. (PEYSER 1976, p. 37). There is a connection, however, between Leibowitz and Jean-Pierre Rampal. The former had dedicated his Sonata for flute and piano, op. 12/b (1944) to the flutist; see Monod, *René Leibowitz*, p. 23.

[121] Yvette Grimaud, letter to Leibowitz, Paris, 21 February 1946, Collection Leibowitz, PSI. See MEINE 2000, pp. 212–13.

[122] GOLÉA 1958, pp. 27–28. *Herzgewächse* was also one of the first Schoenberg scores encountered by Stockhausen. See 325. This unearthly combination of timbres evokes a stronger electronic music aesthetic than any other Schoenberg score: harmonium, celesta, harp, and voice.

Goléa provides a colorful glimpse of Boulez, the polemical dodecaphonist. His first direct contact with the emerging genius occurred in 1946 at the Studio d'Essai of the French Radio, when it hosted a public broadcast called the 'Tribunal of the Young Composers'. This mock tribunal followed the performance of unpublished chamber music works by young composers; it included a state attorney, a defense lawyer (assigned by the composer of the work), and persons in the audience wishing to comment acting as witnesses. The ultimate judgment was left to the public at large. Here we see Boulez appearing as defense lawyer for the music of Marina Scriabine who had written a strict dodecaphonic work.[123] Boulez defended her work by expounding on its technical structure. Rising as a witness, Goléa objected that the serial technique alone could not automatically generate excellent works; one might easily compose a good work without using this technique. The French music critic recalls Boulez's reaction: "Un ouragon épouvantable se déchaîna sur ma tête, et je crois bien que Boulez n'hésita pas à me lancer un sonore 'merde' à la figure." After Goléa retorted, citing Schoenberg's opinion that many masterworks in C major remained to be written, the young Boulez commented: "Que Schönberg ait dit une connerie, tout Schönberg qu'il est, je me refuse à la prendre à mon compte."[124] This situation was probably one of many similar situations, both private and public, in which skillful polemicist Boulez sharpened his literary claws.

In the fall of 1946 Boulez presented Leibowitz with the completed score of his First Piano Sonata. Allegedly the latter immediately marked up the mistakes in the score with

[123] Born in Moscow, Marina Scriabine (1911–98) was the daughter of Alexandr Scryabin (1871/2–1915) and Tat'yna Schloezer. She moved to Paris in 1927, where she studied composition and music theory with René Leibowitz in the 1940s. She worked at the French Radio, composed, and published musicological studies.

[124] GOLÉA 1958, pp. 59–61. "A terrible storm was unleashed over my head and I even seem to recall that Boulez did not hesitate to launch a sonorous *merde* (expletive) in my direction." and "I can hardly be held responsible, if Schoenberg, despite his greatness, utters a stupidity."

a red pen—although it had been dedicated to him—and Boulez fled from the scene never forgiving Leibowitz for this affront.[125] Even if we were inclined to credit this anecdote, it still leaves unaddressed the question how their relation evolved after that incident. In her eagerness to complete her psycho-biographical analysis of Boulez, Peyser links this episode to a general pattern of behavior on the part of Boulez, showing his inability to stand criticism of any kind. We may or may not accept Peyser's analytic arguments; more unfortunate from an academic perspective is her persistent lack of crediting sources and a journalistic use of quotation marks.[126]

Even if we take the story at face value, the outburst may have been followed by an apology and renewed friendship a week or a month later. Indeed, Leibowitz sent the same First Sonata that allegedly had caused the breakup between Boulez and himself to Babbitt's New York publisher Boelke-Bomart. The latter had asked Leibowitz to provide

[125] This anecdote is based on Peyser, who interviewed Leibowitz in the summer of 1972 only weeks before he died of a heart attack. She suggests that her interview strategy unlocked some quite privileged information from an initially uncooperative Leibowitz, providing an exquisite moment of disclosure to her readers: "When I told Leibowitz my subject was Boulez, he became silent. Only after I explained that I was writing a history of mid-century music, in which Leibowitz had played a large role, did he begin to unfold his own story…" (PEYSER 1976, p. 8). Peyser reports the life-story of Leibowitz without questioning it. Meine, however, established that Leibowitz never studied personally with Webern or Schoenberg—at most, he studied with those masters in spirit. Peyser also reports that Leibowitz grew up in the home of Arthur Schnabel, a fantastic claim if there ever was one. Since Peyser won't document her sources, we remain at a loss to tell whether, here too, she was misled by Leibowitz or simply obsessed with her conviction that Boulez is hiding the truth. She trusts Leibowitz's veracity, but asserts Boulez is telling lies (p. 9). In certain statements, this bias against Boulez takes on melodramatic proportions: "And so, for the next five years, through hundreds of hours of conversation, Boulez concealed a lot of his life from me." (p. 8). Peyser is refreshing in her naiveté and disarming in her directness, but one needs to be aware of her idiosyncratic manner of working.

[126] Boulez has made clear repeatedly that he wishes to keep his private life outside the public eye. Peyser provides a rather contorted admonition that she published her biography over Boulez's objections (pp. 4–6). The 1999 update of this 1976 biography does not address any of the severe problems of the earlier work: Peyser, *To Boulez and Beyond*, see fn. Fehler: Verweis nicht gefunden. Reviewing this latest product (which adds a single chapter for Boulez's life after 1976), Martin Brody concludes that Peyser's autobiography might best be published in a separate volume, and that the remaining collection of texts from composers, critics, historians, friends, and collaborators might form an eclectic resource for twentieth century music, if stripped of psychologizing commentary, supplied with accurate references, and a bibliography. Martin Brody, "Review of 'To Boulez and Beyond: Music in Europe since The Rite of Spring'," *Note*s Vol. 57, 1 (September 2000), p. 151.

him with works of talented dodecaphonic composers from Paris. This illustrates that, as late as 1947, Leibowitz regarded Boulez as one of the leading talents and that he favored the work he allegedly had been criticizing so severely.[127]

This view also coincides with reports, which place Boulez in meetings at Leibowitz's apartment well after 1946. Pierre Souvtchinsky, who also had been taking lessons with Leibowitz, recalled that his first contact with Boulez took place at Leibowitz's apartment in 1948. While listening to young Boulez discussing musical matters, Souvtchinsky "dit avoir senti immédiatement qu'il avait affair à quelqu`un d'exceptionel."[128] Soon after this meeting, Souvtchinsky introduced Boulez to Suzanne Tezenas who would become the sponsor of the *Domaine Musical* concerts series in 1954.

In winter 1947–48 Leibowitz traveled to the United States and became a close friend of Schoenberg who, in the meantime, had been able to read his first book and his articles. Schoenberg, otherwise hard-to-please a critic when it came to music, endorsed the work of Leibowitz. He forgave him for his earlier bold criticisms, and Leibowitz did not insist on the points he had raised. Instead, he attempted to gloss over the stylistic contradictions; he tried to integrate Schoenberg's return to tonality as well as his general neo-classical tendencies with a contemporary aesthetic.[129] Leibowitz now accepted the function of European spokesman for Schoenberg's music, rather than of the young generation. When he returned to Paris, his outlook had changed considerably. What

[127] PEYSER 1976, pp. 91–92. Peyser does not address the contradiction in her story line. Of considerable historic interest is the fact that, contrary to widespread assumptions, Babbitt probably did *not* develop his first works of integral serialism in isolation.

[128] Jésus Aguila, *Le Domaine Musical: Pierre Boulez et vingt ans de création contemporain*e (Paris: Fayard, 1992), p. 43. ("said he immediately felt that this was an extraordinary person.") Aguila collected this testimony directly from Souvtchinsky. Boulez has a different recollection. He places their first encounter at an earlier time and a different place.

[129] Meine's study of their relation indicates that Leibowitz came under the influence of Schoenberg's personality, feeling great pride of having earned his friendship: MEINE 2000, pp. 188 ff.

momentarily may have appeared as a great victory already contained the seeds of his later downfall. The years 1948–49 saw Leibowitz at the height of his influence and fame—coinciding with his function as twelve-tone composition teacher in Darmstadt. Even Josef Rufer, Schoenberg's former assistant at the Berlin Conservatory, came to see Leibowitz in this light.[130]

Clearly such a development, which one might read negatively as corruption, would have been deplored by Boulez, who was not about to accept a drastic shift in his aesthetic positions on the basis of a personal relationship between Leibowitz and Schoenberg. While Leibowitz was invited to teach in Darmstadt and toured the world, Boulez had just finished his Second Piano Sonata. He could not find a publisher for any of his works and none were premiered. So while Boulez in 1948 led a lonesome struggle and insisted on his idea to combine dodecaphony with an 'atonal' rhythm in order to homogenize the two dimensions, Leibowitz's erstwhile idealism gradually fell victim to increasing stardom. The historical data shows that the name Leibowitz had become a Parisian institution by the late 1940s. Given the choice between dodecaphonists and neo-classicists, Boulez chooses the former, even if he is grinding his teeth:

> …ici, je suis complètement sevré de compagnie musicale: Leibowitz, Nigg, Martinet!! il faut avouer que c'est plutôt insupportable. Quant aux autres, ce n'est même pas à envisager. Nous vivons ici par les nullités.[131]

[130] René Leibowitz, "Ein Brief aus Hollywood," *Stimme*n, 6 (May 1948): 213–16. Here Leibowitz reported on his first visit to the United States, providing details, some of them rather dramatic, on the fate of Stravinsky and Schoenberg in their remote Hollywood exile. His characteristic rejection of Stravinsky's aesthetics prompted the editors of the journal—Rufer and Stuckenschmidt—to take the unusual step of placing a disclaimer ahead of the article: "Wir veröffentlichen den Beitrag unseres Mitarbeiters, ohne seiner Ansicht über Strawinsky ganz beizustimmen." ("We publish the contribution of our colleague, without completely sharing his opinion on Stravinsky.")

[131] Boulez, letter to Cage, 30 December 1950. In NATTIEZ 1990, p. 138. ("…here, I am totally cut off from musical company: Leibowitz, Nigg, Martinet!! I have to say as well that it is unbearable. As for the others, it can't even be contemplated. We live here among nonentities.") Jean-Jacques Nattiez, ed., *The Boulez-Cage Correspondence*, trans. and ed. by Robert Samuels (New York: Cambridge University Press, 1993), p. 89.

That was the overall situation in Paris by the end of the 1940s from Boulez's elitist perspective. As we will see below, Cage most certainly subscribed to the same view. Boulez *suffered* the contact with Martinet, Nigg, and Leibowitz, but they were still much better than the 'others'. Michel Philippot, Claude Helffer, Bernard Saby, Marina Scriabine, Pierre Souvtchinksy... Boulez's friends in 1949 had all been Leibowitz students.

In the summer following his 1947–48 visit to the United States, Leibowitz taught in Darmstadt for the first time. Again his teaching of dodecaphony would stir the minds of young composers. His Chamber Symphony, op. 16, premiered during the same Summer School, had been inspired by Webern's Concerto, op. 24, and he had dedicated his music to the memory of the Viennese master. Webern's Concerto had found its way to Paris and Leibowitz some time in 1947, after the publication of *Schoenberg and His School*. Yet again he was struck by Webern's aesthetics; he arranged the Concerto's premiere and published a first thorough analytic essay on it.[132] The short score of the Webern Concerto is also listed among Boulez's Leibowitz sketches, confirming once more that Boulez had maintained contact with Leibowitz far beyond 1946. Bernard Saby wrote an advanced serial analysis on 'aspects' of *serial functions* in Leibowitz's Symphony; it was published in early 1949 in a special *Polyphonie* issue dedicated to *Le système dodécaphonique*.[133] Perhaps this marks the apogee of Leibowitz's fame, because the issue also included a composer-portrait of Leibowitz. Unexpectedly, the adoption of dodecaphony on a vast scale worked against Leibowitz. By 1951 he was caught between a rock and a hard

[132] René Leibowitz, *Qu'est-ce que la musique de douze sons? Le concerto pour neuf instruments, op. 2*4 (Liège: Editions Dynamo, 1948). Boulez criticized Leibowitz's analysis for drawing parallels to a Beethoven exposition, probably reflecting a heated earlier discussion. Pierre Boulez, "Moment de Jean-Sébastien Bach," *Contrepoint*s, 7 (June 1951), 122–142, quoted from *Points de repère* 1 (1995), pp. 65–80.

place: conservative musicologists and composers attacked him for what they considered to be too progressive and unorthodox views, while the younger generation led by Boulez made the opposite claim.

It is not clear at what exact point Boulez's relation to Leibowitz was damaged beyond repair. We suggest this may have happened sometime in 1948 after Leibowitz's return from his first trip to America, when his fame and influence reached a peak in Paris and elsewhere. Boulez's polemics against Leibowitz are well known, so we only need to mention that a few of these *ad hominem* attacks were edited out when Boulez's articles were reprinted in book form in the 1966.[134] From the outside they seem unduly harsh, but Boulez's employer, Jean-Louis Barrault, remarked that he spotted a defensive mechanism in this excessive aggressiveness right away—a perception which he may have shared with others close to Boulez, including Messiaen or Leibowitz.[135] In conclusion, then, I see Boulez as part of both the circles around Leibowitz and Messiaen. Around 1944–46 Boulez had intense learning phases with both Messiaen and Leibowitz; later he criticized both teachers. On the one hand, Boulez adopted Leibowitz's view that composition

[133] Bernard Saby, "Un aspect des problèmes de la thématique sérielle: A propos de la Symphonie de chambre op. 16 de René Leibowitz," *Polyphoni*e, 4 (1949): 54–63. Saby opens his article with an epigraph from Leibowitz's analysis: "Nous pouvons constater toutefois un résidu de l'antinomie des fonctions sérielles et des fonctions thématisantes à l'intérieur de la majorité des oeuvres sérielles composées jusqu'à ce jour, puisque, de façon générale, nous pouvons établir dans ces oeuvres une distinction entre les fonctions sérielles et les fonctions thématiques." ("At a minimum we can recognize at the heart of most serial works composed until today a remainder of the antagonism between serial and thematic functions, because in these works we are able to establish a distinction between serial and thematic functions."). This brief excerpt must suffice to show the sophistication with which serial music was discussed in Paris around 1948. Serial *functions* are by no means the patented domain of Pierre Boulez, who is usually credited for having generalized the principle of serial functions in his article "Eventuellement..." published in 1952. Saby and Boulez were close friends in 1949 and may have discussed often the problems of generalized serial functions. See the frequent mention of Saby in theoretical contexts in Boulez's letter to Cage.

[134] Pierre Boulez, "Trajectoires: Ravel, Stravinsky, Schönberg," *Contrepoint*s, no. 6 (December 1949), 122–42, quoted from *Points de repère* 1 (1995), pp. 43–60. The censured portion is now included in NATTIEZ 1990, pp. 55–56 where it illustrates the transatlantic discussions between Cage and Boulez.

[135] Jean-Louis Barrault, "Pierre Boulez," *Cahiers Renaud-Barraul*t 2, 3 (1954), pp. 3–6.

without a unifying principle becomes mere juxtaposition and severely criticized Messiaen in that regard. On the other hand, Boulez leveled ad hominem attacks at Leibowitz—sometimes for being too academic, sometimes for uttering platitudes.[136] We have shown a number of documents to illustrate that Boulez learned far more from Leibowitz than he is willing to admit. Perhaps the words of Jean Barraqué ring true:

> À mon sens, René Leibowitz a été exagérément admiré et outrageusement dénigré...par certains qui l'approchèrent personnellement.[137]

Yet, regarding the 'influence' of certain teachers, I think a broad view is also required. When Boulez felt he could not learn from his teachers anymore—and evidence suggests this happened as early as 1946—he continued his studies autonomously:

> "…lorsque l'enseignement est devenu inefficace … on a recours à la lecture analytique des partititions. Le métier du jeune compositeur dépend donc d'un héritage dans le choix duquel il intervient plus au moins."[138]

Thus began a much more complex education, in which Boulez followed his own instincts. We know very little about these paths in 1947; the symphony that Boulez composed in that year was lost. Beginning in 1948 his first articles include indications of his analytic interests. The compositions of this forming period thus become nearly the only reflection of these autodidactic studies. Here the situation is also opaque; none of his early works was published before 1950 and most works were either withdrawn or

[136] With very few exceptions: "Le mérite d'une introduction plus directe de l'École de Vienne revient à René Leibowitz. Les oeuvres que nous analysions auprès de lui furent pour nous de véritables révélations." Daniel Abadie and Centre Georges Pompidou, *Les années 5*0 (Paris: Editions du Centre Pompidou, 1998), p. 36. ("Credit for direct introduction to the Viennese School is due to René Leibowitz. The works analyzed under his guidance were absolute revelations for us.")

[137] "In my view René Leibowitz has been exaggeratedly admired and excessively denigrated .... by those who approached him in person." Jean Barraqué, "Hommage à René Leibowitz," *,* Unpublished (1972), pp. 185–86, quoted from *Écrit*s (2001), p. 185.

[138] Pierre Boulez, "'...Auprès et au loin'," *Cahiers de la compagnie Madeleine Renaud-Jean Louis Barraul*t 2, 3 (1954), 7–27, quoted from *Points de repère 1* (1995), p. 300. ("[W]hen the teaching is no longer useful . . . [the pupil] turns to the analytical study of scores. The craft of the young composer thus depends on a heritage in whose choice he to some extent participates.") Quoted from Boulez, *Stocktakings from an Apprenticeship*, p. 144

rewritten, thus contributing to casting long shadows over the early years of serial music. Philological research has only just begun during the last decade. But before turning to those compositions of the early period, we must discuss Boulez's profession at the theatre and his aesthetics.

Soon after Boulez arrived in Paris, he learned to play the highly fashionable electronic instrument of the day: the Ondes Martenot. Many Parisian composers were fond of this precursor of the modern synthesizer and Boulez joined them with enthusiasm. He may have been introduced to the instrument by Grimaud, the Martenots —who took part in the meetings at Delapierre's apartment—or through his counterpoint classes with Andrée Vaurabourg as early as April 1944. In 1945–46 Boulez wrote a composition for Ondes Martenot quartet and an Ondes Martenot duo is featured in the first version of his *Visage Nuptial*. By 1946 he had become a virtuoso *ondist*.

Arthur Honegger suggested Boulez take the Ondes Martenot part in his incidental music for Shakespeare's *Hamlet*, which was then staged by Jean-Louis Barrault. The latter was charmed by the *ondist* and soon offered him the position of 'musical director' at his theatre company.[139] In charge of the scenic music at the Barrault Theatre, Boulez thus became financially independent at a quite early time in his life. Scheduled to work most evenings, he led the ascetic life of a performer. In the beginning he collaborated with Maurice Jarre.[140] The incidental music to *Hamlet* called for a mix of recorded brass

[139] Jean-Louis Barrault, "Pierre Boulez," *Cahiers Renaud-Barraul*t 2, 3 (1954), p. 3. Peyser and Jameux report that Boulez earned money at the Folies-Bergères by playing Ondes Martenot (PEYSER 1976, p. 31; Jameux, *Pierre Boulez*, p. 31). This must have been lucrative. In August 1950 he still worked as *ondist* at the Folies-Bergères—although by that time he grown to dislike the instrument deeply; see his letter to Cage from the same date.

[140] The collaborator of Boulez, Maurice Jarre, was another dodecaphonist at the time. He later became a successful commercial film composer (Jules Verne's *20000 Leagues Under the Sea*, 1954). Shortly after making his first contact with Cage in May 1949, Boulez suggested to Cage that they meet at Jarre's house in order to listen to the recordings of Cage's music. NATTIEZ 1990, p. 54.

sounds, percussion instruments and the Ondes Martenot. Several aspects of this work situation are worth mentioning.

The company made international tours. On the first tour to Belgium, the Netherlands, and Switzerland in 1947, Boulez encountered André Souris, a central figure of Belgium's contemporary music scene: composer, editor of the journal *Polyphonie*, close friend of Leibowitz, and president of the Belgium section of the ISCM. Boulez's first publications in the journal *Polyphonie* probably were a fruit of their encounter. He also met pianist Marcelle Mercenier, who premiered his Sonatina for Flute and Piano in Brussels 1947. The second tour to South America in 1950 offered Boulez an opportunity for direct contact with ethnic music cultures. Finally, his tour to Canada and the United States in the fall of 1952 provided Boulez with a splendid occasion to visit his friend John Cage and meet the latter's New York circle of friends.

BOULEZ'S ATHEMATIC TIMBRE SERIALISM

Through his work at the theatre Boulez became involved with a group of people close to French poet Antonin Artaud. In the mid-thirties he created the ominous-sounding Theatre of Cruelty. Influenced less by literature than by myth, ritual, Oriental art, the gestures of Balinese dance, and the world of dreams, Artaud sought theater to elicit numinous or religious feelings within the audience. At certain points he likened theater to a plague that attacks the audience, breaks down its resistance, and cleanses it morally and spiritually. Artaud emphasized space, physicality, color, and sensual awareness over text and language. The first and only work of the genre was *Les Cenci*.[141]

[141] The work transgresses social and psychological norms in multiple ways: representations of rape, incest, and bloody murder are accompanied by sound effects of the Ondes Martenot and animated light effects.

The friendship between Jean-Louis Barrault and Artaud dated from 1935, when *Les Cenci* was staged twice and ultimately failed. At the time Roger Désormière,[142] performing the Ondes Martenot, provided the scenic music for *Les Cenci*. From 1937 to 1946 Artaud was confined to a mental hospital—not for the first time in his life. Upon release in 1946 he made one last attempt to mount an important work, the radio drama *To Finish with the Power of God*.[143] The director of French radio barred the broadcast of this work from the air. A battle by Artaud's friends to fight censure failed, and Artaud died in 1947. At the end of his 1948 article "Propositions", Boulez for the first time announced his personal aesthetic program of music as "…hystérie et envoûtement collectifs, violemment actuels—suivant la direction d'Antonin Artaud…".[144] These aesthetics were close to the *La Jeune France* composer Jolivet, who aimed to return to music the age-old magic it possessed among the first human societies.

The Second Piano Sonata (1946–48) is a prime example of how Boulez attempted to realize Artaud's aesthetics in music; its composition technique unites extended rhythmic and dodecaphonic techniques, developed much further than the basis provided by Messiaen and Leibowitz. Fragments of horizontally or vertically arranged pitch series run independently or in synchronization with rhythmic cell structures (preferably of asymmetric disposition) and, in the last movement, drive the polyphony to an energetic

[142] Famous Parisian conductor and later good friend of Boulez. Roger Désormière had been one of the four members of the École d'Arcueil around Erik Satie. Later, he stopped composing and devoted his life to conducting.

[143] Like James Joyce, Artaud was a psychotic who sublimated his illness into artistic production. Artaud's big Other—usually silent in normal people—kept talking incessantly. For one thing, this chatter, only audible to him, made sleep very difficult. Beyond the apparent atheistic label, the title of his radio drama reveals a desperate attempt to silence the Other and to return into life.

[144] Music as "…hysteria and collective spells of a violent presence—following the path laid out by Antonin Artaud…". Pierre Boulez, "Propositions," *Polyphoni*e 2 (1948), 65–72, quoted from *Points de repère* 1 (1995), p. 262.

climax at which Boulez places the instruction 'Pulverize the sound'.[145] Beyond their violence and immediacy, these words literally spell out the atomization of sound into its components. Although in the Second Piano Sonata 'sound' is sought in its most physical sense—ironically this drive would be portrayed adequately by the term 'concrete music'—the technique of the composer does not extend to the level of inner sound. In this sense, then, 'Pulverize the sound' is mere hyperbole reflecting Boulez's aesthestics of 'athematic' music. In a poetic analogy to an ever faster expanding universe, in which the observer loses track of everything but a dynamic sound world suspended between isolated fragments and disjoint points, Boulez even sets the last four notes of the work—a *soggetto cavato* on 'Bach'—in two wide, expanding registral leaps (h-c^3/A-b^3). In doing so, he acknowledged his debt to a specific procedure in Bach's music:

> "…une accumulation intérieure d'energie, de force émotive, jusqu'au point où l'auteur et l'auditeur sont saturés et comme enivrés. […] …il vient alors un moment où, à force de tourner et retourner son motif, la tête semble tourner à l'auteur lui-même. Es schwindelt…Et c'est cela le sommet de l'oeuvre. Il définit ce 'vertige' musical comme une 'fermentation intérieure à la polyphonie elle-même."[146]

The kinetic force of Bach's motoric rhythm drives the musical motives into a frenetic climax—a climax at which, according to Boulez, Artaud's aesthetics emerge. Bach's 'Vertigo moment' epitomizes the aesthetics of 'timbre physicality' Boulez sought to evoke throughout the serial polyphony of vertical and horizontal structures in his Second

[145] Fourth movement, Rondeau, mm. 212–15. For the performance of this work, Boulez stresses that the bars in the score purely serve visual orientation. Inexperienced analysts of instrumental serial music often err in taking the metrical structure at face value.

[146] Boulez, "Moment de Jean-Sébastien Bach", p. 76. Boulez quoted François Florand, *Jean-Sébastien Bach: l'Oeuvre d'orgue, suivi d'un essai sur l'expression musicale du sentiment religieu*x (Paris: Éditions du Cerf, 1947). ("…an internal build-up of energy, of emotional force, to the point where the author and listener are saturated, and as if intoxicated. […] But in the end there comes a moment when, by dint of turning and returning his motif over and over, the author's own head seems to turn. *Es schwindelt*. . . And this is the high point of the work. He defines this musical "vertigo" as "a fermentation within the polyphony itself.") Quoted from Boulez, *Stocktakings from an Apprenticeship*, pp. 12-13.

Piano Sonata. Its direct, unmediated sound experience thus results from an 'internal fermentation of polyphony', reached exclusively through attention to 'athematic' musical syntax and—in contrast with synthetic timbre serialism—without any desire to apply compositional levers within the inner dimensions of sound.

Yet, the most comprehensive realization of Boulez's extended serial techniques is found in his String Quartet (the title 'Livre pour quatuor' was only added in the 1950s). Due to the exorbitant complexity of this work, a complete premiere (six movements; by the Arditti Quartet) was only accomplished in 1985. Irvine Arditti regards Boulez's String Quartet as the hardest-to-perform music in their repertory. The required timbral articulations take the string players to the limits of their abilities. Pitch and rhythm are treated as two equivalent serial dimensions, 'organically' interacting in multiple ways. In the third movement, for example, twelve rhythmic cells are laid out in series which are then subject to transformations: only the order of the cells is permutated; the content of the cells remains immobile. These serialized rhythmic cells constitute a framework to be filled by pitch series, structured according to their own logic. The technique brilliantly establishes permanent variation and renewal; it guarantees 'athematic' music. This string quartet took Boulez more than a year to compose (March 1948 to July 1949) and its completion represent the culmination of his early period of Classical timbre serialism.[147]

Boulez had spent his first three student years in Paris with intense musical studies (fall 1943 to spring 1946) and, beginning in late 1944, produced a few compositions that reflect the influence of Messiaen. In December 1945 he completed *Notations*, a work

[147] Boulez, letter to Cage, 11 January 1950. Boulez suggests that the encounter with Cage prompted the end of his classical period. "Ta rencontre m'a fait terminer une période 'classique' avec mon quatuor, qui est maintenant bien loin." NATTIEZ 1990, p. 72

that shows the impact of Leibowitz's teaching and his close friendship with Nigg. The *Notations* accomplished an organic synthesis of dodecaphonic principles and Messiaen's rhythmic ideas; these miniatures already contained core elements of Boulez's mature 1950s style. These first seeds grew in the Sonatina for Flute and Piano, the First and Second Piano Sonatas, as well as in the String Quartet. The latter work terminated in the summer of 1949 what Boulez regarded as his Classic period and, in order to reflect the effects of serial technique on musical perception, we proposed to name this period 'Classic timbre serialism'.

Boulez won friends among avant-gardists of many shades (not only in the domain of music) and, after 1946, his life was centered around his small job as musical director for the Barrault Theatre Company. He was highly communicative and took part in many types of musical activities. Musically his position was forlorn; he had no publisher for his scores and his works were not performed. The first break in this isolation occurred with the publication of "Propositions" in 1948. In this article he distanced himself from both Leibowitz and Messiaen and, more importantly, for the first time provided details about the composition techniques that define Classic timbre serialism along with score excerpts from his music that illustrate the new type of music.

CHAPTER 2: NEW MATERIALS COMPOSITION BEFORE 1949

For a large portion, this chapter is concerned with establishing the role of Cage as a historic link to the experimental research that took place during the 1920s and 1930s in Germany. A number of avant-garde movements sprang up after the First World War in Europe, among which the Bauhaus will here assume a central role. In the first section Cage's path to modern music and art is described, beginning with his eighteen-months stay in Europe in 1930–31. A second, longer section deals with the 'ultra-modernist' Henry Cowell and his achievements prior to his arrest and sentencing to fifteen years in prison on a morals charge. This section appears as an implant in Cage's history, because Cage himself did not acknowledge the influence of Cowell other than in the most general terms. Yet Cowell's influence was not general, but very specific. Many techniques ascribed to Cage previously had been used by Cowell, and this while Cage was his pupil, making it hard to understand how Cage could omit a reference to his teacher.

The third section traces Cage's path from Schoenberg's focus on tradition to Klee's (modernist) primitivism and Cage's discovery of musical silence. Aesthetically and spiritually Schoenberg had been close to the Bauhaus; it was only due to an intervention by Alma Mahler that he did not become a member of the Bauhaus' faculty.[148] Although

[148] Kandinsky, letter to Schoenberg, Weimar Bauhaus, 15 April 1923: "How often I have said to myself: 'if only Schönberg were here!' And imagine, now he could perhaps come, since a circle has formed here which has a certain influence on the necessary authorities. Perhaps the decision only depends on you. In confidence: the music school here is to get a new director. And so we immediately thought of you. Do write to me as immediately as possible, whether you would be agreeable just in principle. If the answer is yes, then we will immediately set to work with a will." Schoenberg rejected this invitation after a rather unholy intervention of Alma Mahler, the wife of Walter Gropius. She told Schoenberg that Kandinksy was an anti-Semite. Schönberg, sensitized by the Mattberg-incident of the prior year (he had been expulsed by the local authorities from his summer domicile for being a Jew), broke off the friendship with Kandinsky and declined the offer. For complete coverage of this incident, see Arnold Schönberg Center, "Separation - 1923," in *Arnold Schönberg – Wassily Kandinsk*y, (<http://www.schoenberg.at/4_exhibits/asc/Kandinsky/Trennung_e.htm> accessed on 2 January 2003), original document from 9 March 2000.

scholars have done their best to discern Schoenberg's technical influence on Cage, he appears to have learned next to nothing from the German master—not even the lesson that musical craft requires a minimum skill in harmony. Cage's contact with another Bauhaus figure was more fruitful. Experimental film-maker Oskar Fischinger helped Cage develop a sense for the world of sound. This experimenter and inventor had already made electronic music by drawing sound-forms on celluloid in 1932; each form resulted in a different sound. Only a year after meeting Fischinger, Cage demanded in his lecture "The Future of Music: Credo" the inclusion of all sounds in music: "Given four film phonographs, we can compose and perform a quartet for explosive motor, wind, heartbeat, and landslide." Cage does not mention it, but Fischinger also had been an assistant of Walter Ruttmann, who in 1930 used the latest sound-film technology to realize an acoustic film without pictures, *Weekend*—a sound collage more advanced than Schaeffer's early concrete music of 1948. Throughout this formative phase of Cage's life, Cowell's inventions and ideas present a counterpoint to Cage's version of history. We then quickly trace Cage's path from the Chicago Bauhaus to New York, identifying his first encounters with Webern and Satie and return to more detailed narrative around 1948, just after the completion of Cage's early masterwork, the *Sonatas and Interludes* (1946–48) for prepared piano. Cage had by then perfected his 'structural rhythm' and prepared-piano composition techniques and, sometime in early 1948, discovered a new kind of silence—a musical silence and a silence that speaks. Cage maintained that 'silence' was the most important discovery of his life. In the summer of 1948, after his discovery of musical silence, he aggressively promoted the music of Webern and Satie: they were the only true innovators, ever since Beethoven had led music astray.

The last section presents briefly Cage's comprehensive, but nameless theory of music, developed around the same time. The theory was more than a technique of composition; in fact it included the philosophical and aesthetical foundations of the Bauhaus, combining material with spirituality, experiment with technique, intuition, and theory. The English art historian Coomaraswamy stimulated Cage's views about spirituality. Just as Cage argued in Beethoven's case, Coomaraswamy argued that Western culture had gone astray since the Middle Ages, becoming the victim of increasing materialism. While Eastern religion and society had remained pure, Western European religion had last known spiritual purity with the universalist Christian mystic Meister Eckhart. The centrality of these universalist aims in Cage's theory led us to propose as its name 'universal theory of music'.

The Formation of Silence

John Cage was born in 1912 in California. His love for music dates back to early piano lessons during which he was *systematically* taught to keep at a distance from the music of the great masters.[149] He never became a piano virtuoso but, most importantly, learned the art of sight-reading. Once he stopped taking lessons, he began autonomous studies of music available in the library. He became so attached to the music of Grieg that he wanted to devote his life to him. Cage was a brilliant high school student and initially set out to become a Methodist minister. After two college years he repressed this urge and aspired to become a writer.

[149] Cage's piano teacher aunt Phoebe avoided masters of the nineteenth century; she warned Cage about "Bach and Beethoven (Mozart was not mentioned at all)", advised him against researching Brahms. John Cage, "A Composer's Confessions. Lecture at Vassar College," (February 1948), quoted from Kostelanetz, *John Cage, Write*r (1993), p. 27.

In order to acquire life experience, the seventeen-year old Cage traveled to Europe in the spring of 1930 and was struck by the Gothic architecture of Paris. He took piano lessons with Lazare-Lévy (also Yvonne Loriod's teacher until 1941), who recommended Cage to listen to music at concerts:

> I had never gone to concerts before, and now I went every evening. One evening I heard some modern music: Scriabin, Stravinsky. I also had seen modern painting in Paris. My reaction to modern painting and modern music was immediate and enthusiastic, but not humble: I decided that if other people could make such things, I could too.[150]

Cage also acquired an excellent command of the French language, strikingly evident in his correspondence with Boulez later on. He visited Spain,[151] Italy, and the Bauhaus in Germany.

Upon returning to Los Angeles in late 1931,[152] Cage and his companion Don Sample lived for close to a year at the guesthouse of the King's Road residence of architect Schindler.[153] Here Cage met Galka Scheyer, who brought to the USA the work of the group she called the *Blue Four*: Paul Klee, Wassily Kandinsky, Alexei Jawlenski, and Lyonel Feininger. Through Scheyer, Cage remained very closely involved with the work

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[150] Cage, "A Composer's Confessions", p. 29. Also called the Vassar Lecture of 1948, this text is an excellent account of Cage's development as a composer; he later frequently refers back to the experiences first described here. Unless otherwise specified, we base our biographical information on this text. Cage gavethe lecture at a conference on 'The Creative Arts in Contemporary Society', held at Vassar from 27 to 29 February 1948. The keynote address was given by Professor F. O. Matthiessen, Department of English, Harvard University. The Drama and Dance Panel included Irwin Shaw, playwright, and Merce Cunningham. The Art and Music Panel included painter Ben Shahn and Cage. John Malcolm Brinnin, poet, former member of the Vassar Department of English, spoke. Professor Paul Weiss, Department of Philosophy, Yale University gave the summary and discussion. See Jeremy R. Linden, "History of Vassar College," Based on information from *The Great Experiment: A Chronicle of Vassa*r, By Dorothy Alice Plum and George Brendan Dowell, (<http://faculty.vassar.edu/daniels/> accessed on 10 June 2003), original document from 1961.

[151] He composed his first works on the Spanish island of Mallorca.

[152] Date of return given in David Nicholls, "Cage and America," in *The Cambridge Companion to John Cag*e, ed David Nicholls (Cambridge: Cambridge University Press, 2002), p. 8.

[153] Thomas S. Hines, "'Then not yet Cage': The Los Angeles Years, 1912–1938," *John Cage: Composed in Americ*a, Edited by Marjorie Perloff and Charles Junkerman (Chicago: University of Chicago Press, 1994), p. 84.

of the Bauhaus: "when I would bring a Klee back to her, for instance, after having had it for several months, she would say, 'oh you could have kept it.'"[154] Throughout the 1930s, Cage was an avid student of Bauhaus literature; among others he studied Moholy-Nagy's *The New Vision: From Material to Architecture*.[155] From the time of his trip to Europe in 1930–31 throughout his associations with the New York School of painters in the 1940s, he kept in contact with ideas and people related to the Bauhaus.

This explains why Cage initially composed *and* painted. He found his model in artists like Klee, Kandinksy, and Schoenberg. His first compositions were either based on extensive mathematical calculations or inspired by poetry. To earn money, he organized lectures on contemporary art and music, thereby advancing his expertise in both. Preparing a presentation of Schoenberg's *Drei Klavierstücke*, op. 11, prompted Cage to approach pianist Richard Buhlig, who had premiered this work in the United States. While not formally his composition teacher, Buhlig became a friend and agreed to criticize Cage's works on a regular basis. One day, after Cage had arrived first half an hour too early and then half an hour too late for their meeting, Buhlig lectured him on the importance of time: "He then talked to me for two hours about time: how it was essential to music and must be observed carefully and always by anyone devoted to art." This is less anecdotal than it seems: Cage took Buhlig's words seriously and developed a two-part counterpoint method based on a dodecaphonic time-point discipline:

> Two voices, each one having a chromatic range of twenty-five tones, that is, two octaves, and having a common range of one octave or thirteen tones, would progress in such a way that no one tone would be repeated between two voices

[154] Joan Retallack, ed., *Musicage: Cage Muses on Words, Art, Music* (Hanover, NH: Wesleyan University Press, 1996), p. 88.

[155] László Moholy-Nagy, *The New Vision, From Material to Architecture* (New York: Brewer, Warren & Putnam, 1932). See Retallack, *Musicage*, p. 87.

> until at least eleven had intervened, and no tone in a single voice would be repeated until all twenty-five had been employed.[156]

For the first time Buhlig recognized progress in Cage's compositions; he suggested Cage contact Henry Cowell to find out if he might be willing to publish his work.

Cowell's Overtone Serialism

When Buhlig made that suggestion to Cage in 1933, Henry Dixon Cowell (1897–1965) was doubtlessly the leading composer and promoter of 'ultra-modernism' in the United States.[157] Cowell taught Cage at various points over a three-year interval, at an essential stage of his development. The student-teacher relationship may have lasted from 1934 until May 1936, when Cowell was confronted with sex offence charges involving a seventeen-year-old male. The facts of this incident are still unclear today.[158] Initially Cowell received the maximum prison sentence of fifteen years, but this sentence was reduced to ten years for good conduct. He was released on parole after four years and received a full pardon in December 1942, mainly in order to be permitted to work for a cultural defense project of the U.S. government.

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[156] Cage, "A Composer's Confessions", p. 30.

[157] In the 1920s and 1930s Cowell generally was regarded as 'ultra-modernist'; in the following pages we keep this historical terminology without using single quotes.

[158] Note, however, that Hicks provided an authoritative study of the documents and contemporary witnesses. Michael Hicks, "The Imprisonment of Henry Cowell," *Journal of the American Musicological Society* 44, 1 (Spring 1991): 92–119. It is likely that Cowell had sexual relationships with consenting adolescents at that point in his life, but a number of key documents are still withheld. According to Slonimsky, Cowell was not in California at the time and the charges were trumped-up. See the chapter "Jailed Friend" in Nicolas Slonimsky, *Perfect Pitch: A Life Story* (New York: Oxford University Press, 1988), pp. 161–67. It is a complex task to disentangle truth from fiction here; Hicks came perhaps closest to that goal. He suggests that Cowell had slid into this problematic type of relationships after his German girlfriend was unable to leave Hitler's Germany. He was uncomfortable about having sex with adolescents but, unable to stop himself, he was not unhappy to escape from this conflictive situation through the intervention of public authorities. In addition, new information became available through the opening of the Cowell Collection in 2000, contributing yet another layer to the saga of Cowell's arrest. George Boziwick, "Henry Cowell at the New York Public Library," *Notes* 57 (September 2000), p. 57.

Cowell's imprisonment probably changed the course of American music history.[159] His life was changed beyond recognition, as he struggled for survival and 'rehabilitation' in the intensely homophobic climate during the Cold War period. His international outlook was forced into a more patriotic and nationalist mould. Social repression obscured Cowell's early history and, therefore, our view of new music's development in America. The history of Cowell before 1936 was written without his many links to the European avant-garde, stressing the myth of the detached American experimenter. Hicks noted that "despite the attention of many scholars, the facts of that life [Cowell's] remain largely hidden." Indeed, his recent monograph heralds the beginning of more accurate an assessment of this pivotal composer; Hicks presented new biographical facts, many of them obtained after the Cowell Collection opened its doors to all researchers in June 2000.[160] The distortion of Cowell's historic connection with European culture and the avant-garde has resulted in what David Nicholls critically described as the "commonly held view ... that the American experimental movement developed accidentally, in isolation, and in a naive and undisciplined way."[161] Such a view, particularly in the case of Cowell, can only be maintained by overlooking massive evidence to the contrary.

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[159] Nicholls notes that—apart from three ISAM monographs on Cowell—*The Whole World of Music* is "the first critical volume dealing exclusively with Cowell and his work." David Nicholls, *The Whole World of Music: A Henry Cowell Symposiu*m (Australia: Harwood Academic Publishers, 1997), p. 10. The three monographs are Bruce Saylor, *The Writings of Henry Cowell: A Descriptive Bibliograph*y (Brooklyn: Institute for Studies in American Music, 1977), Martha L Manion, *Writings About Henry Cowell An Annotated Bibliograph*y (Brooklyn, N.Y.: Institute for Studies in American Music, 1982), and William Lichtenwanger, *The Music of Henry Cowell: A Descriptive Catalo*g (Brooklyn, N.Y.: Institute for Studies in American Music, 1986).

[160] Michael Hicks, *Henry Cowell, Bohemia*n (Urbana: University of Illinois Press, 2002); the history of the Cowell Collection is described in: George Boziwick, "Henry Cowell at the New York Public Library," *Note*s 57 (September 2000): 46–58.

[161] David Nicholls, *American Experimental Music, 1890-194*0 (New York: Cambridge University Press, 1990), p. 218.

The incarceration of his teacher altered the way Cage related to Cowell in a complex way, since it also involved many personal decisions Cage would take in his own life. Cowell's importance for Cage can hardly be overstated but—notwithstanding certain often quoted exceptions cited below—Cage offered only scarce details about his learning period with Cowell during the 1930s, and therewith lent support to the above-mentioned myth of the 'isolated and naive' development of American new music. Cage's earliest extensive autobiographical source, the Vassar lecture of 1948, contains barely any mention of Cowell and, in 1949, when Cage was first introduced to European composers, Cowell appeared merely as a featureless name in a list of composers related to Cage.

The 'Cowell omission phenomenon' created a clear imbalance in Cage scholarship. Schoenberg's influence on Cage—as an image of European tradition that needed to be overcome or as an idol of compositional discipline—was magnified, and a number of Cage's early composition techniques—in fact first introduced by Cowell—frequently are ascribed to Cage. An example of 'campfire romanticism' in Cowell scholarship will be provided below; many more can be found, probably also mirroring a widely felt American need or desire to create a national cultural identity by severing historic connections with Europe.

Cage's silence about Cowell in the 1940s and 1950s also explains why Europeans remained unaware of this composer and his theories, in many aspects presaging European developments of the 1940s and 1950s. The reasons for Cage's silence may include his

survival needs in the homophobic climate of McCarthyism and the Cold War, as well as his creative use of this hostile situation.[162]

The inclusion of Cowell's history within the narrative of Cage's history reflects the need to bridge Cage's silence and more firmly establish his (as well as America's) historic connections with the experimental European art movements of the 1920s and 1930s. Such a connection might permit the re-establishment of Cowell's seminal role as chief promoter of these new movements in the United States before 1936.

Cowell was born into a Bohemian family in a Bohemian world. His father Henry Clayton Blackwood Cowell (b. 1866, County Carlow, Ireland), known as Harry, arrived in the United States around 1890 and soon joined the Irish colony in San Francisco.[163] His mother Clarissa Dixon (1851–1916) came from Hennepin, Illinois. She was a political activist at age sixteen (writing in defense of a miners' strike), worked as a schoolteacher, married lawyer George Davidson when she was twenty, and gave birth to a son in 1872. She divorced in the 1890s and left Iowa to head for San Francisco. Around 1893 Harry and Clarissa married and, three years later, aged 45, Clarissa discovered that she was pregnant. Both parents of Cowell—an unconventional couple, even by the standards of Bay area Bohemians—were writers, poets; they had renounced any type of orthodox religion and were of a libertarian mindset.[164] San Francisco poet

[162] Jonathan D. Katz, "John Cage's Queer Silence; or, How to Avoid Making Matters Worse," in *Writings through John Cage's Music, Poetry, and Ar*t, ed. by David W Bernstein and Christopher Hatch (Chicago: The University of Chicago Press, 2001), pp. 41–61.

[163] Unless otherwise noted, I take my background information on Cowell's parents from "Easily Explained by Heredity" in Hicks, *Henry Cowell*, pp. 9–30. Note that Hicks, for the first time, provides an authoritative biography on Cowell, incomparable to previous studies. On 20 June 2000 the Henry Cowell Collection at the New York Public Library, which previously had been restricted to scholars handpicked by Cowell's widow Sidney, opened to all researchers. Boziwick, "Henry Cowell", p. 46. Hicks had been engaged in Cowell research for several years when the Cowell Collection became accessible; hence he was able to find quickly his way in this vast collection of primary resources.

[164] Clarissa Dixon, "A Fatal Doubt," *Overland Monthl*y 22 (November 1893). For citations to works by Henry Clayton Blackwood (Harry) Cowell, see Hicks, *Henry Cowell*, p. 12.

laureate George Sterling defined two conditions for Bohemianism: "The first is devotion or addiction to one or more of the Seven Arts; the other is poverty."[165] This was the essential condition under which Cowell grew up and his parents wished for him that

> he should be free, independent, progressive, literate, versatile, devoted to nature in both its scientific and poetic aspects, versed in religious tradition but skeptical, and perhaps above all, devoted to art.[166]

From the start of his life, Clarissa taught Henry through modern methods, based on her understanding of science and ethics. At an early age he hummed Irish melodies and began studying violin in 1902, based on exercises by Spohr. His violin teacher did not like modernists—such as Schubert and Schumann—and taught him Haydn, Mozart, and early Beethoven for about three years. Henry also experienced the sounds and scales of Asian music, since the Cowell's lived at the border to Chinatown. The Cowells' marriage came under strain when Clarissa, in her visionary feminism, proclaimed the end of sexual intercourse since science now allowed the hygienic implantation of male seed. After his parents' divorce in 1903, Henry's education became the exclusive domain of Clarissa. When Henry was hazed at his public school, Clarissa decided she would provide home schooling, embarking on a strict schedule: ancient history, astronomy, classical literature, geology, and botany. After the end of his violin lessons around 1905, Henry learned music through daily mental exercises in which he imaged music in his head for one hour in the afternoon.

Living through the terrifying San Francisco earthquake of 1906, mother and son decided to leave the West Coast. They spent time in Iowa, Kansas, and two years in New

[165] Sterling, as quoted in Franklin Dickerson Walker, *The Seacoast of Bohemi*a (Santa Barbara: Peregrine Smith, 1973), p. 10.
[166]Hicks, *Henry Cowell*, p. 16.

York, where Clarissa hoped to make a breakthrough as a writer. She published one novel, but ultimately was unable to earn the money required to support Henry and herself.[167] By 1910 they had returned to San Francisco, once again living in Bohemian poverty. Clarissa had cancer and thirteen-year old Henry, out of necessity, became the breadwinner for the family.

In the fall of that year Stanford professor Lewis Terman, a designer of intelligence measures, discovered the uncommon talents of his neighbor, and hired Henry to be one of forty-one child subjects in his research on 'superior children'. His completed study contains a valuable snapshot of the child prodigy:

> We have a list of over 300 books which Henry had read before he was 14 years of age, also bulky notes of extensive conversations which we had with him on such questions as socialism, atheism, scientific problems, etc. At 14 he discussed these matters with greater breadth of knowledge and much deeper understanding than the average university senior.[168]

By 1912 Henry had succeeded in acquiring a second-hand piano, began writing music, and soon delivered astonishing results. Terman understood the precarious financial situation of the small family and, in 1914, assisted by English professor Samuel Seward and adventurer Jaime de Angulo, set up a fund to pay for both Dixon's medical expenses and to provide Henry with a secondary education.[169] The young musical genius 'Cowell' was born; composer and music philosopher, in later years musicologist Charles Seeger would become his first and most important composition teacher. The progressive, leftist Seeger—chairman of the Berkeley Music Department from 1912 to 1919—had

[167] Clarissa Belknap Dixon, *Janet and Her Dear Phebe* (New York: F.A. Stokes Company, 1909). The publisher advertised the book as "a revelation of love between children". Hicks gives a brief synopsis. Hicks, *Henry Cowell*, pp. 26–27.

[168] Lewis Madison Terman, *The Intelligence of School Children* (Boston: Houghton, Mifflin & Company, 1919), p. 260.

[169] Sidney Cowell, writing in Peter Garland, ed., *Jaime de Angulo: Music of the Indians of Northern California* (Santa Fe, NM: Soundings Press, 1988), p. 7.

familiarized himself for more than two years with Europe and its music, after graduating from Harvard *magna cum laude* in music.[170] Between 1908 and 1911 he worked as apprentice conductor at the Cologne opera, composed, and occasionally traveled to Berlin or Paris.

In their first meeting in the fall of 1914, Seeger showed Cowell his own music, as well as Skryabin's Five Preludes (1914), several works by Stravinsky, and Schoenberg's Three Piano Pieces (1909). Seeger was duly impressed with the seventeen-year old, who had written about 100 works by the time. He designed a two-pronged course: harmony and counterpoint with other music faculty at the university, and private sessions in "free composition" with himself.[171] From the fall of 1914 to February 1918 Seeger and Cowell met weekly to discuss any matters connected with contemporary music. He encouraged the young composer to develop new theoretical approaches and test them in his compositions. Seeger himself developed a subversive counterpoint method, turning the traditional relation of consonance-dissonance on its head, and called it 'dissonant counterpoint'.[172] In addition, Seeger and his colleague Edward Griffith Stricklen co-authored a first-year harmony method, from which Cowell studied harmony. The two premises of the course were:

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[170] Prior to his departure, Seeger favored the music of Debussy, Mahler, Scryabin, and Satie. See Hicks, *Henry Cowell*, p. 64.

[171] Charles Seeger, "Henry Cowell," *Magazine of Art* 33 (May 1940), p. 288.

[172] Charles Seeger, "Dissonant Counterpoint," *Modern Music* 7 (June 1930). The article "was based on an interlinked series of compositional principles which Seeger had been developing since about 1914 or 1915, initially in connection with his teaching of Henry Cowell." Charles Seeger, *Reminiscences of an American musicologist: Charles Seeger: Oral History Collection, Dept. Of Special Collections, University Library, University of California, Los Angeles* (Los Angeles: Oral History Program, University of California, Los Angeles, 1972), quoted from Nicholls, *American Experimental Music*, p. 90. Seeger claimed that Cowell "swiped many of his best (and some of his worst) 'ideas' from me, and occasionally acknowledges it." Cowell never mentions his mentor in *New Musical Resources*.

> Music should have "one fundamental scheme" from which rhythm, tone, and form derive. Second, "a science of harmony may be based upon certain physical laws deduced from phenomena observed in the production of the tone"—in other words the overtone series.[173]

These two principles—a unified system for all parameters and the foundation of harmony in the overtone structure—are also found in Cowell's *New Musical Resources*, the most foresighted music theory work of the twentieth century. Cowell's work on this book, which I will discuss in more detail below, was begun around 1916, finished in a draft version in 1919, revised in 1929 and finally published in 1930.[174]

By the spring of 1914 Cowell had had his first public appearances as a musical genius, performing his compositions for San Francisco's music lovers. In most of his teenage compositions, Cowell "systematically echoed the music of the past" by imitating European composers.[175] A prime example for this strategy is the suite *Resumé* of 1914, in which each movement parades a different historical style: Primitivist, Bach, Classical, Folk, early and late Romantic, Strauss and Wagner Operatic, Oriental and, finally, Modern. The modern movement is subdivided into three parts, and includes features from Debussy and Schoenberg, a rag, and finally, a last part called "futurist, in form of a coda-cadenza."[176] Cowell's familiarity with these modernist trends is not only explained by his connection with Seeger, but also by his life in Bohemian circles, both in San Francisco and in Greenwich Village (in the period 1908–10), as well as his ongoing study of music and music history since his early violin studies, when he learned the Classical repertory of Haydn, Mozart, and Beethoven. His mother faithfully recorded his

[173] Hicks, *Henry Cowell*, p. 69, quoting from first four pages of introduction in Charles Seeger and Edward Griffith Stricklen, *Harmonic Structure and Elementary Composition: An Outline of a Course in Practical Musical Invention* (Berkeley: s.n., 1916)
[174] Henry Cowell, *New Musical Resources* (New York: Knopf, 1930).
[175] Hicks, *Henry Cowell*, p. 62.
[176] Ibid., p. 64. The "Futurist" part from the last movement of the suite Resumé is reproduced on p. 65.

development from his toddler's age, including which words he learned, which letters he recognized (two-years old), which melodies he hummed or invented, and which books he read. From the outset she had been convinced that her son was a genius, and she became his first biographer.[177] According to Clarissa, every influence was a 'bad' influence; freedom to choose his own pace and path of learning, and a guaranteed respect of his rights as a person had been assured from his days as a toddler. In 1914, however, Cowell had only a literary idea of musical futurism.[178] Throughout his teenage years Cowell kept writing works in imitation of classical masters; the 1914 "Futurist" piece was named after its use of augmented and quart-tritone chords.

The philantropic fund that enabled Cowell to study at Stanford University also sponsored his concert activities and, as early as 1914, just prior to the outbreak of the First World War, plans were made to send him for studies abroad. Berlin, at that time the undisputed capital of music in the world, was considered to be the best choice for a musical genius of Cowell's make-up. Clarissa died of cancer in 1916 and Cowell's sponsors, as a consequence of the raging First World War, had to reschedule these plans to the second best option: the Institute for Musical Art in New York. Cowell stayed there only a few months. When his teacher, composer and conductor Frank Damrosch, failed to detect that he had been handed in a Bach chorale instead of a student harmonization exercise, Cowell was outraged and quit.[179]

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[177] This material has been available since June 2000. See Clarissa Dixon, "Material for Biography," typescript of holograph in *Cowell Collection,* 3, unpublished, 1916).

[178] The movement was born in 1909: Filippo Tommaso Marinetti, "Le futurisme," *Le Figar*o (20 February 1909). Musical futurism was born on 11 March 1913 in form of painter Luigi Russolo's letter to Balilla Pratella, 'grand musicien futuriste.'

[179] Anthony Tommasini, "Modern Times Catch Up to a Past Maverick," *New York Time*s (9 March 1997).

Michael Hicks traced the beginnings of Cowell's ultra-modernism back to his New York encounter in late 1916 with Leo Ornstein's music. Ornstein, the talk of the day, was notorious as a 'futurist' composer. His music deeply moved Cowell and, in November 1916, he wrote his first ultra-modern cluster piece, *Dynamic Motion*. A year later, in November 1917, a number of similar works were composed.[180] In the 1920s such pieces constituted the backbone of Cowell's fame as a concert pianist and composer. During his brief study period in New York, Cowell also became fascinated by Wagner's *Tristan and Isolde* ("I never enjoyed music as I did last night..."), the music of piano virtuoso Paderewski,[181] and Stravinsky's *Petroushka* ("unmentionably lovely... so strange, yet lyric").[182]

One last important influence to complete the picture of Cowell's formative period needs to be discussed. In 1913 Cowell met Theosophist and socialist John Osborne Varian, who wrote poetry, plays, and invented music instruments. Like Cowell's father Harry, Varian came from Ireland and the frequent Irish and Celtic themes characterizing many of Cowell's teenage works have been traced to Cowell's friendship with Varian. His new instrument designs included a 'drum piano', a 'gong piano', and his masterpiece —patented but never built—a large harp, to be used in his mystery play *The Harp of Life*.[183] In 1914 this charismatic jack-of-all-trades neighbor moved to a small

[180] Subsequently Cowell pushed back the composition date, predating his ultra-modern works to around 1914. See Cowell's own listing of his compositions, "Compository Dates", Cowell Collection, NYPL. Hicks compiled a comparison table of the different dates given by Cowell throughout his life. See Hicks, *Henry Cowell*, p. 80. Also see Joscelyn Godwin, "The Music of Henry Cowell" (Ph.D. diss., Cornell University, 1969), pp. 403–23.

[181] Ignacy Jan Paderewski (1860–1941): Polish pianist, composer, and statesman.

[182] Cowell's reactions to the concerts are from two letters to Ellen Velben, 27 October and 18 November 1916, Cowell Collection, NYPL, quoted from Hicks, *Henry Cowell*, p. 75.

[183] For more details, see the overview of Cowell's entire output—his works number around 1,000—in Steven Johnson, "'Worlds of Ideas': The Music of Henry Cowell," in *The Whole World of Music*, ed. David Nicholls (Australia: Harwood Academic Publishers, 1997), pp. 15–91, for the Varian pieces esp. pp. 17–29, and for the new instrument designs esp. pp. 21–22.

Theosophical colony in Halcyon, where Cowell subsequently became a frequent guest and wrote music for plays written by Varian.

John Varian's sons Sigurd and Russell were about the same age as Cowell. Russell, in particular, followed in his father's footsteps and aimed to invent new musical relationships and electronic instruments.[184] Both Cowell and Russell Varian were interested in acoustics and electronics, and corresponded about their new musical ideas during Cowell's 1916 study period in New York. Most strikingly, in this correspondence, it was Russell Varian who suggested treating pitch and rhythm in a parallel way:

> My Idea is to introduce the same ratios between a group of rhythms as would exist between the notes of a chord, and changing as the chords do in a piece of music, only necessarily much slower. Perhaps a fixed ratio of rhythms moving regularly at different speeds through the movement.[185]

The letter exchange between Russell Varian and Cowell documents the earliest origins of the systematic treatment of pitch and rhythm, foreshadowing post-war serialism in Europe.[186] The idea had been hinted at in the most general manner in Seeger's and Stricklen's harmony method, but here, for the first time, it had crystallized into the exact form later to be found in *New Musical Resources*, on which Cowell had started to work earlier in 1916. This formative period is almost twenty years before Cowell met Cage. Unlike the latter, Cowell grew up in a Bohemian world, poor but immersed in a

[184] Russell Varian (1898–1959) and his brother Sigurd invented the klystron tube (1937), a high-frequency amplifier for generating microwaves. It revolutionized high-energy physics and microwave research and led to the airborne radar used in aircraft today.

[185] Russel Varian, letter to Henry Cowell, December 1916. *Varian Papers*. Stanford University. Quoted from Johnson, "Worlds of Ideas", p. 27. In the preceding letter Cowell had asked Russel Varian what he had meant by 'light rhythms above, and compound rhythms below'. Cowell suggested that they were having their ideas about new pitch and rhythm organization independently and at the same time.

[186] As a distant forerunner of a composer-theorist who directly relates numerical proportions of pitch to those of rhythm, we may cite Franchinus Gaffurius (1451–1522), who in his *Practica Musica* (1496), book 4, chapters 1, 14 and 15 points out that the same proportions governing consonant intervals are found in rhythmic relations, and gives examples in two-voiced counterpoint illustrating these relations.

cosmopolitan mix of mainly European cultures. Aside from his study of the Classical German masters from his earliest age and his subsequent study of music history and music under the tutelage of his mother, he was also close to Irish and Chinese folk music influences. Much credit for his development is due to his mother, a poet and person truly far ahead of her times. We will now conclude with a succinct review of Cowell's seminal ultra-modernist career of almost twenty years.

His international career as a concert pianist and composer began in the 1920s. He undertook no less than five European tours—in 1923, 1926, 1929, 1931 and 1932—and made contact with many European modernists. Bartók was impressed with his innovations and, in 1923, asked Cowell's permission to use his tone-cluster technique. Schoenberg invited Cowell to present his works to his Berlin composition class in 1932. Webern conducted a movement of Cowell's *Sinfonietta*. In Paris he was greeted with ovations, and the Russians did not know how to deal with him, variously forbidding or encouraging his music to be performed.[187] Russian music students, Cowell explained, demanded encores not for works they understood but, on the contrary, for those they could least understand, an attitude that he found particularly striking and would have loved to implant in American audiences.[188]

Cowell's life-long relation to the theories and works of Schoenberg was intense. He knew about Schoenberg's Three Piano Pieces, op. 11, since his first meeting with Seeger in the fall of 1914. Combining Cowell's voracious hunger for books with his passion for music, it is hard to imagine how he could not have learned all about modern music even prior to his meetings with Seeger. Critics often drew comparisons between Cowell's and

[187] Many excerpts from concert reviews are reproduced in Manion, *Writings About Henry Cowell*.
[188] Henry Cowell, "Playing Concerts in Moscow," *Musical Courie*r 102, 21 (1931), p. 30.

Schoenberg's music; reviews of his *New Musical Resources* characterized Cowell as a "disciple of Schoenberg."[189] Asked in 1933 to name the world's greatest living composer by the *Northwest Musical Herald*,[190] Cowell chose Schoenberg and, in 1949, when Cowell reviewed the history of Schoenberg's Five Piece for Orchestra, op. 16, he repeated that "[n]o living composer is surer of his place in history than Arnold Schoenberg."[191]

In 1931 Cowell secured a Guggenheim grant to study ethnomusicology at the Berlin Hochschule für Music in Germany.[192] There he became acquainted with the largest existing collection of world music and thus, when he returned to the United States, had acquired the know-how to set up his course, 'Music of the Peoples of the World'. As a consequence of these studies of world music in Germany, Cowell and Seeger gave the first American seminars in comparative musicology at the New School for Social Research in the early 1930s. Surprisingly perhaps, Cowell also learned to play the *gamelan* in Germany—again at the Hochschule für Musik in Berlin.

His modernist aesthetic brought him in contact with pianist and composer Imre Weisshaus (later known as Paul Arma), who had already been in California in the 1929–30 season to give lectures on contemporary music and perform his music. In 1931 he

[189] "...il suffit de lire le livre de M. Cowell pour s'aperçevoir qu'il ne laissait rien au hasard. Disciple de Schoenberg, il a longuement médité sur les rapports de l'harmonie et de l'acoustique." Henry Prunières, "Henry Cowell: New Musical Resources," *Revue musical*e 11, 107 (August 1930), p. 184. ("...it suffices to read the book of Mr. Cowell to understand that he leave nothing to chance. Disciple of Schoenberg, he has long meditated about the relationship between harmony and acoustics.")

[190] Bruce Saylor, *The Writings of Henry Cowell: A Descriptive Bibliography* (Brooklyn: Institute for Studies in American Music, 1977), item 62.

[191] Henry Cowell, "Current Chronicle: New York," *Musical Quarterl*y 35, 1 (1949), p. 106.

[192] Note that one of his sponsors, jack-of-all-trades Jaime de Angulo, had done ethnomusicological field work on the music of the Indians of Northern California in 1925. See Peter Garland, ed., *Jaime de Angulo: Music of the Indians of Northern Californi*a (Santa Fe, NM: Soundings Press, 1988). His major teacher in music, Charles Seeger, is today primarily regarded as an ethnomusicologist (although he was a composer, critic, and theorist in the 1910s and 1920s). So it was not ethnomusicological work itself that was new to Cowell, but the scope of world musics that he encountered in the Hornbostel Collection in Berlin.

was the musical director of the Bauhaus and, in December of that year, Cowell presented a concert program entitled 'Contemporary Music and Its Development Potentials' at the Dessau Bauhaus.[193]

Countless further contacts and events could be cited to elaborate on Cowell's involvement with contemporary music in Europe. He was at the forefront of developments, not only in America, but also and especially in Europe. His tone cluster techniques and playing inside of the piano were genuine contributions, and his ideas about new music—documented in his book *New Musical Resources*—were in the vanguard of contemporary musical thought. Many articles on Cowell and his music were published throughout Europe but, when Nazism rose to power in 1933, such modernist tendencies would be violently repressed as 'degenerate'. Although the general public was mostly scandalized and shocked by his 'elbow' music and savage tone cluster timbre paintings, Cowell had been accepted as partner and colleague by the leading European modernists of the 1920s.[194] By the early 1930s his knowledge of aesthetic trends in Europe was daunting and, in addition, he had acquired rare knowledge of world music through the study of the unique Hornbostel Collection in Berlin.

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Cowell became aware that, while there were many interesting modern composers in America, the country had no infrastructure for new music. There were no concert

[193] Margret Kentgens-Craig, *The Bauhaus and America: First Contacts, 1919–1936* (Cambridge, Mass.: MIT Press, 1999), p. 84 and, for his education as an ethnomusicologist, Lou Harrison, "Learning from Henry," in *The Whole World of Music*, ed. David Nicholls (Australia: Harwood Academic Publishers, 1997), p. 166.

[194] The private tennis matches between Schoenberg and Cowell during the latter's Berlin residence in 1930–31 provide a particularly striking example of Cowell's close personal relationships with leading figures of European modernism.

venues, audiences, not enough specialized journals or score publishers. From the mid-1920s he made it his business to bring about change. He became the leading advocate of new music in the United States. In 1925 he founded the New Music Society, which organized concerts of new music in Los Angeles and San Francisco, but in fact had a much broader background.[195] The mission statement of the New Music Society illustrates that Cowell's concerns were with new music and its international dissemination:

> Each year THE NEW MUSIC SOCIETY sends a selection of compositions by Americans to the following organizations, with a view of possible production, and receives from them in turn the latest works by composers in their respective countries: the Society for Contemporary Music, of London; The *Societé Independente* of Paris; The *November Gruppe* of Berlin; The Polish Artistic Club, of Warsaw; The Modern Composer's Guild, of Prague; The Moravian Composer's Society of Brun; *Uj Fold* of Budapest. This interchange insures more productions and better understanding of modern America music abroad, and insures a contact with the latest European developments. A very important function of THE NEW MUSIC SOCIETY is that it will publish works by modern composers, in the form of a quarterly periodical called NEW MUSIC, beginning October 1, 1927.[196]

The stated purpose of the society—to insure 'contact with the latest European developments'—shows that Cowell did not wish to create or think of modern American art as isolated. The European 'developments' that he referred to were of course not those associated with European culture and tradition by most of his contemporaries in the United States, i.e. the museum of Classical and Romantic music from Mozart to Paganini and Rachmaninov. In addition, Cowell did not equate America with the United States; he published twenty-odd scores by more than a dozen Latin American composers in his *New Music* quarterly, starting with vol. 1, no. 4 in 1928. On the other hand, Cowell's ideas of

[195] The history of this society and its various enterprises is given by Rita H. Mead, *Henry Cowell's New Music, 1925-1936: the Society, the Music Editions, and the Recording*s (Ann Arbor, Mich.: UMI Editions, 1981).
[196] Ibid., p. 56.

'modern' American art are on record in his articles from the 1920s and 1930s: he opposed neo-classicism and a number of 'European-minded' American composers, most of them on the East coast, would have fallen into that pro-establishment, reactionary category. In other words, his concerns were neither nationalistic nor with the museum of 'classical' music, but with the real avant-garde.

He also realized that American publishers were interested solely in making profit and, for that reason, modern composers were unattractive to them. Their music 'did not sell'. More idealism was sorely needed here, so Cowell founded the quarterly 'score-journal' *New Music*, which began publishing in 1927.[197] It contained new music scores from contemporary, innovative American and, occasionally, foreign composers. This journal was supplemented by an Orchestra Series in 1932. A year later he added New Music Workshops and, in 1934, New Music Quarterly Recordings. (The first season of New Music Workshops included Cage's awkward piano solo rendition of his Sonata for Clarinet (1933): the clarinetist had been unable to sight-read Cage's score.) Anonymously, Ives was the main contributor of funds to finance all these activities, and his support grew increasingly important after the Wall Street crash of 1929.[198]

The above-mentioned new music organizations are located in *seven* European countries, doubly reflecting Cowell's role as promoter of new European music in America and as promoter of new American music abroad. The same spirit of democracy, communication, and idealism could be found in the contributors of the German Bauhaus.

[197] See mission statement of the New Music Society on page 121. It cost Cowell $1,282.50 of his own money to start the publication, not charging anything for his time or provision of office space. See Mead, *Henry Cowell's New Music*, p. 61.

[198] "Financial support of the editions and the recordings, however, came largely from one source—the American composer Charles Ives, who, for years, contributed regularly to New Music." Ibid., p. xvi. Mead discusses the concert seasons of Cowell's New Music Society, the workshops, and various other activities in detail in her book.

It is no accident, therefore, that Weisshaus also sat on the general advisory board of the Cowell's New Music Society.[199] The links between the internationalist modernist movements rested largely on the idealism of a few dedicated individuals, nearly exclusively with a liberal and left-wing political mindset. Cowell was well aware of the surge of right-wing politics in Germany, culminating in Hitler's rise to power in early 1933. Soon he would welcome his friend Schoenberg in California who, at that time, had to flee his own country and vacate one of the best teaching positions in composition worldwide. He knew of the plight of many of his friends in the Bauhaus, having a fate similar to Schoenberg. It is not surprising that Cowell suspended his European concert activities after 1932.

Many artists in the 1920s and 1930s had a refined view of technology: they welcomed its use for new applications, but rejected its abuse for reasons of personal greed, commerce, or human exploitation. Such materialistic motivations had marked the use of technology during the early phase of capitalism in the nineteenth century, leading to grave suffering of the working class. A conscious, ethical use of technology, on the other hand, was a prime goal of the German Bauhaus. This goal is also reflected *New Musical Resources*, published a year before Cowell was on his last, prolonged stay in Europe in 1931–32. The seminal book documents Cowell's thinking at the time when he presented his music and theories to Schoenberg's composition students at the Berlin Conservatory. Cowell and Schoenberg laid parallels between their theories and Einstein's relativity theory. Schoenberg was less direct than Cowell, who spoke of his

[199] The members of the general advisory board were: Béla Bartók, Arthur Bliss, Alfredo Casella, Ruth Crawford, Eugene Goossens, Alois Hába, Pal Dadosa, Zoltán Kodály, Francesco Malipiero, Georges Migot, Leo Ornstein, Carl Ruggles, Carlos Salzedo, E. Robert Schmitz, István Szelényi, Edgar Varèse, Imre Weishaus [later: Paul Amra].

"theory of musical relativity" in 1929.[200] *New Musical Resources* was remaindered in 1935 and out-of-print for the next 61 years, not counting a brief reissue by the Something Else Press in 1969.[201]

Musicologist Kyle Gann locates Cowell's historic achievement primarily in his theories:

> As a musical thinker ... and theorist of new musical possibilities, he is a giant in a virtual desert, towering above all his contemporaries with the possible exception of Schoenberg (and at present, Cowell's speculations look to be more prophetic and enduring than Schoenberg's, whose influence is no longer in the ascendant).[202]

Furthermore, Gann notes that, even with *New Musical Resources* out-of-print for most of the twentieth century, its "influence, especially via such composers as John Cage and

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[200] Cowell, *New Musical Resources*, p. xiv. In his 1929 preface Cowell states that the 1919 version of his book contained 'most of the applications given here of the theory of musical relativity.' Schoenberg draws the parallel more indirectly, citing it as the source of his loneliness: "This was the time when everybody made believe they understood Einstein's theories and Schoenberg's music." in Arnold Schoenberg, "How One Becomes Lonely," in *Style and Idea* (London: Faber, 1984), pp. 51–52.

[201] Somewhat later than Cowell, the Russian emigrant Joseph Schillinger (1895–1943) developed an even more extensive new theory of music than Cowell. Schillinger applied many scientific principles to music theory and thus foreshadowed many aspects of post-war serialism. Einstein's relativity theory influenced Schillinger's music theories "through its underlying ideas." Joseph Schillinger, *The Schillinger System of Musical Composition*, 2 vols. (New York: Fischer, 1946), p. xviii; see also id., *The Mathematical Basis of the Arts* (New York: Philosophical Library, 1948). To my knowledge, the extent to which Cowell's *New Musical Resources* influenced Schillinger has not been investigated. In 1928 he emigrated from Russia to the United States. Dowling and Shaw, the editors of his posthumous publications, claim that he developed the foundations of his theories by 1932. Schillinger, *Schillinger System*, p. xii. Schillinger collaborated with Leon Termen and, in the early 1930s, employed Cowell's electronic instrument design *Rhythmicon* for musical experimentation with complex rhythms; in 1941, Cowell wrote the foreword for the *Schillinger System of Musical Composition* (first pub. as ten mimeographed lesson-booklets for correspondence lessons as *Schillinger Course of Musical Composition*, 1941). Earle Brown, one of many American composers influenced by *The Schillinger System*, stated that Cowell brought Schillinger to the United States to teach at the New School of Social Research in New York. Brown credits Schillinger with rhythmic ideas in his own late-1940s compositions that bear a striking resemblance to the *cellules* of Boulez and Messiaen. Earle Brown, interview with John Yaffe in New York, 25 September 1995, (<http:// www.logosfoundation. org/kursus/9631.html> accessed 23 October 2003).

[202] Kyle Gann, " Subversive Prophet: Henry Cowell as Theorist and Critic," in *The Whole World of Music*, ed. David Nicholls (Australia: Harwood Academic Publishers, 1997), p. 172. In this essay Gann surveys the entire written output of Cowell. An 18-page discussion of *New Musical Resources* opens the essay (pp. 172–90) and is followed by 'Early articles' prior to 1936 (pp. 190–95), the Cowell-edited volume 'American Composers on American Music' of 1936 (pp. 190–95), the unpublished 'The Nature of Melody' written in prison between 1936 and 1940 (pp. 202–9), 'Later articles' (pp. 209–14), and 'Charles Ives and His Music' of 1955 (pp. 214–19).

Conlon Nancarrow ...will ultimately prove incalculable." This analysis correctly points out the indirect influence of Cowell's theory through the composers who developed under his tutelage or influence in the years prior to 1936. Leaving the case of Nancarrow aside for the moment, as of this writing the formation of Cage by Cowell's theories already had a vast impact on other composers, and has the potential to have a greater effect in the long-term.

Gann does not, interestingly enough, pick up the silence of Cage in regard to Cowell's theories and, in addition, climaxes with a description of Cowell which, for being full of campfire romanticism, is no less unconvincing:

> What makes Cowell radical is also what makes him so typically American, the fact that he returns to acoustics rather than to tradition as the final arbiter of musical reasoning. Just as the early American settlers left the cities of Europe to carve out a home in the pristine wilderness, the early American composers—at least those attuned to their new home, and not overawed by imported culture—began to carve out a music from the raw material of sound. Ever since Cowell dozens of American" experimentalists," some because of his influence and many others independently, have developed their composing methods from reflections on the nature of sound itself, bypassing European methods and premises.

There is nothing so typically American about Cowell. If anything, he would be typically Bohemian, and even there one might doubt that he was typical. As one of the most vocal champions of ultra-modernism in America in the 1920s, Cowell had been brought up with Classical music of the European tradition—living in material but not in spiritual

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He convincingly demonstrates the book's influence on Nancarrow, but his suggestion that Stockhausen and Boulez profited from it is far-fetched, and his assertion that "[u]nder the influence of Messiaen, Pierre Boulez and Karlheinz Stockhausen began theorizing how to subject rhythm to the same controls as pitch" (p. 186) is wrong. We saw above that Boulez learned and adopted Messiaen's rhythmic system around 1944 and encountered Leibowitz and dodecaphony afterwards. His *Notations* (1944 or 1945, cf. p. 84 for discussion on dating this work) does not theorize; it implements a small catalog of strategies which subject rhythm and pitch to the same controls. Similarly, we will see below that Stockhausen began implementing parallel procedures for pitch and rhythm after being informed of a new composition system by Goeyvaerts in June 1951.

poverty—and, as early as the 1910s, he allied himself with the European avant-garde movements of the early twentieth century. How can one see the return to acoustics as an American characteristic? Legions of thinkers throughout history used notions derived from the 'nature' of sound to support their musical choices.

Even limiting Gann's claim to scientific acoustics, it would be difficult to 'bypass European methods and premises' if we are aware of the work of Helmholtz and his *On the Sensations of Tone as a Physiological Basis for the Theory of Music*, available in French and English and remaining unsurpassed well into the twentieth century.[203] Not only Americans were inspired by acoustics and science. We might cite Busoni, for example, and his visionary *Sketch for a New Esthetic of Music* of 1907. His proposal for an aesthetics of new music (or musics) became available in English as of 1911, just three years prior to the beginning of Cowell's work on his "theory of musical relativity". It is unreasonable to suppose that the musical philosopher and composer Seeger, who was in Germany between 1908 and 1911, would have remained unaware of Helmholtz, Busoni, and similar path-breaking contributions. Seeger embraced scientists and modernists and was aware of their work. He brought these ideas back to the Department of Music of the University of California at Berkeley and presented them to young Cowell in their weekly discussions. Busoni's hyper-charged manifesto was a perfect topic for them. How could Cowell, raised by his freedom-loving mother to become an artist, not have responded to wonderful phrases such as: "Music was born free; and to win freedom is its destiny"? He

[203] German first ed.: Hermann von Helmholtz, *Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musi*k (Braunschweig: Vieweg, 1863); French first ed.: *Théorie physiologique de la musique, fondé sur l'étude des sensations auditives*, trans. Georges Guroult and Auguste Desir Bernard Wolff (Paris: Masson et fils, 1868); English first ed.: *On the Sensations of Tone as a Physiological Basis for the Theory of Music*, trans. Alexander John Ellis (London: Longmans, Green, and Co., 1875).

must have glowed with enthusiasm upon hearing Busoni speak about a Dr. Thaddeus Cahill from America, who "constructed a comprehensive apparatus which makes it possible to transform an electric current into a fixed and mathematically exact number of vibrations," and thus allows an "infinite gradation of the octave," an idea that immediately strikes as related to tone clusters.[204] And Busoni is not a traditionalist when he imagines "an art-praxis wherein each case should be a new one, an exception" or when he challenges "Know nothing, but rather think and feel!" and even:

> Let us take thought, how music is to be restored to its primitive, natural essence; let us free it from architectonic, acoustic and esthetic dogmas; let it be pure invention and sentiment, in harmonies, in forms, in *tone-colors* (for invention and sentiment are not the prerogative of melody alone); let it follow the line of the rainbow and vie with clouds in breaking sunbeams; let Music be naught else than Nature mirrored by and reflected from the human breast; for it is in sound in air and floats above and beyond the air; within Man himself as universally and absolutely as in Creation entire; for it can gather and disperse without losing in intensity.[205]

This passage, overflowing with ideas and enthusiasm for a new music, was at least partly inspired by the well-known, gigantic electronic instrument of Cahill, mentioned one page earlier in Busoni's *Sketch for a New Aesthetic*. It is particularly noteworthy that Busoni's idea of "tone-color inventions and sentiments (i.e. perception)" preceded Schoenberg's call for a *Klangfarbenmelodie* by four years.[206] In a sense Busoni's aim to restore music to the "primitive, natural essence" as formulated above is more radical than Cowell's: he

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[204] Ferrucio Busoni, *Sketch of a New Aesthetic of Musi*c Schirmer, 1911), pp. 5, 33. For more information Busoni refers his readers to the article Ray Stannard Baker, "New Music for an Old World: Dr. Thaddeus Cahill's Dynamophone, An Extraordinary Electrical Invention for Producing Scientifically Perfect Music," *McClure's Magazin*e 27 (May 1906). Both Cowell and Russell Varian would have been fascinated by this article.

[205] Busoni, *Sketch*, p. 34. My emphasis. Busoni precedes Schoenberg by several years in calling for a musical structure based on a logic of timbre.

[206] See fn Fehler: Verweis nicht gefunden on page 359 for Schoenberg's formulation of timbre composition in his Harmonielehre of 1911. This work was not translated into English for a long time, but Seeger read German. Schoenberg's *Farben* movement from the Five Pieces for Orchestra, op. 16, followed only two years after Busoni's call for a music of "tone-colors".

wants to rid music of its acoustic dogmas while Cowell, introducing his theories in *New Musical Resources* in 1930, declares that his aim is

> to point out the influence the overtone series has exerted on music throughout history, how many musical materials of all ages are related to it, and how, by various means of *applying its principles in many different manners*, a large palette of musical materials can be assembled. Some of them are in use, some of the are presaged in contemporary music, and some of the seem to be unused so far.[207]

If it is true that Cowell proposed to see everything through the principle of the overtone series, then this indeed might be interpreted as an acoustic dogma. But his idea to place the overtone series in the center of a theory is not new in itself; what is new, however, is his mapping of this principle in "many different manners" to other musical dimensions to generate new structures. Automatically, the arithmetic ratios—and not the overtone structure—move into the center of the theory. In the body of his text, he suggests to map the pitch interval ratios 1:2:3:4:5 to rhythmic intervals with the same ratio, an idea that Russell Varian had as early as 1916, as we have seen above.[208] Indeed not the overtone series, but ratios occupy the center of Cowell's theory. In his theory, then, these ratios turned into the basic tools needed to explore the dimensions of music. For Cowell, as we will see now, these dimensions were by no means limited to the acoustical dimensions of sound (pitch, duration, intensity); rather, these were the more complex dimensions of the universe of music.

In a remarkable parallel with Stockhausen's time-based, integral music theory "...wie die Zeit vergeht...", Cowell posits a seamless time continuum between pitch and rhythm

[207] Cowell, *New Musical Resources*, p. 8.
[208] Ibid., pp. 47–48.

and, by implication, the existence of musical relativity more than twenty years prior to Stockhausen:

> There is a well-known acoustical instrument which produces a sound broken by silences. When the silences between the sound occur not too rapidly, the result is a rhythm. When the breaks between the sound are speeded, however, they produce a new pitch in themselves, which is regulated by the rapidity of the successive silence between the sounds.[209]

Twenty-six years later Stockhausen would describe the same phenomenon of musical relativity, albeit more focused on musical perception:

> Akustisch wahrnehmbare Phasen teilt die Empfindung in zwei Gruppen: wir sprechen von Dauern und Höhen. Das wird klar, wenn man eine Phasendauer—zum Beispiel zwischen Impulsen—kontinuierlich kürzer werden läßt: von 1 sec zu $^1/_2$ zu $^1/_4$ zu $^1/_8$ zu $^1/_{16}$ zu $^1/_{32}$ zu $^1/_{64}$ sec usw. Bis zu ca. $^1/_{16}$ Phasendauer können wir gerade noch die Impulse getrennt hören: solange sprechen wir von 'Dauer', wenn sie auch äußerst kurz wird. Ist die Phasendauer allmählich zu $^1/_{32}$ verkürzt, so sind die Impulse nicht mehr getrennt wahrnehmbar; man kann nicht länger von der 'Dauer' einer Phase sprechen. Vielmehr wird dieser Vorgang auf eine andere Weise wahrgenommen: man empfindet die Phasendauer als 'Höhe' des Schalls.[210]

Stockhausen introduces a more nuanced interpretation, to be sure, but, in essence, he and Cowell were struck by the same idea. Time intervals are perceived as pitch or rhythm; the perception changes *relative* to the speed of the phenomenon. Similar descriptions of

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[209] Ibid., pp. 51.

[210] Karlheinz Stockhausen, "...wie die Zeit vergeht...," (September 1956), quoted from *Texte* 1 (1963), pp. 99–100. Readers familiar with musical acoustics should replace the word "phase" with "period" in the following translation. From an acoustical standpoint Stockhausen erred when he used the term "phase", but this is quite immaterial to his argument. ("Sensation divides acoustically perceptible phases into two groups: we speak of *durations* and of *pitches.* This becomes clear if a phase duration—between pulses, for example—is made to become continuously shorter: from 1 second to $^1/_2$ to $^1/_4$ to $^1/_8$ to $^1/_{16}$ to $^1/_{32}$ to $^1/_{64}$ second and so on. Up to a phase duration of about $^1/_{16}$ second we can still just hear the pulses separately; to this point we speak of 'duration', even if it has become extremely 'short'. If the phase duration is gradually shortened to $^1/_{32}$ second, then the pulses are no longer separately perceptible; it is no longer possible to speak of the 'duration' of a phase. Rather, this process becomes perceptible in another way: the phase duration is perceived as the 'pitch' of the sound.") My translation. English translations of *Die Reihe* are poor and lead to misunderstandings. Morag Grant, whose book analyzes *Die Reihe*, stated that "[t]he translations in the English edition vary from the generally acceptable to downright appalling; ..." Morag Josephine Grant, *Serial Music, Serial Aesthetics: Compositional Theory in Post-War Europe* (New York: Cambridge University Press, 2001), p. 6. Note that a new English edition of *Texte I*, translated and edited by Jerome Kohl, is currently in the press (Kürten: Stockhausen-Verlag).

"musical relativity" probably could be found in the acoustical and technical literature but, as a music theorist, Cowell was clearly the first to make this observation. Stockhausen had studied phonetics at Bonn University with Meyer-Eppler and he learned about the phenomenon of musical relativity through observation in the electronic studio. But Cowell did not stop with the observation that time structures in some cases are perceived as pitch and in other cases as rhythm. He suggested intensity measurements in decibels to create exact "intensity intervals", such as 8:9, and conjectured:

> By following such a system of related ratios, dynamic shadings might become formulated into a well-ordered scale system and become a more definite element of musical composition.[211]

Elaborate intensity scale systems on decibel basis were first used in Stockhausen's first electronic works of the early 1950s or, exceptionally, in instrumental works such as *Inori* (1973–74) for orchestra and one or two soloists, which contains several scales built from a set of sixty intensity degrees.[212] Cowell suggests that simple arithmetic ratios can be used not only at the rhythmic level, but also on the higher level of form, by grouping several measures together. Stockhausen realized this idea, in more sophisticated and elaborate form, in *Gruppen* (1955–57) for three orchestras.[213] While we have no indication that Stockhausen was aware of Cowell's work, Cage most certainly was.[214] He studied *New Musical Resources* in the early 1930s and, although he remained silent in

[211] Cowell, *New Musical Resources*, p. 83.

[212] Karlheinz Stockhausen, "Inori: Anbetungen für 1 oder 2 Solisten," (1974), quoted from *Texte* 4 (Köln: Dumont, 1978), p. 215–31. See p. 229–26 for Stockhausen's sketches of four different scales composed within the continuum of 60 scale degrees.

[213] Stockhausen discusses his implementation in Stockhausen, "...wie die Zeit vergeht...", pp. 116–20. Note furthermore that both Cowell and Stockhausen use overtone and undertone series in their theoretical discussion. Stockhausen, "...wie die Zeit vergeht...", p. 103; Cowell, *New Musical Resources*, p. 24.

[214] On the contrary, Stockhausen stated that he did not know Cowell's writings. "I have never read Henry Cowell's writings. My thoughts in '...wie die Zeit vergeht...' are results of my experiments in the field of electronic music." Stockhausen, letter to Glenn Watkins, 22 December 1986. In *Texte 10* (Kürten: Stockhausen-Verlag, 1998), p. 468.

this matter, one can hardly sustain doubts that Cowell was the major model of Cage's formative years.

Finally, *New Musical Resources* includes a discussion of timbre scales:

> A scale can be made by placing in the same group the tone-qualities in which overtones from the same portion of the series are most prominent; thus a quality in which the first overtone is most evident might be number one in the scale; a quality in which the second overtone is most plainly heard might be number two, etc. [...] A quality strongly possessing both the first and the second overtones ... might be classified as a 'harmonic' quality, as it is produced through a combination of sounds. The harmonic tone-qualities could be named by the chord names of the combination of overtones forming them.... If tone-qualities were arranged in order, and a notation found for them, it would be of assistance to composer and performer alike ... more and more music has been and is being written in which certain particular qualities are essential; ... [t]one-quality thus becomes one of the elements in the composition itself ... [p]rogress in the field of new or graduated tone-qualities in composition has been greatly hindered by lack of notation, ...[215]

What Cowell proposed here, decades before its technical feasibility, constitutes the basic idea for a synthetic timbre composition such as Stockhausen's *Gesang der Jünglinge* (1955–56), in which timbres are serialized according to a complex, rationally designed network of musical dimensions. The problematic definition of timbre composition as 'music...in which *certain particular qualities* are essential' is not an iota less problematic today. Cowell was aware of the multi-dimensional nature of timbre and its perception, as well as the vexing problem of timbre notation.

New Musical Resources closes with a discussion of tone clusters—in fact these are sonic timbre objects with an internal and exterior structure—in which Cowell paraded thick, thin, moving, fixed, inner-movement and inner-density tone clusters. He concluded that this new type of material could be elaborated in an infinite number of ways and hoped that many musicians, each to his or her own taste, would take part in

[215] Cowell, *New Musical Resources*, pp. 34–35.

developing more new materials. Yet, Cowell claimed, while materials were a matter of personal choice, form and formalization, such as his proposed theory, had their own important function:

> Musical emotions are never so spontaneous as when the forms through which they manifest themselves are so well known to the composer as to be subconscious and can be delicately adjusted to the particular situation. [...]

And he concluded:

> For the sake of the exquisiteness of emotion which music may express, as well as for the sake of perfection of music itself, therefore, there is a place for the formalization and co-ordination of different contemporary musical resources by means of their common relationship with the overtone series, which, although it forms a mathematical, acoustical, and historical gauge, is not merely a matter of arithmetic, theory, and pedantry, but is itself a living essence from which musicality springs.

Cowell's conclusion makes plain that, for him, the overtone series is not simply acoustic raw matter, but an organic generating principle, a seed, which is nothing if not invested with human musicality. His theory is inspired by the tradition of nineteenth century organicism; he replaced Schoenberg's "method of composition with twelve tones only related to each other" by what one might call "method of composition with rational principles related to all conceivable musical dimensions"—an idea worked out in more detail by Cage, Boulez, and Stockhausen in the future.

When Cowell revised *New Musical Resources* for publication in 1929, throughout the book

> he expunged many traces of those composers and theorists who had used his terms and ideas before he had: he removed his references and thanks to Charles Seeger; he deleted a reference to Schoenberg's prior mention of the idea of polyharmony; a citation to the acoustician Hermann Helmholtz disappeared; and he omitted all reference to Schoenberg and Ornstein in connection with tone clusters. On the other hand, he lengthened the book in various substantial ways, most notably by inserting new chapters on tone color, dynamics, and form, all

> based on the premise that every aspect of the music should derive from the overtone series.[216]

The reason for the removal of these references was a wish to portray his achievement in a stronger light. Several references to Schoenberg remain; the removed references relate to some invention of breakthrough idea, which Cowell felt, for some reason, should now be associated with his person. The 1930 reviews of *New Musical Resources* covered the gamut from strong rejection—"[t]his book makes the brain reel, but there is no need for anyone to read it."[217]—through a more balanced, delicate view

> Mr. Cowell [in his *New Musical Resources*] is entirely mathematical and technical in his approach, but he is at least 'modern' in that the psychological and human element is entirely neglected. His book is really an acoustical investigation rather than a consideration of new musical resources, and his discovered principles are mostly fantastic. [...] [He] gives no reason why these fine-spun mathematical notions should be imposed on modern musical theory, because there is none to give. The whole thing is entirely arbitrary and personal. But it must at least be admitted that he has worked out his schemas and patterns very thoroughly and ingeniously. This is not at all a book for the musical layman ... but for those who can understand, it makes interesting reading.[218]

and finally to a strong endorsement:

> All of Cowell's theories, discoveries, and deductions are based upon a firm musical, scientific and intellectual foundation. No one today is more eminently fitted to write such a book than he.[219]

At that time Cowell belonged among the so-called "ultra-radical modernists". In regard to Cowell's invention of electronic instruments, the input of people like Varian, Bauhaus artists like Fischinger, Moholy-Nagy, and Weisshaus, or experimenters, such as

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[216] Hicks, *Henry Cowell*, p. 131. Note that Gann, who had access to the different versions of this book, for inexplicable reasons did not give this important historical information and, at the same time, strongly suggested that Stockhausen and Boulez might have been using *New Musical Resources* as a template in developing their theories of extended serialism. Gann, "Subversive Prophet", pp. 171–222.

[217] A. H. Fox Strangways, "New Musical Resources," *Music & Letter*s 11, 3 (July 1930), p. 300.

[218] Jeffrey Mark, "An Acoustical Investigation," *New Republi*c 64, 826 (1 October 1930), p. 184.

[219] John J. Becker, chairman of Fine Arts College of St. Thomas reviewing *New Musical Resources*, publ. in James Gray, "Herny Cowell Uses Methods that Best Express His Ideas," *St. Paul Dispatc*h (12 May 1930), quoted from Manion, *Writings About Henry Cowell*, p. 79.

Leon Termen (better known as Leon Theremin) were inspiring influences. Together with Termen, Cowell developed an electronic instrument called *Rhythmicon*. It made use of the light-siren's principle: light bundles, directed onto a turning disc with several circles of holes, resulted in on-off patterns read by photo-electric cells. These cells controlled the sound generation of a simple beat frequency oscillator.[220] Cowell overlaid this simple mechanism with a second control function to realize the relation between overtone and rhythm he had proposed in *New Musical Resources*: the lowest of sixteen harmonics would sound once in a measure, while the highest would sound sixteen times (Figure 6).

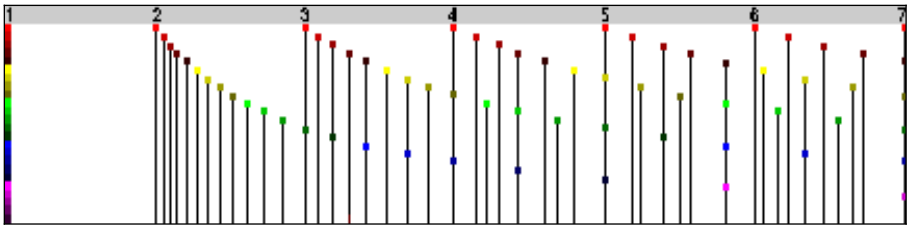

Figure 6: Beginning of a Rhythmicon Measure

The technical details of this 'polyrhythmic electronic instrument' were published in an article in Germany—Cowell had given the author the exact specifications during his stay there in 1931—illustrating how this electronic of "applied timbre serialism" from the pre-1933 period existed even in German journals.[221] While Stockhausen is unlikely to have browsed through an engineering journal like *Funk Monatshefte*, Meyer-Eppler and others interested in electronic instruments most certainly did. The instrument illustrates the application of one rational principle to both pitch and duration in its purest form. For

[220] Two inaudible radio frequencies create an audible sine-tone frequency (ex. 170,000 Hz and 169,000 Hz create 1,000 Hz sine tone).

[221] W. Saraga, "Ein polyrhythmisches elektrisches Musikinstrument," *Funk Monatshefte* (April 1932): 173–75.

the premiere, on 15 May 1932, Cowell composed a *Music for Violin and Rhythmicon* (1931) and an enthusiastic reviewer of the concert maintained that

> [t]he rhythmic control possible in playing and imparting exactitudes in cross rhythms are bewildering to contemplate and the potentialities of the instrument should be multifarious. [...] Mr. Cowell used his rhythmicon to accompany a set of violin movements which he had written for the occasion. [...] The accompaniment was a strange complexity of rhythmical interweaving and cross currents of a cunning and precision as never before fell on the ears of man and the sound pattern was as uncanny as the motion. [...] The writer believes that the pure genius of Henry Cowell has put forward a principle which will strongly influence the face of all future music.[222]

Surely this was an historic moment for timbre composition. Although the instrument was thus able to produce any combination of rhythms between one and sixteen on a keyboard —including delicate ones such as 7 : 9 : 13 : 15—it was at an experimental stage.

During his Berlin visits, Cowell also came in contact with the latest avant-garde developments during the 1920s and early 1930s. The city was at the absolute vanguard of modernist technical developments. The German avant-garde films from the 1920s provided many examples of experimental activities. Walter Ruttmann made several abstract films in the early 1920s and, in 1930, he realized his experimental film *Weekend*, that told the story of a couple's weekend through a collage of anecdotal sounds and speech fragments. In a manifesto of 1929 he wrote "[e]verything audible in the world becomes material."[223] For this film he had used the sound track of the latest Tri-Ergon sound film technology, recording noises from the city and country side as well as speaking and singing people, cutting and splicing the material into the final product. The eleven-minute long sound montage that resulted was in many ways superior to the early

[222] Homer Henley, "Music: New Future for Rhythms," *Argonaut* 110, 2846 (20 May 1932), p. 10.
[223] Matt Ingalls, "Weekend - Walter Ruttmann," at *The Transparent Tape Music Festival*, (<http://sfsound.org/tape/ruttmann.html> accessed on 1 July 2003), original document from 2002.

concrete music studies, no doubt partly because Ruttmann's celluloid-based technology was superior to the disc-based concrete music used by Pierre Schaeffer in 1948. The radio premiere of *Weekend* on 13 June 1930 was so successful that it was brought into cinemas as an 'acoustic' film.[224] The screen stayed dark and the audience had to imagine the events of the weekend. *Weekend* illustrates a type of 'intermedia' art in that it is hard to determine if it is music, a film, or a radio play. Cowell was not only interested in this type of 'intermedia' experiment that characterized the late 1920s and early 1930s; he actively took part in discussions about them and, with his electronic photo-cell instrument *Rhythmicon*, contributed a hybrid of drum computer and synthesizer.

In the early 1930s Cowell composed, published his seminal book *New Musical Resources*, wrote articles, edited journals, published new music, invented electronic instruments, knew about the latest experiments in art and technology, was an expert in world music, promoted ultra-modern American music around the world, and brought European new music to America. Cowell's music is too innovative and experimental to be discussed in great detail in the current context.[225] Cowell foreshadowed Cage in almost every aspect, and examples of particular significance will be mentioned below. Cowell was perhaps at the highest and most promising point of his career around 1933, when Buhlig recommended twenty-one-year-old Cage to find out if Cowell would be interested in publishing his music.

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[224] Ingo Petzke, "Der Ton kommt ins Bild ," in *Der deutsche Avantgardefilm der Zwanziger Jahre* , (<http://www.fh-wuerzburg.de/petzke/ton.html> accessed on 1 July 2003), original document from 1988. This 'acoustic film' is available online. The beginning is remarkably similar to Schaeffer's *Study for Pots and Pans*, but rather than Sacha Guitry we hear a recitation from Goethe's *Erlkönig*. (<http://www.ballongmagasinet.com/htm/archive/wild_wire_3/wild_wire_3.html>). *Weekend* had been thought lost, until a copy was found in New York in 1978.

[225] Excellent discussions are "*New Musical Resources*: Radical innovation in the music of Henry Cowell" in Nicholls, *American Experimental Music*, pp. 134–74 and Johnson, "Worlds of Ideas", pp. 15–91.

Cage submitted for publication in Cowell's *New Music* journal the Sonata for Clarinet, completed in early September 1933.[226] Cowell did not publish the work (though much later, in 1943, he published Cage's *Amores* for prepared piano and percussion) but, in order to prepare for studies with Schoenberg, advised Cage to study harmony and counterpoint with Adolph Weiss in New York. Cage would remain another six months in California before leaving for New York; yet, there is no trace in Cage's writings or interviews that Cowell taught him during this half-year period.[227] Cowell, however, stated that Cage did study with him:

> [Cage] studied dissonant counterpoint and composition with me for a season in California [and in New York] continued intensive explorations of his own into rhythmic form and percussion music, and the musical systems of other peoples, particularly in the Orient, in my classes at the New School.[228]

Around April 1934 Cage moved for approximately eight months to New York, 'officially' studying harmony and counterpoint with Weiss. For the time that Cowell taught at the New School for Social Research in the fall, Cage briefly comments that he "studied with Henry Cowell at the New School and became his assistant for a while." Cage appears to mention Cowell only reluctantly as his teacher. In an often-quoted text from 1959 Cage characterized Cowell as the "open sesame for new music in America,"[229]

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[226] Calvin Tomkins, *The Bride and the Bachelors: Five Masters of the Avant-Garde* (New York: Penguin Books, 1976), p. 83; Rita H. Mead, *Henry Cowell's New Music, 1925-1936: the Society, the Music Editions, and the Recordings* (Ann Arbor, Mich.: UMI Editions, 1981), p. 228.

[227] In his Vassar lecture, Cage simply noted that "[t]he next year [1934 in New York] was spent in New York, studying harmony with Adolph Weiss and rhythm with Henry Cowell; and the following two years, back in California, studying counterpoint with Arnold Schoenberg". He describes details about his studies with Schoenberg during 1935–36, but never mentions Cowell for that time period. See Cage, "A Composer's Confessions", p. 31.

[228] Henry Cowell, "Current Chronicle," in *John Cage*, ed. Richard Kostelanetz (New York: Praeger, 1970), p. 94–95. For the lacking references, see Cage, "A Composer's Confessions", or the biography David Revill, *The Roaring Silence: John Cage, A Life* (London: Bloomsbury, 1992), p. 42–43. In Revill, Cage, all by himself, developed the 25-tone composition method during this period. In the Vassar lecture, this method had already been developed during Cage's informal classes with Buhlig.

[229] John Cage, "History of Experimental Music in the United States," in *Silence* (London: Calder and Boyars, 1968), p. 71.

but his account of Cowell's achievements in this text does not include any details about his own composition studies with Cowell in the early 1930s.

After mentioning New York's extraordinary musical life during the 1920s and early 1930s and its many possibilities for young composers, David Nicholls notes that it is "...odd to find Cage failing completely in later years to mention the inevitable impact on him that the city must have had. Indeed, his recollections are almost suspiciously down-beat..." and "[i]t may be that in this, as in other aspects of his autobiography, Cage was less than direct when discussing the most formative influences on his aesthetic locus."[230] Indeed, if Cage is not disclosing his teaching experience with Cowell, then there is an important gap in his biography—concerning his formative period.

Other details Cage kept out of the public eye typically concern his personal relationships with men in his early years. Hines has revealed a number of these hitherto hidden connections.[231] For example, Cage also encountered Virgil Thomson for the first time in 1934.[232] In Thomson's circles Cage came in contact with Philip Johnson,[233] the official representative of the American Bauhaus and director of the architecture division

[230] Nicholls stated that Cage was suspiciously silent about this period. David Nicholls, "Cage and America," in *The Cambridge Companion to John Cag*e, ed David Nicholls (Cambridge: Cambridge University Press, 2002), p. 9.

[231] Thomas S. Hines, "'Then not yet Cage': The Los Angeles Years, 1912–1938," *John Cage: Composed in Americ*a, Edited by Marjorie Perloff and Charles Junkerman (Chicago: University of Chicago Press, 1994). This account of Cage's gay life is based on two exceptionally candid interviews with him. Jonathan Katz states: "Hines kindly let me hear parts of the tape recording of the interview [referring to a *ménage à trois* of Cage, Xenia, and Cunningham] and gave me the entire unpublished transcript. Despite Richard Kostelanetz's scurrilous charges as to its genuineness, I can testify to the authenticity of both tape and transcript." Katz, "John Cage's Queer Silence", p. 42.

[232] Hines, "Then not yet Cage", p. 92. Thomson, who lived in France at the time and only came to the United States for a brief interlude, later 'forgot' about this encounter in 1934. "...I first knew him [Cage] at thirty, in 1943." Virgil Thomson, "Cage and the Collage of Noises," *New York Review of Book*s (23 April 1970), quoted from *A Virgil Thomson reade*r (1981), p. 480.

[233] In 1934 Johnson was the official representative of the American Bauhaus. Mies von der Rohe, letter to Philip Johnson, 22 February 1933. See Kentgens-Craig, *The Bauhaus and America*, p. 95. Prior to meeting Cage, Johnson had been involved in securing teaching appointments at Black Mountain College for Bauhaus artists Joseph and Anni Albers. Thus Cage might have heard of Black Mountain College as a progressive educational institution with Bauhaus flair as early as 1934 from his friend Philip Johnson.

of the Modern Museum of Modern Art since 1932. Like Cage, Johnson had toured Europe in 1930 and studied architecture. Upon his return to New York in 1932, he organized the epoch-making architecture exhibition 'Modern Architecture—International Exhibition' which introduced to the American public the work of Walter Gropius, Le Corbusier, Mies van der Rohe, Pieter Oud, and selected other architects from around the world. The name *International Style* became associated with this group of architects through the exhibition booklet of the same name. The relation between Johnson and Cage apparently broke apart because of their difference in economic standing.[234]

The reason for Cage's silence about Cowell as his teacher may relate to Cowell's fateful encounter with the police in May 1936. Cowell was, after all, a convicted felon. By 1948, when Cage wrote his first autobiographical statement, he had firmly committed himself to Cunningham but his choice had to remain hidden during the Cold War and the period of McCarthyism. Homosexual relationships were then considered a crime and the fifteen-year prison sentence for his former teacher Cowell would always remain a frightful reminder of this fact. Cage's statement was presented only months after the House Un-American Activities Committee started to investigate actors for their affiliation with the Communist Party (Bertholt Brecht and the Hollywood Ten), and this was only the prelude to the more infamous activities of Senator Joseph McCarthy, who suspected all homosexuals to be in league with the Communists. In addition, the abstract expressionist circles of New York most interested in avant-garde music were dominated

[234] Hines, "Then not yet Cage". On a long car trip across America, Johnson repeatedly called Cage in an effort to keep the relationship alive. See Franz Schulze, *Philip Johnson: Life and Wor*k (New York: Knopf, 1994), pp. 97, 112.

by people with a strong macho profile, like Jackson Pollock.[235] Jonathan Katz has analyzed Cage's silence as an act of active resistance in this doubly hostile social context:

> To be homosexual in a homophobic culture was to forcefully realize that conversation was not always about expression, that it might be about the opposite: dissimulation, camouflage, hiding. But is there another frame to through which to assess Cage's conspicuous silence? For if his silence was an attempt to escape notice [...] it was a manifest failure. [...] If silence was in part an expression of Cage's identity as a homosexual during the cold war, it was also much more. It was not only a symptom of oppression but also a chosen model of resistance. This silence was not the passive stratagem of someone unwilling and unable to declare his identity in a hostile culture. On the contrary, in contrast to the codes of the closet, if the point of Cage's silence was to escape notice, its effect was surely the opposite.[236]

Does this silence of resistance, then, also explain Cage's silence on Cowell? In the absence of a clear answer, we can propose a makeshift solution: Cage—just as Cowell and many other composers—feared that acknowledging Cowell as the major source of his inspiration would lessen the chances of success for his own music.

Cowell's position was downright desperate in the overall cultural climate of that time period. By the 1950s the name Cowell had virtually been erased from the forefront of any modernist music movement as a consequence of his incarceration in San Quentin. Cowell's role as a forerunner of new music in America ended abruptly—he explicitly stated that he needed to start a new life on the East Coast, where he was less known, and his outlook was changed, as observed by several close friends. The shift to a bleaker existence has also been analyzed in his writings. Before his incarceration at San Quentin, Gann describes Cowell's writings as "fiery, iconoclastic, a little arrogant, willing to defend almost any innovation in the name of modernism" but afterwards they turned

[235] Caroline A. Jones, "Finishing School: John Cage and the Abstract Expressionist Ego," *Critical Inquiry* 19 (Summer 1993): 643–47. Morton Feldman's recalled "...Jackson Pollock was taunting John." and Cage remarked "I remember seeing him [Pollock] on the same side of the street I was, I would always cross over to the other side." in Katz, "John Cage's Queer Silence", p. 49.

[236] Katz, "John Cage's Queer Silence", p. 50.

"milder in tone, more concerned with theoretical soundness, less direct in his attacks on opposing schools of composition." Cowell suffered "a descent in public standing". He used to be regarded as "a musical expert, a genius." After his release in 1940 he was a "worker in the musical field, advocate for other composers and other musics in the world." Gann concludes that "Cowell's tragic San Quentin experience reduced a volcanic career to a routine one."[237]

Towards Knowing About Nothing

In 1935 Cage returned to Los Angeles and married the talented Xenia Kashevaroff.[238] Times were harsh and they lived in poverty. From 1935 until the fall 1936 Cage studied with Schoenberg.[239] The latter agreed to give lessons for free, if Cage would devote his life to music. Schoenberg would have taught basic harmony and counterpoint skills to his American students and, from his perspective, there was no question to compare their apprenticeship with that of a Berg or a Webern in the early years of the twentieth century in Vienna. Cage's prehistory, briefly sketched above, serves to underline just how many light-years separated Cage and Schoenberg in the mid-thirties. Schoenberg based his music on what he had learned from his German musical masters. Harmony and counterpoint were based on the music of Mozart and Bach, not his. The uprooting of his forced exile from Berlin and his move to the American East Coast—followed by a

[237] See Gann, "Subversive Prophet", p. 190.

[238] "One day [in 1933] into the shop [where Cage worked] came Xenia, and the moment I saw her I was convinced that we were going to be married. It was love at first sight on my part, not on hers. I went up and asked her if I could help her and she said she needed no help whatsoever. And so I retired to my desk, and she looked around and finally went out. But I was convinced she would return. Of course, in a few weeks she did. This time I had carefully prepared what I was going to say to her. That evening we had dinner and the same evening I asked her to marry me…. She was put off a little bit but a year or so later, she agreed." Quoted from Hines, "Then not yet Cage", p. 86.

[239] Michael Hicks, "John Cage's Studies with Schoenberg," *American Music* 8, 2 (Summer 1990), pp. 126–27.

second move to the West Coast—had just occurred, and a youth like Cage must have struck Schoenberg as lacking everything needed for a career in music. Cage had simply bypassed the music of Bach, Mozart, Beethoven, Brahms, and Wagner—not to mention Palestrina or Schütz—and thus his claims to compose dodecaphonic works must have greatly irritated Schoenberg.[240] Cage's aesthetics in the mid-thirties were inspired and formed by the innovative experimentation encountered in Bauhaus artists and Cowell's teaching and music, and this was at odds with Schoenberg's insistence on basic traditional skills. The many exercises in harmony and counterpoint frustrated Cage and totally failed to instill a sensitivity for functional harmony in him. Schoenberg asked Cage to work with the same plainchant over and over *for over a year*.[241] He continued to experiment with various idiosyncratic twelve-tone styles and, because Schoenberg refused to look at his work, continued to mail his compositions to Weiss in New York for correction and commentary. It is not difficult to understand how alienated Schoenberg must have felt by Cage's reverence. He must have been appalled by what he saw as the lack of even the most basic technical skills. Cage, on the other hand, made clear that his devotion to music was final and non-negotiable.

There was a conflict between Schoenberg's clinging to the older German traditions of music and Cage, who mainly revered Schoenberg, the revolutionary. Aesthetically, Cage preferred the experimental approach of the German Bauhaus and its American protagonist, Cowell. This view is shared by Nicholls, who stated that "Cage's aesthetic

[240] Worse still, Cage might have reminded him of his Viennese detractor Hauer.

[241] Cage related this to sixteen-year old Christian Wolff. See Gerald Gabel, "Une interview avec Christian Wolff," in *John Cage. Revue d'Esthétique, [N.S.], 13/1*5, Edited by Daniel Charles (Toulouse: Privat, 1988), pp. 506–7. See also fn. Fehler: Verweis nicht gefunden on page 215. In the interview Wolff described his own 1950 student period with Cage: Cage had used the "Schoenberg teaching method", but only for about six weeks.below

locus was probably influenced to a *far greater extent* by Cowell than by Schoenberg."[242]

Around 1936 Cage had a breakthrough experience:

> What little that I did write was atonal, and based on twelve-tone rows. At that time I admired the theory of twelve-tone music, but I did not like its sound. I devised a new way to write it which consisted of not only establishing an order to the twelve tones but of dividing the row into a series of static, non-variable motives and giving each motive its own ictus pattern. *This brought the element of rhythm into an integral relation with that of pitch.*[243]
>
> The compositions that resulted from this procedure interested some of my friends, particularly the late Galka Scheyer. She brought a friend of hers, Oskar Fischinger, who made abstract films, to listen to my work.[244] He spoke to me about what he called the spirit inherent in materials and he claimed that a sound made from wood had a different spirit than one made from glass. The next day I began writing music which was to be played on percussion instruments.
> I was convinced *overnight* that although twelve-tone music was excellent theoretically, in making use of the instruments which had been developed for tonal music, it had continually to be written negatively rather than

[242] My emphasis. Nicholls, "Cage and America", p. 16. Nicholls sees the impact of Schoenberg and Cowell on Cage as follows: "From the latter [Schoenberg], ultimately, he learnt compositional discipline, and of the fundamental necessity of structure (in whatever form). But from Cowell ... he inherited a spirit of musical adventurousness, as well as important practical examples of how such adventurousness might manifest itself." This issue remains hard to grasp, especially since Cage remained silent on Cowell and failed to report the many 'practical examples' Cowell provided.

[243] The described work—*Two Pieces for Piano* (ca. 1935)—is analyzed in Nicholls, *American Experimental Music*, pp. 182–84. See also James Pritchett, *The Music of John Cag*e (New York: Cambridge University Press, 1993), p. 10.

[244] Fischinger, born in 1900 in Frankfurt, was an inventor, pioneer of abstract films, and later in life, a painter. It is no mystery how this man could have had such a deep influence on Cage; he came from the circle of German Bauhaus experimenters who had long called for special experimentation centers for the new media technologies in Berlin during the 1920s and early 1930s. As early as 1920, Fischinger used hand-drawn black-and-white abstract designs to create abstract films. From 1926 to 1936 he lived mostly in Berlin, where he also worked on science fiction special effects with Fritz Lang. He also assisted Walter Ruttmann in his projects and was constantly exploring new experimental techniques that create sound or light effects on film media. His last major film project in Europe had been entitled *Komposition in Blau* (1935) and so it is not surprising to see that Galka Scheyer—the sponsor of the 'Blue Four'—introduced Fischinger to Cage. Here is what Fischinger and Cage worked on: "Il [Fischinger] fait ensuite un bref passage à la MGM où il réalise *Optical Poem* (1937). L'un de ses assistants pour animer la multitude de petits morceaux de papier en mouvement qui constitue le film s'appelle John Cage. Devant son intérêt pour les expériences sonores, Fischinger lui explique la manière dont il a composé la musique d'*Ornament Sound* [Tönende Ornamente (1932)] en dessinant sur la pellicule du film." William Morritz, "Oskar Fischinger, artiste de ce siècle", in *l'Armateur* [France], no. 12, July-August-September 1994, p. 32. Quoted from Philippe Langlois, "Oskar Fischinger," Website of *l'Observatoire Leonardo des Arts et des Techno-Sciences (OLATS*), (<http://www.olats.org/pionniers/pp/fischinger/fischinger.shtml> accessed on 5 July 2003), original document from February 2001. ("He [Fischinger] subsequently had a brief interlude at MGM, where he realized *Optical Poem* (1937). One of his assistants to animate the multitude of little moving paper snipplets which constitute the film was John Cage. Seeing his interest for sonic experiments, Fischinger explained how he composed the music for *Ornament Sound* [Tönende Ornamente (1932)] by drawing directly on the film."

> straightforwardly. It had always to avoid the harmonic relationships which were natural to the tonal instruments, which instruments it did not so much use as usurp. I was convinced that *for atonal music new instruments proper to it were required*.[245]

From this account one would believe that Cage had invented his proto-serialist approach to pitch and rhythm series all by himself. Cage studied with Schoenberg when he designed this composition method, but Schoenberg did not teach dodecaphony. Cowell, on the other hand, had extensively theorized about relating rhythm and pitch in *New Musical Resources*, and Cage had studied dissonant counterpoint with Cowell in 1933–34. Cowell was also in contact with Webern, who performed Cowell's music in Europe, and he thus knew about Webern's later works, which made constructive use of row fragments. Cage kept using this proto-serial way of composing in a number of his works until 1938.

Secondly, Fischinger's claims brought Cage to realize that worlds of sound and their spiritual presence existed outside traditional materials of music. He realized that Schoenberg liberated dissonance, but had overlooked the liberation of sound itself. Siding with Schoenberg's detractors in making the argument that the 'nature' of the tone conflicts with the use of dissonant chords, Cage came to a surprising conclusion. Rather than changing the dodecaphonic method and returning to a music based on structural relations of functional harmony, Cage argued for changing musical materials—to look for *New Musical Resources*—and bringing these into accordance with the dodecaphonic method (interpreted as 'equal rights' among sounds).

[245] My emphasis. Cage, "A Composer's Confessions", p. 31. The Quartet is often dated 1935. Fischinger arrived in Los Angeles in 1936 and the film, with which Cage assisted him, was only finished in 1937. Therefore the reported experiences can be dated to late 1936 or 1937. In either case this would mean that Cage's encounter with Fischinger took place after the end of Cage's studies with Schoenberg, but before his Seattle lecture on the 'Future of Music'. I am not aware that the impact of Fischinger on Cage's lecture has been well understood.

In the 1950s, young European serialists would stress the same incompatibility between material and method, harmonic tone and dodecaphony, to argue the need for experimental research into the inner sound.[246] Cage had no access to an electronic or film studio in 1937, but the effects of his encounter with the pioneer of experimental film Fischinger were most certainly reflected in Cage's 1937 campaign for Bauhaus-like musical research centers, in which all sounds and all technologies could be explored.[247] In fact, Fischinger and other German media artists of the 1920s and early 1930s had made the same calls in Germany. Fischinger was responsible for the first European color film—*Kreise* (1932)—and, only four years before meeting Cage, he created a proto-electronic composition *Ornament Sound* (1932). For this work, Fischinger drew forms directly onto the celluloid. The audience saw and heard the abstract forms. Fischinger's wife Elfriede tells the prehistory of this film:

> Fischinger lag krank in seinem Bett im Schlafzimmer, als er hörte, wie seine Frau vor der verschlossenen Tür einen Schlüssel auf den Fußboden fallen ließ. Da er krank war, hatte er genügend Zeit, darüber nachzudenken, weshalb es ihm klar wurde, daß seine Frau einen Schlüssel verloren hatte und nicht etwa einen Löffel oder eine Schere, die ja auch aus Metall sind. Die physikalischen Überlegungen führten ihn zu der Erkenntnis, daß jede Form, jedes Ornament, einen bestimmten Ton hervorruft; ...[248]

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[246] This theme is prominent in Stockhausen's theoretical texts. In his "Situation of the Craft (Criteria of Pointillist Music)" written in December 1952, Stockhausen proposed to reject all preformed tones because they led to contradictions in the work: "Ablehnung auch von vorgeformten Tönen", Karlheinz Stockhausen, "Situation des Handwerks: Kriterien der punktuellen Musik," (Paris) (December 1952), quoted from *Text*e 1 (1963), p. 22.

[247] "…center of experimental music must be established. In these centers, the new materials, oscillators, turntables, generators, means for amplifying small sounds, film phonographs, etc., available for use. Composers at work using twentieth-century means for making music." See: Cage, "The Future of Music: Credo", lecture in Seattle, 1937. Quoted from John Cage, *Silence: Lectures and Writing*s (London: Calder and Boyars, 1968), p. 6.

[248] Ingo Petzke, "Oskar Fischinger," in *Der deutsche Avantgardefilm der Zwanziger Jahre* , (<http://www.fh-wuerzburg.de/petzke/oskar.html> accessed on 1 July 2003), original document from 1988. ("Fischinger was lying sick in his bedroom, when he heard how his wife dropped a key behind the locked door. Since he was ill, he had enough time to reflect on why he could immediately tell that his wife had dropped a key and not a spoon or scissors, which also are made from metal. This physical reflection gave him the insight that each form, each ornament, produces a certain sound; ...")

Fischinger's insight that 'metal does not equal metal' led him to realize his composition of light-sound-forms by the name *Ornament Sound*, and this Berlin anecdote from 1932 also became the source Cage cited as his inspiration to research the sounds of all objects in his environment. He wrote a first noise-timbre composition, his *Quartet* for percussion (1935).[249] Having first composed the time structure of the work, Cage and three of his friends proceeded to find noise instruments by trial-and-error.[250] Several weeks of experimentation led to a scoring that included tables, books, chairs, various kitchen tools, brake-drums from automobiles, different lengths of pipes, steel rings, hardwood blocks, pedal timpani and, for good measure, a Chinese gong. Lou Harrison, a close associate of Cage at that time, later recalled the important role played by Cowell:

> Mention must be made here of Henry's adventurous promotion of automobile junkyards for the finding of new sounds. [...] Indeed, John Cage and I adopted all sorts of sounds from forays into out-of-the-way sources and, if we wanted to, we invented and constructed new instruments for our pieces.[251]

Again this statement comes from Harrison and not from Cage who, to the unsuspecting reader, appeared to have received his inspiration for the noise quartet from Fischinger. Cowell wrote his first work for solo percussion ensemble in 1934—a year before Cage, and while Cage was studying with him. *Ostinato Pianissimo* (1934) was written for eight performers and string piano (first player), string piano (second player), eight rice bowls (jala tarang), xylophone, two woodblocks, tambourine, guiro, two bongos, three drums,

[249] This work is officially dated 1935 but, according to all standard reference resources, Fischinger only arrived in Hollywood in 1936. Either the *Quartet* must be dated to a later time or Cage's story is incorrect. In the 'authorized' Cage biography by Revill, one finds: "[w]hat prompted Cage to write the *Quartet* is not clear..." This assertion is then followed by a long list of suggestions: the Futurists, Antheil, Varèse, Roldan, Chavez, Cowell, world music, music from Bali. Amazingly, Fischinger has disappeared. The text continues and now suggests that the *Quartet*—originally inspired by Fischinger—was the reason why Scheyer introduced Cage to Fischinger. Revill, *The Roaring Silence*, pp. 50–51.

[250] The time structure is the rhythmic equivalent of the Cage's row technique. Rhythmic motives are combined into small patterns. See Nicholls, *American Experimental Music*, pp. 185–87.

[251] Harrison, "Learning from Henry", p. 165.

and three gongs. Cowell's *Ostinato Pianissimo* is one of the first Western pieces written for percussion band. The work is not inspired by Varèse's *Ionisation* (1931), the most famous precursor in the genre; rather, it relates to Cowell's researches of world music since 1931.[252] Each instrument has an ostinato pitch-pattern of a different fixed length.[253] The theoretical background for this piece was Cowell's desire to "draw on those materials common to all the peoples of the world, [in order] to build a new music particularly related to our century."[254] His program for a new type of modernist neo-primitive percussion music sought simplicity to achieve greater universality, and while Cowell did not glorify technology in the manner of the Futurists, he did call for the use of all modern materials. Cowell explicitly put the 'material' at the center of neo-primitivism and this time—other than in *New Musical Resources*—not only sounds with overtones were material, but also noise. The *Ostinato Pianissimo* was his first neo-primitive work.

By the time of the *First Construction in Metal* (1939), Cage's composition technique had been enriched by a micro-macrocosmic structure. In Messiaen's terminology, the structure of this percussion sextet is a non-retrogradable large-scale form of five sections, their respective durations being set in the proportion 4:3:2:3:4. Each sixteen-bar unit within the large-scale sections repeats the same non-retrogradable organization by grouping a number of bars together. Moreover, Cage provides sixteen rhythmic cells along with sixteen percussion timbres for each player, thus shifting the serial organization around the number 16 rather than the orthodox 12.

4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4

[252] One year prior to Varèse's *Ionisation*, French-Cuban composer Amadeo Roldán wrote the percussion-ensemble works *Rítmicas V* and *VI* (1930). It is not certain that Cowell knew Roldán's *Rítmicas*, but it is highly probable that he knew of them. In the year of his own first composition for percussion-ensemble, *Ostinato Pianissimo*, Cowell published Roldán's *Motivos de Son* (in vol. 7, no. 2 of his *New Music* quarterly) and Cowell's associate and member of his publication committee, Nicolas Slonimsky, describes these works in his 1945 book, *Music of Latin America*). If Cowell knew of Roldán's *Rítmicas*, they would be conscious precedents, even if not actual formal models.

[253] For an analysis of this work, see Nicholls, *American Experimental Music*, p. 168.

[254] Henry Cowell, "Towards Neo-Primitivism," *Modern Music* 10, 3 (1933), p. 151.

3	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	
2	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4		**16**
3	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	
4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4	4 | 3 | 2 | 3 | 4

Table 1: Structural Rhythm of *First Construction in Metal*

The novelty of this approach consists mainly in its abstract structural *a priori* planning of the different parts of a composition before any sound is involved. The larger scale structures are articulated by differences in overall timbral texture or by changes in tempo, but at the lowest level of this strict 'pre-compositional' time structure, Cage's composition method becomes more flexible.

Cage called this composition method 'structural rhythm' and considered it 'his answer to Schoenberg's 'structural harmony.'[255] Cage did not mention Cowell's *United Quartet* (1936), begun before his incarceration and finished in prison in July 1936. Here Cowell applied for the first time—and still two years before Cage—the micro-macrocosmic structure that would remain Cage's major composition technique in all of his concert works up to about 1956.[256] Cowell explained the novel idea for the *United Quartet* in a letter from 16 July 1936 to his friend Slonimsky:

> In this quartet, I tried to make a first step toward a style which is not an imitation of that of any nationality, but which is *based on the least common denominator of musical elements, which are drawn from the peoples of the whole world*,

[255] Cage also refers to this hierarchical form as 'square-root form': 16 units, containing 16 bars each, result in a total of 256 bars. Therefore √256 defines both number of unit-sections and bars per unit.

[256] David Nicholls, "Henry Cowell's United Quartet," *American Music* 13, 2 (1995): 195–217. The piece is discussed more briefly in Johnson, "Worlds of Ideas", pp. 55–57. Johnson shows the first twenty-five measures (5x5, each at 3+2 beats) of the first of five movements of this string quartet. Cage had used Cowell's 'square-root form' once prior to *First Construction in Metal*, in his *Metamorphosis* (May 1938) for piano. The first of five movements used a pattern of 26 quarter notes, repeated 25 times. This very closely matched the 'structural rhythm' of Cowell's *United Quartet*. Cage's *Metamorphosis* is analyzed in depth in Nicholls, *American Experimental Music*, pp. 192–200. Nicholls stated quite cautiously that "[g]iven the close teacher-pupil relationship between Cowell and Cage, as well as the *United Quartet's* publication in *New Music* in 1936, it is thus quite possible that this, and similar schemes shows Cage's knowledge of Cowell's use of ethnically inspired structures." Ibid., p. 194.

> which are simple enough to be understood universally. If the music is a success in this attempt it may sound a bit odd, but it should be equally understood by Americans, Europeans, Chinese, Indians, or primitives.[257]

Cowell's idea appealed to Cage, who earlier had been fascinated with Schoenberg's twelve-tone technique because it gave equal importance to all tones. In addition, in its title Cage's *First Construction in Metal* resonates with Fischinger's discovery that 'metal does not equal metal'.

Another invention due to Cage's work with dancers was the prepared piano, initially conceived as an economic percussion orchestra. It is symptomatic, however, that Cage should have transformed the definite pitches of the piano to the more indefinite percussive pitches of the prepared piano. This parallels his earlier move from writing for pitched music instruments to percussion instruments. Once again, Cage's predecessor is Cowell, whose career in the 1920s and 1930s was built around his unorthodox uses of the piano, from tone clusters to a catalog of string piano techniques, some of which come very close to the prepared piano.

While working at the Cornish School in Seattle, Cage composed and realized his first electroacoustic compositions, *Imaginary Landscape nos. 1–3*. He included the timbres of oscillators, test-tone recordings, a buzzer, an amplified coil of wire, and some amplified 'small' sounds. In a letter to George Antheil, Cage wrote:

> I am doing everything I can to establish a 'center of experimental music.' The purpose of this center will be to do research, composition and performance in the field of sounds and rhythms not used in the symphony orchestra: the ultimate purpose will be the use of electrical instruments which will make available the entire desirable field of sound.[258]

[257] Nicolas Slonimsky, *Perfect Pitch: A Life Story* (New York: Oxford University Press, 1988), p. 163.
[258] Cage, letter to George Antheil, 1939. Quoted from Revill, *The Roaring Silence*, pp. 65–66.

Cage came closed to this goal in the early 1940s, during his brief tenure at the Chicago School of Design. The school's Head was László Moholy-Nagy,[259] another expatriate German Bauhaus artist who formerly had collaborated with Fischinger on a light-color organ. Moholy-Nagy and Cage first met at Mills College in the late 1930s. He offered Cage to teach a seminar in experimental music at the Chicago School of Design, and so the Cages moved to Chicago.

Cage taught the seminar for one summer, but working conditions were poor and so Cage decided to move on to New York, hoping to have better opportunities to realize his ideas of a center for experimental music. Upon arrival in New York, John and Xenia briefly stayed at the house of Max Ernst and Peggy Guggenheim, but soon John found out that he had miscalculated and the situation was more complex than anticipated. They moved in with dancer Jean Erdman and her husband, mythologist Joseph Campbell. From this time date Cage's first encounters with Asian texts and Christian mystics.[260] In

[259] Moholy-Nagy (1895–1946) was a Hungarian-born painter, sculptor, photographer, designer, film maker, and an influential theorist and teacher. He lived and worked in Hungary until 1919; Berlin (1920–23); at the Weimar and Dessau Bauhaus (1923–28), where he was the closest associate of Walter Gropius; again in Berlin until December 1933; in exile in Amsterdam and London until July 1937; and, finally, in Chicago, Illinois, where he settled and founded the New Bauhaus in 1937, later named the Chicago Institute of Design. Moholy-Nagy was as influential for his theories and writings as for his practical work of art. He and Cage met for the first time at Mills College in 1938. Moholy-Nagy was enthusiastic about Cage's proposition to establish an experimental music center, to explore the musical use of new media but, at that time, he lacked the financial means. Moholy-Nagy and Fischinger collaborated in 1925, after the former had published his 'Color-Light-Music'. Alexander László [László Moholy-Nagy], *Die Farblichtmusi*k (Leipzig: Breitkopf & Härtel, 1925). Their goal had been to produce an organ that would relate color and music and at the artist's festival of 1925 in Kiel, Germany, they presented a sound-light projector called Sonochromatoscop. At the Bauhaus Moholy-Nagy illustrated certain concepts in his lectures with Fischinger's experimental films. See Langlois, "Oskar Fischinger". This amply shows the close relation between Fischinger and Moholy-Nagy, and underscores once again Cage's close involvement with leading exponents of the Bauhaus philosophy.

[260] This according to David Patterson, "Cage and Asia," in *The Cambridge Companion to John Cag*e, Edited by David Nicholls (Cambridge: Cambridge University Press, 2002), p. 44. For two reasons, I doubt Patterson's assertion: Cage's Bauhaus links and his savvy as a library user. He had learned about the use of libraries early on in his music studies, and in his early biography one finds him again and again in some way involved in library research. Even during his first visit to Europe, he literally disappeared in a big Parisian library studying Gothic architecture. Bauhaus artists, such as Fischinger and Moholy-Nagy, had long been interested in Eastern philosophy, culture, and art.

1946 Cage became acquainted with Indian classical musician Geeta Sarabhai. She studied Western art music with Cage and, in exchange, taught Cage about Indian music and music philosophy. When she departed she presented Cage with a copy of *The Gospel of Sri Ramakrishna*,[261] a spiritual book Cage studied less for aesthetic reasons than for securing psychological support: Cage had been troubled by the separation and divorce from Xenia in the mid-1940s and the start of an intense relationship with dancer Merce Cunningham.[262] Cage and Cunningham had first met at the Cornish School in 1938 and had begun to collaborate in 1942, while Cunningham still worked for the Martha Graham Company. During the 1940s in New York, Cage wrote many works for prepared piano in New York, partly for collaborations with Cunningham and partly for pure concert performance.[263]

As the composer Cage matured during the 1940s, Webern and Satie became of chief importance for him. Virgil Thomson, prolific composer and musical critic of great influence at the *New York Herald Tribune*, had been a long-time devotee of Satie's music. In 1944 he introduced Cage and Lou Harrison to Satie in an experience that "moved Harrison, but profoundly changed Cage."[264] By late 1944 Cunningham had choreographed 'Idyllic Song' with the music of Satie's *Socrate* in an arrangement for two pianos by Cage. A previous encounter with piano music by Satie in 1930 came too early

[261] Mahendra Nath Gupta, comp., *The Gospel of Sri Ramakrishn*a (New York: Ramakrishna-Vivekananda Center, 1942). More details about the encounter with Geeta Sarabhai in Patterson, "Cage and Asia", pp. 48–49.

[262] Philip Brett, "John Cage" in *Gay Histories and Cultures: An Encyclopedi*a, New York: Garland, 2000.

[263] For a description of their collaboration, see Merce Cunningham, "Un processus de la collaboration entre la musique et la danse," in *John Cage. Revue d'Esthétique, [N.S.], 13/1*5, ed. Daniel Charles (Toulouse: Privat, 1988), pp. 157–68, originally as Merce Cunningham, "A Collaborative Process between Music and Dance," in *A John Cage Reader: In Celebration of His 70th Birthda*y, Edited by P. Gend and J. Brent (New York: Peters, 1982), pp. 107–20. Cunningham's choreographies are provided at Merce Cunningham, "Repertory: Chronology of Works," (<http://www.merce.org/repertory_chronology.html> accessed on 29 August 2002), original document from 1995.

[264] Anthony Tommasini, *Virgil Thomson: Composer on the Aisl*e (New York: Norton, 1997), p. 368.

in Cage's life to have any direct impact.[265] Cage also may have been at a Satie exhibition arranged by Darius Milhaud at Mills College.[266] It may thus not be mere coincidence that Cage composed *Living Room Music* in 1940, a title reminiscent of Satie's *Furniture Music*.

Cage also discovered Webern in 1944. Lou Harrison reviewed the first full-fledged music and dance co-production of Cage and Cunningham, which took place on 5 April 1944 in Manhattan.[267] In his review, Harrison compared Cage's music to Webern's. Since Cage did not yet know Webern's music he set out to locate recordings—and was stunned:

> I used to go with my hair on end and sit on the edge of my seat. It was so completely different from anything I'd ever heard. Of course he cannot compare to Schoenberg. Schoenberg is so clearly magnificent. Boulez is responsible for the shift to Webern and I think I understand why. Schoenberg's music is traditional. It continues the past magnificently. Whereas Webern seems to break with the past. He gives one the feeling he could break with the past. For he shook the foundation of sound as discourse in favor of sound as sound itself. But in Webern the supremacy of pitch relations remains. And so he was really tied to an earlier time.[268]

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[265] Retallack, *Musicage*, p. 84. Cage had been given an anthology of contemporary piano pieces, which included works by Stravinsky, Schoenberg, Satie, and Scryabin: Helma Autenrieth-Schleussner, *Das neue Klavierbuch: eine Sammlung von Klavierstücken zeitgenössicher Komponisten*, (Mainz: Schott, 1927–1929).

[266]Milhaud fled from Paris in 1940 and left many of his own works behind to take secure original manuscripts and scores of Erik Satie. Thomson describes the contents of a Mills College Satie Exhibition Catalogue. Virgil Thomson, "French Music Here," *New York Herald Tribune* (5 January 1941), quoted from *A Virgil Thomson Reader* (1981), pp. 207–10. The exhibition lasted only two weeks, from 27 November to 11 December 1940. John and Xenia Cage had moved to San Francisco in September 1940, where Cage struggled working in hospitals and community colleges for the WPA. He was in close contact with Lou Harrison, who taught at Mills College in Oakland, just across the Golden Gate bridge. Harrison and Cage staged performances of percussion concerts in the Bay area, co-authored *Double Music,* and in January 1941 Cage also taught a course at Mills. Both Harrison and Cage were thus close to the Satie exhibition of 1940 and may have consulted Milhaud. Moreover, Milhaud and Satie collaborated on the 1920 version of *Musique d'ameublement* suggesting a further parallel with *Double Music*.

[267] Cunningham, "A Collaborative Process", pp. 107–8.

[268] PEYSER 1976, p. 58. Those who are familiar with the thinking and prose of Cage may find it difficult to place all of these words in his mouth. In particular 'Of course he cannot compare to Schoenberg. Schoenberg is so clearly magnificent' sounds odd at best while the passage on Boulez and Webern seems completely out of context. In 1944 Cage matured as a composer and his encounter with Webern indicates a clarification of his own path. Nevertheless, the anecdote, reproduced from memory or otherwise modulated

Once Cage became aware of Webern, he must have tracked the rare concerts and publications. Since Webern scores were as hard to find in the United States as anywhere else in the world, the book of Leibowitz would have become a precious resource for Cage as soon he would have learned about it. Given Cage's Webern enthusiasm and his many musical friends, there can be little doubt that Cage that this happened rather sooner than later. Many European emigrés and Webern students had arrived in New York, and a few leads will suffice to make the point. Babbitt was informed about the developments in France, read Leibowitz's book in French, and reviewed its English translation: in 1947 he is reported to have played four-hand jazz with Leibowitz, and Babbitt's publisher Boelke-Bomart was in contact with Leibowitz to secure contracts with leading Parisian serialists (which, as an aside, casts serious doubt on the common suggestion that Babbitt developed his first compositions with serial rhythms independently).[269] Thomson, accompanied by Copland, traveled to Paris after 1944, followed the Parisian dodecaphonic renaissance closely, and wrote articles in the *New York Herald Tribune* on the contemporary French music scene.[270] Leibowitz and Cage shared friends: the former dedicated his Sonata for violin and piano op. 12a (1944) to Anahid and Maro Ajemian, who lived in New York in the 1940s. Maro Ajemian also premiered Cage's *Sonatas and Interludes* in January 1949 and later requested Boulez to write a piece for her and her sister Anahid. The number of

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by Peyser, is quite likely based on an interview with Cage. Since it is the *only source* of which I am aware I gave it here in full, adding my caveat. I checked several Cage monographs as well as a wide range of interview materials and a number of promising articles, such as Martin Erdmann, "Webern und Cage," in *John Cage* 2, Edited by Heinz-Klaus Metzger and Rainer Riehn (München: Text + Kritik, 1990). Only Peyser had 'precise' information on Cage's first encounter with Webern.

[269] PEYSER 1976, pp. 91–92. See also page 90.

[270] In this connection is should be noted that Thomson asked Cage to write the former's biography, a project that stretched over many years and ultimately did not materialize. Cage and Thomson were perhaps closest in the second half of the 1940s.

connections to Paris is legion and thus it is unlikely that Cage would not have taken note of Leibowitz's book as early as 1947.

Cage must have been particularly impressed by the structural use of silences in Webern's music, a fact he expressed indirectly when noting that Webern "shook the foundation of sound as discourse in favor of sound as sound itself."[271] Certain passages from Leibowitz's *Schoenberg and His School* prefigure Cage's later understanding of silence. The chapter on the last works of Webern is headed by an epigraph from Maurice Blanchot's *Mallarmé et le language*:

> But, when we have discovered in language an exceptional power of absence and of denial, we are tempted to consider the very absence of language as part of its essence, and silence as the ultimate possibility of speech…[272]

Is this, then, the original source of inspiration for Cage's discovery of silence, ultimately leading to his 1961 collection of writings under the title *Silence*? Blanchot's 'activist' concept of silence as the 'ultimate possibility of speech' fits with the theory developed by Jonathan Katz; Cage transforms his silence into speech.[273] On the other hand, doubt has been cast on Cage's suggestion that his discovery of silence is related to his studies of Zen Buddhism. David Patterson researched the conflicting dating of Cage's East Asian studies throughout the Cage literature. He points out that Cage and Wolff took seminars with Suzuki as late as 1952 and that

> this redating creates a historic vacuum, for unfortunately, this spurious citation to Suzuki's lectures has been the predominant (and often only) historical to Cage's early East Asian studies, and no new information on this period has yet surfaced that might fill the void.[274]

[271] See Cage's first encounter with Webern, quoted above. PEYSER 1976, p. 58.
[272] LEIBOWITZ 1949, p. 226.
[273] See page 140.

The connection between Webern's music and silence—in combination with Leibowitz's book—is a hitherto overlooked source for Cage's discovery of silence; this will become clearer below, when we consider the sudden appearance in the summer of 1948 of a new theoretical argument in support of 'structural rhythm' in Cage's texts, namely, that duration is the only aspect of sound common to both sound and silence. The suggested source is especially compelling, since Webern's use of silence is striking to a musical ear, while competing sources—such as Zen Buddhism or Christian mystic Meister Eckhart—are not based on a musical experience (at least not in traditional terms, that is, prior to Cage's composition of 4'33''). In later years Cage's connection to Webern during the late 1940s and early 1950s has been increasingly obscured and, along with it, the source of his discovery of silence.[275]

In these times of inner upheaval in his personal life and outer encounter with musical idols, the writings of Coomaraswamy—to be discussed in more detail below—became Cage's spiritual and aesthetic guide. Between 1946 and 1948 he wrote a crystalline cycle of twenty works for prepared piano, today regarded as one of his definite masterworks. In the *Sonatas and Interludes*, music became a way to 'to season and sober the mind, thus making it susceptible of divine influences' and to integrate the various conscious and unconscious parts of one's personality in a 'final tranquility.' The *Sonatas and Interludes*, premiered on 12 January 1949, were well received by New York critics. Cecil Smith spoke of "one of the year's most iconoclastic and provocative recitals" and,

[274] Patterson, "Cage and Asia", p. 53. For example, Cage's studies with Suzuki are wrongly dated from 1945–47 in Peter Gena and Jonathan Brent, eds., *A John Cage Reader: In Celebration of His 70th Birthday* (New York: Peters, 1982), p. 186 and from 1949–51 in John Anderson Laurie Cage, "Taking Chances: John Cage and Laurie Anderson," *Tricycle: The Buddhist Review* (1992): 52–59.

[275] Cf., for example, the description of Cage's early years in the Revill, *The Roaring Silence*. Webern is barely mentioned. Note, for example, that in the discussion of Cage's String Quartet, which strongly betrays Webern's influence in the musical structure, Satie is mentioned while Webern is not. (pp. 104–5)

lauding “Mr. Cage’s fabulous ear for timbre and texture [which] has enabled him to achieve gleaming combinations of overtones such as have never been heard before in western music…”, does not fail to point out “the severe logic with which Mr. Cage approached his entire formal problem.”[276] The success of the *Sonatas* won Cage a Guggenheim fellowship and allowed him to embark on a six-month expedition to Europe in the spring of 1949.

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* *

Half a year before the trip to Europe, Cage was invited to join the Black Mountain College faculty for the summer school of 1948. Cage organized a Satie Festival and one evening provided an introductory lecture to the music of Webern and Satie, not all too far removed from the polemical tone of the most notorious articles by Boulez. He redefined the historic importance of Satie and Webern with respect to Beethoven, father of Classical music:

> In the field of structure, the field of definition of parts and their relation to a whole, there has been only one new idea since Beethoven. And that new idea can be perceived in the work of Anton Webern and Erik Satie. With Beethoven the parts of a composition were defined by means of harmony. With Satie and Webern they are defined by means of time lengths. The question of structure is so basic, and it is so important to be in agreement about it, that one must now ask: Was Beethoven right or are Webern and Satie right?
>
> I answer immediately and unequivocally, Beethoven was in error, and his influence, which has been as extensive as it is lamentable, has been deadening to the art of music.[277]

Cage spoke with remarkable self-confidence. His method of structural rhythm, still experimental in 1939, had now taken on the character of a breakthrough development in

[276] Cecil Smith, "Ajemian Plays Sonatas by John Cage," *Musical Americ*a (15 January 1949), p. 9.
[277] John Cage, "In Defense of Satie," (Lecture at Black Mountain College) (July 1948), quoted from Kostelanetz, *John Cag*e (1970), p. 81.

the history of music. Sound and silence, Cage argued, were the complementary elements essential to all music. While sound is characterized by pitch, loudness, intensity, and duration, silence is characterized by duration only. Hence time-length alone is capable of producing logical musical forms. This lecture of summer 1948 constitutes Cage's first documented use of silence as an argument to support the use of structural rhythm. Five months before, in his Vassar lecture 'A Composer's Confessions', he had still argued:

> Two facts then led me to structural rhythm: the physical nature of the materials with which I was dealing, and the experience I had in writing within the lengths of time prescribed for me by modern dancers.

This suggests that Cage discovered 'silence as the ultimate possibility of speech [and music]' in the first half of 1948—most likely prompted by reading Leibowitz's Webern chapters—and then included the new argument in his Blackmountain College lecture 'In defense of Satie [and Webern]'.[278]

Beethoven's error of defining musical structure by harmonic means, Cage pursued, had nearly shipwrecked "art on an island of decadence". He then proceeded to prepare his stunned, largely Germanic audience for Satie's *Things Seen on the Right and on the Left* by explaining its underlying phrase-structure, very much in keeping with his own method of structural rhythm. In order to explain the brevity of Webern's programmed *Vier Stücke* for cello and piano, op. 7, Cage resorted to a quote by Paul Klee:

> It is a great difficulty and a great necessity to have to start with the smallest. I want to be as though new-born, knowing nothing, absolutely nothing, about Europe; ignoring poets and fashions, to be almost primitive.[279]

[278] My addition [and music] to the Blanchot quotation, as well as [and Satie] to Cage's lecture title: It is not impossible that Cage expunged Webern from the title for the print version of this text in 1970. I noted that Cage actively groomed and shaped his preferred image in later years. There is little reason, however, to doubt Cage's infatuation with Webern in the late 1940s and early 1950s. It is well-documented in the Boulez-Cage correspondence or, alternatively, in the fact that the New York School composers, to be discussed in more detail below, were linked by a common devotion to Webern when they first met.

Cage's aesthetic affinity to the German Bauhaus continued unabated since 1930, and he was especially close to the art of introvert painter, writer, and musician Klee who, much like Cage himself, always remained willing to ask questions or, perhaps more appropriately in this case, to forget answers. (As a psychoanalytic aside, the sound of the German word 'Klee' (clover) is written as 'clé' (key) in French. While Cage may not have known the German meaning of Klee, he certainly did know the French word 'clé' which, in combination with his name-of-the-father 'Cage', provides a very meaningful set. It is impossible to give an interpretation of it, since this is only possible behind closed doors and by the subject (Cage, in this case) himself. Yet, the combination 'key—Cage—fortune' is very suggestive indeed, and may have led to some hair-raising conclusion which will forever remain a secret.) The goal of knowing 'nothing, absolutely nothing' corresponded precisely to a state of meditative tranquility Cage sought in the composition of the *Sonatas and Interludes.* Rather than Buddhism, the work of Coomaraswamy inspired Cage's ideas about the spiritual, healing, and integrating function of music at that point in time. Such aims were also apparent in the idea for a composition consisting only of silence. Cage had been inspired by the white paintings of Robert Rauschenberg, who studied with abstract Bauhaus painter Josef Albers that summer in 1948 at Black Mountain College. Originally intended to carry the title *Silent Prayer*, this project was realized as *4'33''* in 1952. The earlier title reflected better the high spiritual aim of music Cage sought, namely "to integrate the conscious and unconscious mind, Law and Freedom, in a random world situation."[280]

[279] Ibid., p. 82. In early 1947 Cage had been impressed by a performance of Webern's *Five Pieces for String Quartet*.
[280] Ibid., p. 84.

A Universal Theory of Modern Music

One of the major documents in the history of post-war modern music, Cage's article "Forerunners of Modern Music", appeared in March 1949 in *Tiger's Eye* and in December 1949 in the French music journal *Contrepoints*.[281] Quite a few European libraries might have had a subscription to *Contrepoints*, so that this article could reach quite a vast audience although, due to the French text, it was especially likely to be noted in the francophone parts of Europe. "Forerunners of Modern Music" and "Raison d'être de la musique moderne" have one striking, rather unusual feature—for Cage, that is—in that they both are amply embellished by footnotes. The English title suggests a historic article, while the French title has an apologetic connotation. In fact, it contained Cage's carefully crafted, 'universal theory of modern music', as we shall call it.[282]

Cage set out by calling for a spiritual function of music. Then he defined four essential composition-theoretical terms—construction, method, material, and form—in their dualistic relation to either rational mind (thinking) or irrational heart (feeling).[283]

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[281] John Cage, "Raison d'être de la musique moderne," *Contrepoint*s, 6 (December 1949), 55–61, quoted from Nattiez, *Pierre Boulez, John Cag*e (1990), 64–69. *Contrepoints* editor and musicologist Fred Goldbeck provided the (excellent) French translation, but changed the title from "Forerunners of modern music" to "Raison d'être de la musique moderne".

[282] The graphic that summarizes the key elements of Cage's theory is shown in Figure 10 on page 269.

[283] In his discussion of "Forerunners of modern music", Pritchett labels these terms as 'four-fold division of music'. Pritchett, *The Music of John Cage*, pp. 45–47. This is less evident than it may seem. Structure, method, material, and form relate to different spheres within the musical domain and they don't add up to a sum total called 'music', as Pritchett appears to suggest. The closest equivalent to music in the Cagean theory is 'form'. For Cage—at that point in time—'form' involves the perception of music *in its totality*. The other three terms relate to the composition process, its planning, and realization. In the final form of any work, the three other terms will relate in ever changing ways, depending on particular composers and specific works. There is no guarantee that structure, method, and materials will be perceivable in the final form: a zero sum is possible—a particularly elegant part of the scheme and a source of pride for Cage, who alleged that there was not enough of 'nothing' in twelve-tone technique—leaving only form as a final, irreducible component of music. (And this, most emphatically, would result in perceived 'Silence' which, according to Cage, does not exist). I would therefore describe these four terms as Cage's ontological grid to think about music, vast and complex, yet by no means guaranteed to be complete or final. Figure 10 on page 269 shows the graphic as published in *Tiger's Eye* in March 1949. N.B.: the four terms—structure, method, material, form—occur throughout *Silence*, for example, but the key to understand them—the graphic in Figure 10—was not reprinted in *Silence*. An unsuspecting reader of the texts in *Silence* will thus

Cage noted that "[a]ny composing strategy which is wholly 'rational' is irrational in the extreme." While construction is always controlled rationally, musical form always relates to feeling. Composition method and musical material stand in between construction and form may be controlled by either ratio or feeling.[284]

Cage defined both sound and silence as musical material. While sound has four acoustical dimensions, silence, as we noted above, only has one: duration. It follows that only duration can be a valid construction principle and this ought to be agreed upon. He compared the musical situation since atonality with a destroyed city—the structural functions of harmony are destroyed—and asserted neither Schoenberg, nor Stravinsky, nor the neo-classicists had been able to propose valid remedies. Webern and Satie, forerunners of modern music, reasserted the forgotten functional use of time as structuring device in Western music.[285]

The functional use of time liberates sounds and harmonies from having to serve as articulation of structure and, therefore, natural tonal gravities may flourish again. This non-functional dimension of tonality is best called proto-tonality, rather than atonality, because this term better captures the essentially positive and forward way of thinking about sounds in freedom. Music exists in a dialectic of law and freedom, a dialect of

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read about form and material, without grasping the underlying dialectical scheme Cage had devised, and thus miss the notions introduced in Cage's theory. A challenging question—such as the relation between form and material—is better understood if one first examines this scheme and understands how it relates to Cage's music theory. A second question, of course, is for how long Cage held on to this ontological grid. It seems plausible that he changed his views by 1961, at the time of the first printing of *Silence*, since he omitted that key graphic. Maybe he felt that it had been too powerful for its own good.

[284] The French version of the article contains a graphic omitted in *Silence*, which relates the four terms to the mind-body opposition in the manner of the Asian Yin-Yang symbol.

[285] Cage introduced Webern as a legitimate forerunner of modern music before meeting Boulez and he did so in more emphatic terms than Boulez. In his first published article "Propositions" from January 1948, Boulez mentioned Webern as the only Viennese composer who, despite his reliance on traditional rhythmic writing, had been able to dislocate regular metre.

mind and heart. The functional use of time to generate a binding law structure guarantees freedom to use all materials:

> Any sounds of any qualities and pitches (known or unknown, definite or indefinite), any context of these, simple or multiple, are natural and conceivable within a rhythmic structure which equally embraces silence.[286]

Cage closes with a call for new sound technologies, mentioning McLaren's experiments with drawing sound on film.[287] He points out that the drive to possess things and to fix them in their materiality as evidenced in book printing or in oil paintings as opposed to story telling or the art of sand paintings, "places nearly insurmountable obstacles in the path of instantaneous ecstasy." This last comment relates also to the article's epigraph by Christian mystic Meister Eckhart, to which we must now turn in order to understand the mystical leanings of John Cage.[288]

The German Christian mystic Meister Eckhart (1260–1327) was an evangelical preacher. His sermons stressed the path to salvation through personal spiritual

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[286]John Cage, "Forerunners of Modern Music," *Tiger's Eye* (March 1949), quoted from *Silence* (1968), p. 65. In French as: John Cage, "Raison d'être de la musique moderne," *Contrepoints*, 6 (December 1949), 55–61, quoted from Nattiez, *Pierre Boulez, John Cage* (1990), p. 68.

[287] Robert Sabin, "New Sound Recording Process Seen by League of Composers," *Musical America* (15 January 1949), p. 12. The League of Composer's had organized an 'Unusual Evening of Music and Films' on 2 January 1949 at the Museum of Modern Art in New York, days before the premiere of Cage's *Sonatas and Interludes*. Canadian scientist Norman McLaren developed a system to compose directly music on film by drawing figures on the successive frames of the media: "The composer can thus control absolutely the pitch, the quality, and the duration of every tone, without having to worry about an intermediate performer. Furthermore, this new process offers an unlimited range of pitch, from the lowest to the highest audible tones. Any combination of rhythms is also possible, and the music can move as rapidly as the composer wishes—far more swiftly than any human being could play it." Boulez had just completed a string quartet (later renamed *Livre pour quatuor*) which would have to wait for more than three decades for performance, due to its excessive performance difficulty. So the idea of using technology to create music of arbitrary complexity with this new technology was very appealing when Cage discussed these McLaren experiments with Boulez in 1949. The idea of an 'authentic' music, cutting out the 'middle man' was later championed by Meyer-Eppler in Bonn who closely followed the developments in America and was aware of McLaren's work. Finally, let us not forget that it was the work of Fischinger (!) that inspired McLaren to engage in these sound drawing experiments. McLaren had encountered Fischinger's *Tönende Ornamente* of 1932 during his study period in Glasgow.

[288] According to Pritchett, Cage owned copies of Franz Pfeiffer, ed., *Meister Eckhart* (London: Watkins, 1924–31) and Raymond Bernard Blakney, trans., *Meister Eckhart: A Modern Translation* (New York: Harper, 1941).

development. He taught we should 'break through' the complexities of all the particulars that confront us, to reach the simple 'ground' of all reality, where God and the soul are inseparably one, by abstracting from all that is 'this' or 'that', both metaphysically and ascetically. For him, 'abstractedness' is the highest virtue, because it produces the most intimate union with God, from which the Christian life flows as spontaneously as God's own life.

Cage's discovery and interpretation of Meister Eckhart is mediated by the ideas of art historian Ananda Kentish Coomaraswamy, also known by his acronym AKC. Raised and educated in aristocratic England, Ceylon-born AKC returned to his native land for a period of several years in the early 1900s, and attempted to stop the decadent influences of the Colonial Western culture there. After this project failed, he spent the remaining four decades of his life studying the aesthetics of Eastern and Western art throughout history, first in England and later in Boston, Massachusetts. His erudition turned him into one of the great art historians of the twentieth century.

One of his central theses is that the arts of all cultures are rooted in the worship of a Supreme Being. Aesthetic experience is spiritual experience and vice versa. The artist works within a canon of aesthetic rules but, in order to create a valid work of art, he must enter into meditative empathy with his theme and make room for its spiritual essence. Becoming one with the theme, the artist acts as anonymous translator, a humble servant of the Divine. He does not reproduce nature but a spiritual essence, which arises within through a contemplative union with a theme.

This view of art still holds in the East and had been known in the West before the Renaissance. Meister Eckhart's writings on art eloquently prove the former presence of

Eastern aesthetics in the Scholastic mind of the Middle Ages. Eckhart states, for example, that "to be properly expressed a thing must proceed from within, moved by its form; it must come, not in from without, but out from within" or, even more clearly,

> …the form, idea, or semblance of a thing, a rose, for instance, is present in my soul, and must be for two reasons. One is because from the appearance of its mental form I can paint the rose in corporal matter, so there must be an image of the rose-form in my soul. The second reason is because from the subjective rose-idea I recognize the objective rose although I do not copy it.[289]

Cage adopted Eckhart's spiritual view in his composition theory and this is the source of his idiosyncratic view that musical form properly can only belong to the heart.[290] Form exists only within, and should not be confused with a manifestation in the physical world of sound. But AKC's reference to the aesthetics of the Middle Ages does not imply he blamed modern technologies or science; rather, he saw the West's decline originating from a lowered conception of human dignity and an insensibility to real values. In the West art has become a luxury instead of a necessity and artists were required to pose as prophets rather than being accorded a respected life among equal men of all professions. The distinction between artist and workman did not exist in the East, where it was taken for granted that every man should be an expert in his vocation.[291]

Upon closer inspection AKC offered more than an introduction into the aesthetics of Asian Art. He proposed an aesthetic of universal scope, rooted in man's spiritual experience and culminating in his dictum "Art is religion, religion art, not related, but the

[289] See pp. 75–76 of "Meister Eckhart's view of art" in Ananda Kentish Coomaraswamy, *The Transformation of Nature in Ar*t (Cambridge: Harvard University Press, 1934), pp. 59–96.

[290] As an aside, this excerpt also exemplifies nicely why Umberto Eco turned semiotician, after an initial career as a medievalist.

[291] See "Theory of Art" in Coomaraswamy, *The Transformation of Nature in Art*, pp. 1–58.

same."[292] He therefore criticized the Western notion of *l'art pour l'art*, the notion of the individual genius and, in general, a European lack of thinking in terms of unity.

Not by accident, many of AKC's views were shared by the Bauhaus under Walter Gropius. In his English boyhood years at the end of the nineteenth century, AKC was greatly influenced by Victorian art critic John Ruskin and William Morris's anti-industrialist, back-to-nature writings.[293] The same men are quoted as forerunners of the Weimar Bauhaus:

> In der zweiten Hälfte des 19. Jahrhunderts begann aber eine Protestbewegung gegen die verheerenden Wirkungen der Akademien. Ruskin und Morris in England, van de Velde in Belgien, Olbricht, Behrens (Darmstädter Künstlerkolonie) und andere in Deutschland, endlich der 'Deutsche Werkbund', suchten und fanden bewußt erste Wege zur Wiedervereinigung der Werkwelt mit den schöpferischen Künstlern.[294]

Thus Cage found in AKC an aesthetician close to the utopian ideas of the Bauhaus, who led him to a deeper understanding of art and its utilitarian function in society. Many of his Bauhaus friends, abstract film maker Oskar Fischinger for example, may have been acquainted with AKC, since he expressed so well the Bauhaus's spiritual aims and its critique of Western culture. For Cage, AKC was an important contributor on the path towards a communitarian life style in a new society. The famous *Cathedral of the Future* woodcut on the first Bauhaus manifesto of 1919 symbolized this new lifestyle with its

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[292] Ibid, p. 62.

[293] Roger Lipsey, ed., *Coomaraswam*y (Princeton, N.J.: Princeton University Press, 1977). Vol. 3. His life and work.

[294] "The second half of the nineteenth century saw the beginning of a protest movement against the devastating influences of the academies. Ruskin and Morris in England, van de Velde in Belgium, Olbrich, Behrens (Darmstadt Artists Colony) and others in Germany, and, finally, the Deutsche Werkbund, all sought and created first inroads towards a reunion between creative artists and the industrial world." Walter Gropius, "Idee und Aufbau des staatlichen Bauhauses Weimar," (<http://www.kunstzitate.de/bildendekunst/manifeste/bauhaus_1923.htm> accessed on 3 June 2003), original document from 1923.

rocket-like building rising boldly towards the sky: social, technological, and spiritual—but not religious, academic, or industrial.

CHAPTER 3: THE TRANSATLANTIC SCHOOL 1949–52

In the beginning of this chapter Cage's reports from an Italian International Music Festival reflect his expertise in musical aesthetics in early 1949, prior to his encounter with Boulez. The second section shows Boulez becoming a 'Cage expert' by introducing Cage and his music to Parisian elites. Cage performed his *Sonatas and Interludes* for a select audience of hundred Parisians and also gave a prepared piano recital at the Paris Conservatory for the students of Messiaen. The latter described his encounter with Cage's timbre music as one of the most important musical experience of his life and, only a few weeks thereafter, composed *Mode de valeurs*. The encounter with Cage influenced not only Messiaen, but also other composers of importance for later developments in timbre composition.

The discussion then focuses on the repercussions of the intense friendship between Boulez and Cage between late summer 1949 and December 1952. Their friendship led to the formation of the Transatlantic School: a small, but innovative coterie of composers interested in a novel approach to composition and sound. The term school indicates a common aesthetic, philosophical, and experimental outlook, as well as a mutual exchange of ideas and promotion of music. Superficially, the approaches of Cage and Boulez or Feldman and Goeyvaerts seem to offer nothing but differences. In reality, even apparent opposites, as demonstrated by the case of Boulez and Cage, have more in common between one another than with the composers of the establishment. The Transatlantic School started out modestly, as a friendship between Boulez and Cage but, by the end of 1952, two small groups of young composers had formed on each side of the Atlantic Ocean with a subjacent sense of common purpose and goal.

Initially we depart from the radical, uncompromising aesthetics of grace, immediacy, and active ignorance: Bauhaus artist Klee's ideal of a repeated birth into the ignorance of a child was often shared by the pioneers of the Transatlantic School. There was also a shared underlying philosophic concern to explore all possible relationships between law and freedom, rational systems of the mind and irrational choices of the heart. Cage's universal theory of music had introduced silence as prime evidence to argue the necessary primacy of temporal over melodic or harmonic structure.

The origins of the Transatlantic School are seen in the activities of Cage and Boulez on both sides of the Atlantic; both promote the music and ideas of the friend in each other's land. We examine the major projects of Boulez and Cage during the period 1949–52. In *Polyphonie X* Boulez set up a parade of *thirteen* pitch series—partly twelve-tone, partly twenty-four-tone—to subsequently 'pulverize' them by a network of forty-nine rhythmic patterns and forty-nine instruments. The *X* symbolized structural polyphonies that ultimately were designed to create a sonic delirium equivalent to Joyce's literary works. While we noted above that in Classic timbre serialism Boulez approached raw sound through athematicism, we now see in his use of forty-nine instruments his attempt to extend structural planning to the complex dimension of timbre. Boulez and Cage sought in musical complexity a balance of the mind and the heart, a quest best represented in the term 'constellation'. The term appeared in Mann's 1948 portrayal of dodecaphony in *Doctor Faustus*, Mallarmé's poem "A Toss of the Dice" and the sixty-four ideograms of the *Book of Changes*.

In 1949 Cage had returned to New York, deeply impressed by Boulez's music, and soon set out to approach a more complex way of composing. His String Quartet was

followed by a host of innovative works, culminating in the *Music of Changes*. Here Cage reached a hitherto unequaled level of complexity: he developed multi-leveled chart systems that closely paralleled Boulez's work on *Polyphonie X*. Finally, Boulez joined Cage in issuing calls for experimental music research centers, seeking to understand better the quantities that lead to genuine multiplicity.

Cage Surveys Modern Music

Around March 1949 Cage embarked in his second trip to Europe accompanied by Cunningham. In April and May he attended the Twenty-Third International Festival for Contemporary Music in Palermo (22–30 April) and the First International Twelve-Tone Congress in Milan (4–7 May). His 1949 review of those events for *Musical America* not only constitutes a valuable glimpse into the European contemporary music scene of the late 1940s, but it also shows Cage as a highly knowledgeable, critical, and self-confident commentator with clear aesthetic preferences.[295] With noticeable enjoyment and humor, Cage critically reported that the composers at the dodecaphonic Congress "found talk about the twelve tones more engaging than the twelve tones themselves" and that the Congress "wisely voted itself out of existence on the fourth day."[296] Webern's Piano

[295] All unmarked quotations in this section are from John Cage, "Contemporary Music Festivals Are Held in Italy", *Musical America* (June 1949): 3, 32–33. Reprinted in Richard Kostelanetz, ed., *John Cage, Writer: Previously Uncollected Pieces* (New York: Limelight Editions, 1993), pp. 45–50.

[296] Among the twenty composers attending the Milan Congress: heavy hitters Leibowitz and Rufer, the excellent Belgian composers Souris and Froidebise, as well as Italy's Bruno Maderna. Cage, one of the few composers present who actually studied with Schoenberg, probably misunderstood a thing or two here, since the Congress did not "vote itself out of existence." The second Congress took place in parallel with the Darmstadt Summer School of 1951. For more, see Gianmario Borio and Herman Danuser, eds., *Im Zenit der Moderne* (Freiburg: Rombach, 1997), Vol. 1, pp. 176–83. Cage probably communicated some Kafkaesque impressions of that Milan Congress to Boulez later on in Paris, and Boulez may have had those descriptions on his mind when he assailed the futility of congresses in the following, colorful terms: "Organisant des *congrès*…faussement doctrinaires, absurdement conservateurs, ils trônent, en stupides replets, pour la plus grande gloire de *l'avant-garde*." Boulez, "Eventuellement...", p. 264. ("Organizing their conferences..., falsely doctrinaire, absurdly conservative, they sit enthroned like fat idiots to the greater glory of the avant-garde.") Boulez, *Stocktakings from an apprenticeship*, p. 111.

Variations, op. 27, "known for some time to possess high quality" and played "beautifully and sensitively" by Marcelle Mercenier were the highlight of the Milan Congress.[297] It is worth noting that Cage depicts Webern's work as if it were a classic, *known for some time*. He may have added this bit of subversive exaggeration to elicit in the readers of *Musical America*—who were of course by-and-large *not* familiar with Webern in 1949—a dim feeling of running behind their times and, therefore, give them all good reasons not to miss the next opportunity to hear a work by Webern.

At the Palermo Festival the fourteen "*nuovo-dodecaphonique*" composers were unable to impress Cage.[298] He found kinder words only for two experimental works: Maderna's Concerto (1948) for two pianos, percussion ensemble and harp and Yvette Grimaud's *Three Pieces* for voice, Ondes Martenot, and percussion. Interestingly, Cage accorded more space to Grimaud's work than to any other composition from the festival, even quoting at some length from her program notes:

> The essential idea of the one-fourth-non-tempered-tune-songs rests on one cell, be it rhythmic as well as melodic, which engenders all together, and sometimes two songs, cells in constant transformation and development.[299]

Since Grimaud was a close friend of Boulez, her work afforded Cage an opportunity to learn about recent serial techniques of the Parisian avant-garde. Boulez also shared her quarter-tone aesthetic; we mentioned above various premieres of Wyschnegradsky's cutting-edge quarter-tone works between 1945 and 1953.[300] Regarding Grimaud's music, Cage noted the timbral possibilities of the Ondes Martenot were not fully employed and

[297] Belgian pianist Mercenier premiered Boulez's flute sonatina in Brussels 1947 (at a private venue with flutist Jan van Boterdaël) and Stockhausen's piano pieces in Darmstadt 1954 and 1955.
[298] The term "nuovo-dodecaphonique" is Cage's bilingual word creation. See Cage, "Contemporary Music Festivals", p. 3.
[299] Cage, "Contemporary Music Festivals", p. 32.
[300] See page 72.

criticized her overly timid mood and tendency to focus too much on minute details. Beyond Grimaud and Maderna, Cage reviewed favorably Vladimir Woronoff's *Sonnet to Dallapiccolla* ("a wide variety of piano sonorities" and a "rhythmic structure derived from…perceptive study of versification") and Mátyás Seiber's *Fantasia Concertante* that "avoids the usual twelve-tone sound by freeing the accompaniment from the tone-row when the soloist is confined to it, and vice versa." Thus Cage distinguished between works that experiment with new sounds, and works that attempt innovative structural approaches, showing attention to the aesthetics of both micro- and macrostructure.

From the circle of Boulez's friends (or former friends) Nigg's Variations for piano and ten instruments stood out negatively. The public reacted with "general hissing" after his music had proceeded from "relative simplicity to thorough complexity with a ruthless absence of humane feeling." Another comrade from Messiaen's *les flêches* fared little better, albeit less by his own doing. Martinet's orchestral work *Orphée* "did not survive performance" by the Orchestra of the Italian radio, most notable for its "characteristic performance weaknesses of rhythm, sonority, and intonation."

The 1949 ISCM festival in Italy was fraught with organizational problems, which must have been disappointing to some of its participants. Nevertheless, not all of the concerts ended in a debacle; Cage ended his perceptive report of the chaotic festival on a strong note:

> Marya Freund, at the age of 74, spoke-sang this work [*Pierrot Lunaire*] accompanied by an extraordinary Italian ensemble directed by Pietro Scarpini. This performance …was such that anyone who heard it will never forget it. A member of the audience who came all the way from Australia said that she understood then why she made the long voyage. This reporter found himself trembling for some time afterwards and noticed others weeping. The hermetic

> nature of this work was given on this occasion an almost oracular character, so that one seemed to be hearing a special and profoundly necessary truth.[301]

It must have been a remarkable performance indeed. Freund had performed *Pierrot Lunaire* since the 1910s and was on her final European tour that year, reaching her widest audience yet through broadcasts by the BBC and Radiodiffusion Française.[302] It is amusing to speculate what Cage would have reported, had he participated at the Darmstadt Summer School (19 June to 10 July 1949).

The Tezenas Lecture-Concert

From Italy Cage traveled to Paris, where he planned to do research on Erik Satie. During his last Paris visit, Virgil Thomson had heard Boulez perform the First Piano Sonata at the house of the Martenots and he had advised Cage to contact the promising young French composer.[303] Since Cage spoke excellent French, they could communicate without problems. The two men spent much time together over the next couple of months and became very close friends.[304] Cage, thirteen years older than Boulez, had a firm aesthetic position as an emerging avant-garde composer in New York. Rooted in the abstract art and experimental approach of the German Bauhaus, Cage had discovered

[301] Cage, "Contemporary Music Festivals", p. 33.

[302] Goeyvaerts remembers: "I had heard her [Freund] in a radio broadcast of *Pierrot*. She interpreted the 'Sprechstimme' with quite incredible subtlety, totally different from the highly dramatic Erika Wagner who took the part in Schoenberg's own version." GOEYVAERTS 1994, p. 37.

[303] See p. 48 fn. Fehler: Verweis nicht gefunden.

[304] See also p. 48 fn. Fehler: Verweis nicht gefunden. Beyond inferences that can be drawn from the Boulez-Cage correspondence, I am aware of two secondary sources of information on their common activities during this six months period. Peyser states: "They saw each other often during the next few months. […] Walking along the Seine, Boulez and Cage exchanged ideas. In each other's rooms they ate and drank." PEYSER 1976, p. 60. The second source is Revill, who suggests that Cage rented an apartment prior to his trip to Italy in April and May. Revill's account paints the relationship between Cage and Boulez in a very compact and reduced way; in addition, he introduces a number of errors, such as, for example, his suggestion that Pierre Schaeffer was carrying out 'tape music' experiments in 1949. An additional detail of interest: Thomson recommended Cage should contact both Nigg and Boulez. Revill, *The Roaring* Silence, pp. 99–101.

Webern slightly before Boulez. He had recently formulated a comprehensive and strictly logical composition theory that promised to solve the problems besieging Western music. Cage had brought many scores and recordings of his music, and hard-to-please Boulez was fascinated: he became the leading Cage specialist in Paris within weeks. The records Cage brought to Paris included the *First Construction in Metal* and the virtuoso *Three Dances* for two prepared pianos.

Over the next couple of months, Cage became familiar with the closer circle of Boulez's friends, including Bernard Saby, Pierre Joffroy, Armand Gatti, Yvette Grimaud, Boris de Schloezer, Marina Scriabine, and Pierre Souvtchinsky. Naturally Cage also met many other people not directly related to the circle of Boulez. Thomson had lived in Paris for fifteen years and, as a life-long Satie advocate, gave Cage helpful hints and contacts for his research project. For example, Cage met the Parisian composers André Jolivet and Henri Sauguet, who told Cage of Satie's composition *Vexations*.[305] Although Cage initially dismissed the possibility of performing the piece—"True, one could not endure a performance of *Vexations*... but why give it a thought?"—he actually organized its world premiere in 1963, some seventy years after its composition.[306] Cage also met Pierre Schaeffer and Pierre Henry.[307] Many of Cage's New York friends came to Paris that year. Pianists Robert Gold and Arthur Fizdale performed the virtuoso *Three Dances* for two prepared pianos at Salle Gaveau on 24 June, and Cage and Cunningham

[305] Headed by the infamous instruction: "To play this motif 840 times in succession, it would be advisable to prepare oneself beforehand, in the deepest silence, by serious immobilities."

[306] Cage's premiere was shared between 12 pianists, including Cage. Richard Toop was the first to complete a 24 hour solo performance of the work at the London Arts Lab on 10 and 11 October 1967.

[307] More on these encounters in chapter four, "Radio Research And Concrete Music, 1948–51" below.

performed music and dance at two venues in June and July.[308] But most important of Cage's 1949 visit in Paris were his encounters with Boulez, Messiaen, and Schaeffer. We will first outline what Boulez and Messiaen may have learned from Cage, and later look at Cage's reactions to Boulez; the more elusive relation between Cage and Schaeffer will be addressed in chapter four.

Sometime after Cage and Boulez first met around March 1949, Souvtchinsky and Boulez organized a lecture-concert at Suzanne Tezenas's exclusive Paris salon. Here Cage performed his *Sonatas and Interludes*, on a deliciously prepared Bechstein, for an audience of about a hundred artists and musicians in June 1949.[309] In a preconcert talk, Boulez summarized the major steps in Cage's musical career over the past fifteen years. He closely followed the lines of the biographical lecture Cage had held in the previous year at Vassar College.[310]

Then Boulez highlighted Cage's critique of Schoenberg. After the manifest demise of functional tonality since Wagner and Debussy, an alternative method for creating musical structure was needed. Schoenberg's twelve-tone row was unfit to create musical structure. Moreover, the acoustic microstructure of traditional instrument timbres

[308] Cunningham's dance performances took place on 10 June at Jean Hélion's Studio and on 11 July at Théâtre du Vieux Colombier. Cage accompanied him with *A Valentine out of Season* (1944, premiered 1948) and the first and last movement of *Amores* (1943). Both works are for prepared piano, solo. Merce Cunningham, "Repertory: Chronology of Works" (<http://www.merce.org/repertory_chronology.html> accessed on 29 August 2002), original document from 1995 and André Chaudron, "John Cage Database" (<http://www.johncage.info/> accessed on 1 July 2003).

[309] PEYSER 1976, pp. 61–62. In his preconcert talk, Boulez announced that the American pianists Fizdale and Gold would perform Cage's *Three Dances* at the Paris Salle Gaveau on 24 June 1949. Returning from the Milan Conference ending on May 7, Cage and Boulez might have spent some time getting to know each other before the concert was organized, so early to mid-June 1949 seems a very likely date. NATTIEZ 1990, p. 48. An anecdote in *Silence* describes the arrival of Cage and Cunningham in Rotterdam and mentions travel plans through "Holland, Belgium, and then France" suggesting they may have traveled through France on their way to the Italian contemporary music festivals. Cage, *Silence*, p. 270.

[310] Cage, "A Composer's Confessions". I based my own account on the same document. See fn. Fehler: Verweis nicht gefunden.

perfectly suited the needs of tonal music and its non-democratic hierarchies but, for the same reason, these older music instruments were woefully inadequate for the creation of modern music. A new means to create large-scale musical structure could only be based on time lengths, never on harmony. These large-scale structures can be established *a priori* from impersonal, purely formal numerical proportions.[311] There was an urgent need to invent new musical resources such as, for example, instruments that explore the domain between noisy and pitched timbres. On the level of the acoustic microstructure, composing needed to become experimental, and this led to the invention of the prepared piano. Its timbres are determined individually by its four acoustic characteristics:

> …Cage cherche quels objets pouvaient rester stables entre les cordes d'un piano, quels étaient les différents matériaux à employer, de quelle façon les placer; il en déduisit la nécessité de modifier la durée, l'amplitude, la fréquence et le timbre, soit les quatre caractéristique d'un son. […] *De cette façon ayant changé les quatre caractéristiques du son, on se trouve devant une individualité nouvelle pour chacun d'eux.* Il est évident que chacun peut exercer son ingénosité à enrichir de nouvelles possibilités ce domaine encore vastement inexploré. John Cage, lui-même, varie la préparation de ou des pianos pour chaque nouvel ouvrage qu'il entreprend.[312]

Cage—and not Messiaen—introduced parametrical thinking in Europe. Boulez's lecture leaves no doubt as to who originated the European pointillists' desire to compose consciously the inner sound. The individuality of each sound and the aim to create

[311] Boulez points out that Cage based the form of his *Sonatas* on the two repeated sections of Scarlatti's pre-classical sonata. In setting the first and second section in stark contrast, Cage refers to the two themes of the classical sonata. To avoid any parallelisms, the dodecaphonic principle of permanent variation is broadened to "perpetual invention". This eliminates the sonata's development section, since now everything is developing or everything has become a theme. Extreme freedom of invention contrasts with an a priori immobile time structure and a fixed set of timbre-sounds.

[312] NATTIEZ 1990, p. 45. ("...Cage tried to establish what objects could remain stable between the strings of a piano, what were the materials to use and how they should be placed; from this he deduced the necessity of modifying duration, amplitude, frequency, and timbre—in other words, the four characteristics of a sound. [...] *The four characteristics of a sound having been altered in this way, each one is given a new individuality.* Obviously, anyone can exercise his ingenuity to enrich this as yet largely unexplored realm with new possibilities. John Cage himself varies the preparation of the piano with each new work.") NATTIEZ 1993, pp. 29–30.

unique and novel sound worlds for each work later became known as the essence of pointillist aesthetics.[313] Cage's desire to free perception from culturally imposed concepts already had become manifest in the 1930s, when he formulated an alternative atonal composition method for twenty-five tones, rather than twelve. In extending the concept of the tone row over the space of two octaves, Cage treated octave equivalence more like an intellectual concept and register, once again, became a non-alienable property of each individual tone. The prepared piano was not only a hybrid between percussion and pitch instrument, but also the precursor of the electronic studio and synthetic timbre composition; Cage had turned the piano into an acoustic laboratory capable of a wide, refined spectrum of complex timbres.

At this stage timbre experimentation still had an alchemical flavor, since it required as much intuition and creative thinking as excellent hearing and fine aesthetic judgment to define and synthesize each timbre individually. Nevertheless, we would argue that the non-seriality of Cage's timbre compositions is far less a significant musical attribute than Cage's thinking in acoustic parameters. On the level of timbral microstructure, the use of generator series (with reasonable complexity, i.e. more than three or four elements) will yield results indistinguishable from timbres generated by an intuitive method. Rather, musical outcome will depend on the selection and structuring of timbre domains: after defining extreme values in each acoustic (or perceptional) dimension, the composers must operate a number of scale degrees within each dimension's continuum. Moreover, Boulez's concept and use of 'defective' series demonstrates that the notion of a series as

[313] In his closing remarks that day, Boulez wondered if the pre-compositional fixation of timbres might lead to a global neutralization in longer works. He anticipated the result of a statistical form. He repeated this remark two years later, in his article "Eventuellement...".

'complete' (without holes) or 'chromatic' is academic. This notion is derived from a uniquely linear interpretation of Schoenberg's dodecaphony and of little validity in synthetic timbre serialism.[314] A series of timbres generated from non-equal steps and arbitrary extremes for each inner dimension of sound (i.e. not defined *a priori*, such as the octave 'space' in dodecaphony) is virtually indistinguishable from a set of timbres generated with Cage's 'alchemical' manner of working. A similar observation could be made in regard to the use of secondary cell structures, built on primary row fragments of series that operate within the inner dimensions of sound.

When Cage writes for traditional instruments, Boulez noted, he translates the prepared piano's hybrid noise-pitch timbres into the domain of the orchestra by writing a chord instead of a note. The notes of the chord are treated like elements that project the microcosmic timbre elements into a higher plane. The chords lack harmonic function in the traditional sense; rather, they are exteriorized timbre harmonies:

> ...: John Cage écrira un accord à la place d'une note, cet accord n'ayant aucune fonction harmonique, étant essentiellement une sorte de résonateur-amalgame de fréquences superposées.[315]

Cage first used such aggregate chord synthesis techniques in the orchestral music for the 1947 ballet *The Seasons*. Fascinated by the aesthetic appeal of the Cagean 'frequency complexes', Boulez attempted their formalization in his chord multiplication techniques of the early 1950s. Similarly, Stockhausen applied Cage's micro-macrocosmic argument in his 1953 analysis of Webern's Concerto, op. 24. He read Webern's grouping of row

[314] In fact such a notion is not as much a remnant of dodecaphony than of traditional melodic thinking. In the vertical incarnation of a dodecaphonic series there is no linear sequence. In a chord of four notes from a dodecaphonic pitch series, the pitches occur simultaneously and turn into non-ordered sets.

[315] NATTIEZ 1990, p. 46. ("... John Cage writes chords in place of chords, each chord having no harmonic function but acting essentially as a resonance-amalgam of superimposed frequencies.") NATTIEZ 1993, p. 30.

fragments as an attempt to synthesize timbres in instrumental music: electronic music *avant la lettre* but also, we note, Cage's practice since 1947, and Stockhausen had learned about Cage's music and theories only months prior to writing his Webern analysis, directly from Boulez.

Cage demonstrated with his ballet *The Seasons* a composition method that operated organically out of the timbral microstructure to generate elements of the macrostructure. In combination with the multi-leveled rational principles of his temporal structuring, this was a very comprehensive method of composition. One can distinguish two types of 'extended serialism'. On the one hand, serialism can be extended to more than one musical dimension, applying series to pitches and rhythmic cells. We saw this type of 'extended serialism' in Boulez's *Notations*, his Second Piano Sonata, and his String Quartet. On the other hand, we can extend serialism in a vertical sense. The conscious composition of timbres best characterizes the second phase of serialism after 1950. This is so crucial to 'new' serialism, that electronic music became the purest representation of serial music in the 1950s. Our suggestion is to use the term 'synthetic timbre serialism'. If one fails to differentiate between horizontal and vertical varieties of extended serialism, the two types of 'extended serialism' become confusing. The essential question to ask, then, becomes whether the composer spent a significant amount of his time to compose his material, that is, the timbral microstructure. This is similar, but not equivalent, to the work with musical motives in pitch or rhythm that we saw in Boulez's String Quartet. If there is conscious composition and effort to compose the material, we can speak of 'synthetic timbre' composition. Furthermore, Cage showed how micro- and macrostructure can be related organically, and the composers of synthetic timbre

serialism showed the same concern. The search for principles relating to both micro- and macrostructural composition stimulated experimental research in the 1950s and beyond. Cage not only opened the doors to the world of timbre; he also presented organicist music that extended compositional thought in a vertical sense, both into and out of the microstructure.

What Cage demonstrated with his masterwork for prepared piano was far more comprehensive than any specific syntactical innovation in the higher echelons of musical language. The material of music itself, including the instrument most intimately associated with Classical and Romantic music, was emphatically put into question. Accompanied by a lucid exposition of the rationale for the technique, the audience witnessed not simply the creation or demonstration of a new music instrument; rather, the transformations taking place within the body of the pianoforte symbolized the sublation of Classical and Romantic music. Although the piano remained visually the same, in fact it had been turned into an acoustic laboratory for the exploration of sound and the musical material in general. Amalgams of resonances, non-hierarchical frequency complexes, pitch-noise hybrids: in a stroke of genius these timbral explorations became associated with the Classic and Romantic instrument *par excellence*. Nothing could have symbolized any better the end of an era.

Messiaen's *Mode de Valeurs*

Messiaen had been introduced to Cage by Boulez. He asked Cage to demonstrate the prepared piano for his analysis class at the Conservatory in the spring of 1949. The students thus witnessed a live performance of a number of pieces from Cage's *Sonatas*

and Interludes and, in addition, Boulez and Le Roux played the recording of Cage's *Three Dances* for two prepared pianos.[316] In mid-June 1949, Messiaen left Paris to attend the Darmstadt Summer School (19 June to 10 July 1949) and there he composed *Mode de valeurs et d'intensités*. (The score's cover specifies 'Darmstadt 1949.'[317]) He stayed only for the first ten days and, at the end of June, left Darmstadt for Massachusetts, where he participated in the Tanglewood Summer School. In other words: Cage performed his *Sonatas and Interludes*, one of his most accomplished timbre compositions, prior to 19 June 1949 in Messiaen's class and Messiaen, only weeks (and possibly days) after hearing Cage's music, wrote *Mode de valeurs*. Messiaen's initial reaction to Cage's music was reported by Goeyvaerts, one of Messiaen's students in the spring of 1949. When describing his experience of Cage's music, Messiaen resorted to the following comparison:

> Messiaen zegde dat dit zijn sterkste muzikale ervaring was sinds hij de *deçî-tâlas* van Carngadeva had ontdekt (het theoretisch werk uit de 13de eeuw in India, dat grotendeels het ritmisch denken van Messiaen heeft geïnspireerd).[318]

Since the rhythmic patterns of the Indian theorist formed the foundation of the musical language Messiaen had been developing since the 1930s, the comparison hardly could have been any stronger. Clearly, Cage and Messiaen shared the focus on both timbre and rhythm, but nothing could have expressed the seminal impact of Cage's music better than

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[316] Boivin suggests the performance took place in the spring of 1949. However, the data collected on the exact content of Messiaen seminars does not include a reference to this Cage performance. BOIVIN 1995, pp. 96, 436. Classes ended in early June and the new academic year 1949–50 began in October. Since Cage had left Paris in August or September; this performance must indeed have taken place in the spring of 1949. Revill also places Cage's departure before the fall: "In the late summer... on the eve of his return home ... [a] farewell party took place...." Revill, *The Roaring Silence*, p. 101.

[317] Schweitzer, who provides one of the best analyses of *Mode*, casts doubt on this 'Darmstadt 1949' dating, because Messiaen stayed only 10 days and had a very busy concert and lecture program. See Klaus Schweizer, "Olivier Messiaens Klavieretüde 'Mode de valeurs et d'intensité'," *Archiv für Musikwissenschaf*t 30 (1973), pp. 128–29.

the comparison with Messiaen's discovery of Carngadeva's *deçî-tâlas*. The discovery of Cage's music must be related to Messiaen's subsequent shift in composition technique, most emphatically represented by his piano etude *Mode de valeurs*. Cage's influence on this work partly may have escaped notice, because Goeyvaerts's testimony was published in Dutch: it was most readily available only to a smaller circle of scholars in Belgium and the Netherlands. Given the later developments in the 1950s, few people would have had reason to ask Messiaen directly about his first encounters with Cage.

On the other hand, Messiaen's appraisal of *Mode* changed over time. First, in 1952, he watched the piece achieve cult status and, later, it secured his place in music history in an almost annoying sense: for many commentators Messiaen's historic contribution to music primarily became associated with this single work and, to probably an unjustified extent from the composer's point of view, *Mode* appeared to weigh more than all his other music combined. Maybe this is the reason why, in his older age, Messiaen took on a distinctly critical view of *Mode*, showing little regard for its musical qualities:

> Cette musique a peut-être été prophétique, historiquement importante, mais, musicalement, c'est trois fois rien…[319]

[318] N.B. Most likely Messiaen was among the audience in the Tezenas lecture-concert, which probably took place pior to this class presentation. Karel Goeyvaerts, *Autobiografi*e (Leuven (Belgium): Centrum voor Muziek, 1983), p. 42. ("Messiaen said that this was his strongest musical experience since he had discovered Carngadeva's *deçî-tâlas* (the theoretical work from the thirteenth century, which for the most part inspired Messiaen's rhythmic thinking)"). The published English translation of this text replaces the 'strongest experience' with the 'most riveting experience' and replaces 'said' with 'claimed'. "Messiaen claimed that this was his most riveting musical experience since he first discovered Carngadeva's *deçî-tâlas*." GOEYVAERTS 1994, p. 40. Both replacements of the published English translation can lead to misinterpretations. For example, one might read a notion of politeness in the verb 'claimed', suggesting, perhaps, that Messiaen made the remark to please his seminar guest Cage. This notion is altogether absent in Goeyvaerts's text, who simply reports what Messiaen *said*. The Dutch language distinguishes between 'claimed' and 'said'. Therefore we provide here the word-by-word equivalent of Goeyvaerts's text. In the 1950s, Messiaen continued to convey his closeness to Cage in his analysis class. Daniel Charles and Gilles Tremblay, Messiaen students during the 1950s, remembered that Messiaen spoke about Cage with *great admiration* and *warmth*. My emphasis. BOIVIN 1995, p. 337.

[319] Claude Samuel, ed., *Musique et couleur. Nouveaux entretiens avec Claude Samue*l (Paris: Belfond, 1986), p. 50. ("This music has perhaps been prophetic, historically important, but musically it is three times nothing...")

These comments, made almost forty years after the work's composition, demonstrate the need of keeping in mind when and in what context remarks are made. A later comment is not always wiser or truer than an earlier one, even if the idea of progress implicitly may suggest that this might be the case. We will show below an earlier period when Messiaen still remembered his initial enthusiasm about *Mode* and when he described its temporal strata as an illustration of Einstein's relativity theory.

Goeyvaerts's first-hand report of Messiaen's strong reaction to Cage's music of the prepared piano thus gives us a valuable key to an otherwise hidden and, in many ways, problematic period in Messiaen's musical career. Messiaen had many occasions to meet Cage in 1949: in spring, late summer, and again in December, when Messiaen returned to the United States to attend the premiere of his *Turangalîla* Symphony. Cage arranged a "big reception, dinner, and music" for Messiaen at his New York loft in December and, on that occasion, Messiaen talked to a number of American composers about his music and composition technique.[320] Messiaen does not appear to have spoken about *Mode* at that time, since Cage does not mention Messiaen's new pointillist style in his letters to Boulez. Before analyzing the musical connections between the *Sonatas and Interludes* and *Mode*, we must first point out Messiaen's awareness of musical dimensions, both on the macro- and microstructural level.

The idea of composing intermediate rational structures in the dimensions of pitch and rhythm was not new to Messiaen. In his 1942 *Technique de mon langage musical*, Messiaen already described pitch modes of limited transposability and non-retrogradable rhythms as analogs. His modality is secondary; aside from the fact that his modes are

[320] Cage, letter to Boulez, 17 January 1950, in NATTIEZ 1990, p. 76. For more details on this reception, see fn. Fehler: Verweis nicht gefunden.

often idiosyncratic and motivated by *La Jeune France's* aesthetic of the return to the human, it is more significant that he revived the medieval rhythmic modes and thereby created a (separate) second level of musical thought. How Messiaen combined pitch and rhythm structures was not cast in stone; in fact, he preferred rhythm over pitch as primary dimension of musical thought, an uncommon choice at that time. In addition, Messiaen had alerted to the serialization of other musical dimensions as early the spring of 1944 [recte: 1945] in his harmony class:

> A propos de ces deux oeuvres [Pierrot Lunaire, Lyric Suite], dont la seconde seule est sérielle et pour de courts instants seulement [*sic*], je m'étais vivement élevé, et à voix très forte, contre la tendance unilatérale qui poussait ces musiciens à prospecter dans le domaine de la hauteur sonore seulement. Et j'avais déjà prononcé les mots: 'série de timbres', 'série d'intensités', et surtout 'série de durées'; en tant que rythmicien, c'est ce qui me tenait le plus à coeur…[321]

His direct juxtaposition of "the unilateral tendency of composers to take only the pitch dimension into account" with the topic of serialism suggests that his comments were made in 1945 (rather than in the spring of 1944). The rise of dodecaphony in Paris began only in late 1944. One year later, by the spring of 1945, several of his harmony class students had begun to take lessons with Leibowitz, and thus Messiaen's comments would make sense not only in a more general sense, but also as his immediate reaction to the surging interest for dodecaphony. In addition, these comments show Messiaen's leadership in extending musical thinking to other musical dimensions around 1945. Nigg

[321] The dating "after the final exams in 1944" is found on the quoted page: GOLÉA 1960, p. 247. ("In regard to those two works [*Pierrot Lunaire*, *Lyric Suite*], of which only the second is serial for brief moments [*sic*], I rose to speak out loudly against the unilateral tendency of composers to take only the pitch dimension into account. And I already pronounced the words: 'series of timbres', 'series of intensities', 'series of durations'; as a rhythmician, this is what I held closest to my heart…") The first and last movement of the *Lyric Suite* are entirely twelve-tone. It is not clear whether Goléa is misquoting Messiaen in regard of the serial organization of the *Lyric Suite*, or if Messiaen simply regarded the non-serial portions of Berg's work as more significant.

and Boulez were not alone in attempting to extend serialism "horizontally" to other musical dimensions; Le Roux also experimented with duration and pitch series. He took part in the harmony class of 1945–46 and, during that year, briefly discussed his experiments with Messiaen.[322] Messiaen's role in the first extension phase of pitch-serialism in the time frame 1944–45 appears to be crucial; apart from the question if he made the above comments in 1944 or 1945, at least two of his 1945 students—Boulez and Le Roux—attempted to combine pitch and rhythm series. But it is equally evident that his suggestions only applied to the syntactical levels of music and did not bear on the sonic microstructure.

This, in turn, distinguishes first and second phase timbre serialism. In its first phase, the extension of serialism is "horizontal"; it applies only to syntactical levels of music. Second phase extended serialism is "vertical" in that musical planning also extends into the microstructure of sound. We suggest differentiating these two forms of timbre serialism by using the term 'Classic' whenever the note remains the smallest element of musical discourse. In timbre serialism's second phase the note becomes an intermediate structure. On the one hand, there is a mutual relation between the rise of timbre serialism and the eclipse of pitch as primary support of musical discourse. On the other hand, there is a mutual relation between the rise synthetic timbre serialism and the eclipse of traditional notation. Using new technologies for the exploration of the sonic microstructure, pioneering composers search for new musical 'atoms' and, in the process, redefine the modes of musical thought. This conscious shift to predestines the qualifier

[322] BOIVIN 1995, p. 109. Boivin comments: "The idea of generalized serialization was in the air." Of course both Boulez and Le Roux were members of *les flêches* and took classes with Leibowitz. They both attempted to combine series of pitches and series of rhythms. Le Roux was a prolific composer and in later years directed the French national orchestra.

'synthetic' to characterize the second phase of timbre serialism. On the one hand, Classic timbre serialism *excludes* by definition rational structuring of the timbral microstructure; on the other hand, synthetic timbre serialism *includes* rational structuring of the musical macrostructure.

Messiaen may have been aware of microstructural aspects of sound for more than a decade through his close association with Maurice Martenot, the 'engineer-scientist' of *La Jeune France*. Attempting to perfect the instrument of the future, Martenot may have discussed issues of timbre, envelope, tuning, and performance interface of his electronic instrument with Messiaen. Nevertheless, Messiaen never consciously composed inner musical dimensions in order to create timbres in the microstructure. This changed after the completion of his *Turangalîla* Symphony and a creative pause of several months.[323] From the summer of 1949 until 1952 Messiaen entered the most experimental phase in his life as a composer. The experimentation began with *Mode* and continued, somewhat

[323] Completed on 29 November 1948, the massive *Turangalîla* Symphony received its official premiere a year later in Boston on 2 December 1949. Messiaen was present at the premiere and, together with his performers Loriod and Martenot, spent time in New York following the premiere. Cage, having returned from his long stay in Paris around September or October, gave a party in Messiaen's honor at his Lower Manhattan apartment on the East River. Messiaen explained his music to a couple of composers at that occasion. Likely, Cage was joined by other perfect French speakers like Thomson and Varèse. The latter had returned to live in Paris between 1928 and 1933, so he and Messiaen would have known each other. Messiaen was monolingual and thus always dependent on translators when traveling abroad.

Commenting on Messiaen's visit, Cage writes: "Je l'aime pour ses idées rythmiques. Presque tout le monde était contre lui à cause de son esprit demi-religieux demi-Hollywood." Cage, letter to Boulez, 17 January 1950, in NATTIEZ 1990, p. 76. ("I love him for his ideas about rhythm. Nearly everybody was against him, because of his half-religious half-Hollywood spirit.") Cage's reference to Hollywood stems from Virgil Thomson's concert review of the *Trois Liturgies de la présence divine*. Thomson had made an unflattering comparison between Messiaen and Scryabin, "Their religious inspiration has no energizing force; it is drug-like, pretty-pretty, hypnotic, ..." He also spoke of 'commercial glamour' and a sound that cannot transport him further than the 'Hollywood cornfields'. Virgil Thomson, "Religious Corn," *New York Herald Tribun*e (19 November 1949), quoted from *A Virgil Thomson Reade*r (1981), pp. 329–30. Among professionals such severe criticisms of the *Turangalîla* Symphony—or the *Trois Liturgies*—were the rule rather than the exception, a fact which must have greatly disappointed Messiaen after his gargantuan effort of more than two years.

later and in less an emphatic manner, with *Cantéyodjayâ*.[324] This then raises the question of what prompted Messiaen to make this dramatic stylistic change.

Above we suggested that, at least in part, Messiaen reacted to Boulez's constructive criticisms after the premiere of the *Trois Tâlas*.[325] This reaction, however, was based on criticisms directed at Messiaen's macrostructural composition techniques. The catalyst for Messiaen's turn to microstructural composition, however, was Cage's exploration of the musical dimensions in his music for the prepared piano. Supported by the models of scientific acoustics, Cage had created sublimity in the timbres and rhythms of his *Sonatas and Interludes*. At a time when Messiaen's music earned criticism from all sides, Cage's organicist approach (based on timbre and rhythm, rather than pitch) and his logical argument for new timbres filled the besieged Messiaen with hope. In his universal theory of music, Cage delivered a compelling argument for the priority of time structure over pitch. This combination of musical talent, innovation in timbre, rhythmic precision, rational constructiveness, theoretical brilliance, and spirituality, impressed Messiaen as never before. When he traveled to the Darmstadt Summer School only weeks after his

[324] *Cantéyodjayâ* is a work of more than ten minutes duration in which the older style of the *Turangalîla* Symphony contrasts with several new ideas. Most noteworthy is a section entitled '*mode de durées, de hauteurs et d'intensités*' in which the music is composed according to the principles of *Mode de valeurs*: pitches and durations in three modes of eight elements (the smallest durations—32nd, 16th, and 8th notes—are multiplied 1–8 times), and an intensity mode with five elements.

The dating of *Cantéyodjayâ* is not entirely unproblematic. In the sleeve notes of its recording (Adès CD 203142) Messiaen stated 'Tanglewood 15 July–15 August 1948' as its composition date, adding that he began work on *Mode de valeurs* within weeks. Since the cover of the first publication of *Mode de valeurs* (Durand D.&F. 13.494) gives "Darmstadt—1949" as its date and Messiaen returned to Tanglewood in 1949, *Cantéyodjayâ* must also have been written in 1949, and therefore after *Mode*. Yvonne Loriod also confirmed 1949 as the composition date for *Cantéyodjayâ*; Peter Hill, ed., *The Messiaen Companio*n (London: Faber and Faber, 1994), p. 350. Unfortunately Simeone remained unaware of the contradiction and reproduced the dating error in his recent Messiaen catalog; see Nigel Simeone, *Olivier Messiaen: A Bibliographical Catalogue of Messiaen's Work*s (Tutzing: Schneider, 1998), p. 101. The most likely solution is: in the summer of 1949 Messiaen first composed *Mode*, then *Cantéyodjayâ*, then, within weeks, a second etude from the *Quatre études de rythme*. *Cantéyodjayâ* remained unpublished until 1953 and was premiered by Yvonne Loriod at the second *Domaine musical* concert, on 23 February 1954.

[325] See discussion of *Trois Tâlas* on p. 77 ff.

encounter with Cage, he mapped some of these influences and ideas into *Mode de valeurs et d'intensités*.

One of the specific problems Messiaen had to confront in composing for the full chromatic total was that, due to his synaesthesia, he perceived the full chromatic as desolate grayness. Cage's method of establishing a pre-compositional gamut stimulated Messiaen to test if the piano timbres could be composed in a way that would make pitch secondary or even tertiary. Seeing how Cage prepared each timbre of the piano prior to composing a work, Messiaen asked himself if one might accomplish a similar wealth of timbres without the use of screws, nuts, and bolts—simply by determining each timbre as one specific combination of pitch, duration, intensity, and articulation. Here he made the step into composing the microstructure. The timbres of *Mode de valeurs* thus can be read as a mapping of a Cagean gamut of thirty-six prepared piano timbres into the world of traditional notation. In our terminology, Messiaen's *Mode* is a work of synthetic timbre modality. Ingeniously Messiaen responded to the pressures from Boulez and, at the same time, formed an artistic response to the revelatory musical experience provided by Cage:

> L'ensemble du mode constituait une couleur, très différente des couleurs orchestrales ou couleurs de timbres, une couleur de durées et d'intensités, destinée à varier la grisaille des séries de sons et à susciter la recherche d'autre colorations.[326]

Color was the guiding term, and it is therefore instructive to regard the musical materials of Messiaen's *Mode* as a timbre gamut. The terms 'mode' and 'gamut' traditionally apply only to a single acoustic dimension as in 'Lydian mode' or 'hexachordal gamut',

[326] GOLÉA 1960, p. 251. ("The mode in is entirety constituted a color very different from orchestral or instrumental timbre; it was a color of durations and intensities, designed to vary the grey monotony of the pitch series and to stimulate research into other colorations.")

but Cage and Messiaen apply their term to a multi-dimensional acoustical timbre structure. Messiaen's *Mode* is complex and singular; it is not the sum of several modes in different dimensions, but a single mode of thirty-six timbres selected from a multi-dimensional sound continuum.[327] This is a natural consequence of working with timbre, which is a multi-dimensional phenomenon by its very nature. Messiaen followed the Cagean model of establishing a timbre collection from the multi-dimensional acoustic continuum *prior* to the actual composition. Aiming to drive out 'grayness', he maximally differentiated elements of the same pitch class in three other acoustic dimensions.[328] He drastically varied register, duration, intensity, and articulation in order to minimize pitch perception. The particular aim of maximal differentiation on the 'pitch-class axis' was characteristic merely for this particular composition: just as Cage invented a fresh gamut for many of his compositions, Messiaen might have prepared a new 'complex mode' for subsequent works. But while Cage had moved beyond the limits of traditional notation, Messiaen remained within them.

After having defined their pre-compositional gamuts, Cage and Messiaen employed their material with considerable freedom. There are no pitch series in *Mode* and Messiaen did not use any of the rhythm or pitch strategies elaborated in his *Technique de mon langage musical*. Instead, Messiaen adopted an intuitive composition technique, choosing 'freely' on the note-to-note level, and realizes a single structural idea. Messiaen, inspired by the ideas of Einstein, sought to portray the influence of speed on

[327] Messiaen left out 'pitches' and 'timbres' in the title of this work for purely didactical reasons, in fact these dimension are part of the complex mode. In *Mode*, pitch classes are of tertiary importance, timbres (articulations) are of secondary importance, and intensities and durations take the spotlight.

[328] There are several good analyses of *Mode de valeurs* available; TOOP 1974 is of particular importance. The most complete and perceptive analysis is by Klaus Schweizer. His comparison table by pitch class perfectly illustrates Messiaen's goal of maximal differentiation. Schweizer, "Olivier Messiaens Klavieretüde", p. 136.

our perception of events.[329] In that spirit, he created a counterpoint of three substrata that traverse the timbre continuum, each of them at a different speed.

The idea of the three substrata does not impose itself readily upon hearing the music; rather, the most pervasive impression of *Mode* is its strong pointillism—a dramatic style change for Messiaen. The music offers barely more than isolated tone-points lighting up in various intensities and at unpredictable moments. Messiaen consistently avoided rhythmical patterns and chord formations—precisely addressing Boulez's critic from the article "Propositions". Vertical constellations even become irrelevant to the ear as a multitude of unusual rhythmic and dynamic changes focus our attention on the activities of isolated tone points. The work sublates the difference between horizontal and vertical because the only formative law of its organization on the level of musical syntax is tone-point differentiation along one of three temporal strata. Theoretically, the medieval motet was built in similar temporal strata, but the maximalist tone-point differentiation created multiple alternative linearities and, in addition, Messiaen did achieve the planned strong sense of timbre individuality. It appears that, in both senses, *Mode* corresponded more with Einstein's relativity theory than with the layer architecture of the medieval motet.

The most surprising aspect of *Mode*, perhaps, is that the music appears to be free from human influences, momentary feelings or decisions. This objective Zen quality was probably one of the major reasons why *Mode* quickly achieved cult status among many post-war composers, but this happened far later than the work's early composition date of June 1949 might lead us to suspect. Many steps of historic relevance were taken without

[329] GOLÉA 1960, p. 250. More than 25 years later Messiaen had forgotten this enthusiastic analogy with ideas Einstein's relativity theory and deprecated *Mode de valeurs*, thereby illustrating how—in the mind of a composer like in anybody else's, perspectives may drastically change over time. See also fn. Fehler: Verweis nicht gefunden above.

knowledge of *Mode*, as we will see in more detail below. Ending his Parisian studies in the summer of 1950, Goeyvaerts stated that "Messiaen had never spoken about his work [*Mode*] in his lectures."[330] When he developed a static variety of synthetic timbre serialism, he lived in Belgium and had no knowledge of *Mode's* existence. Messiaen first discussed *Mode* in his analysis class in 1952; among his students we find Fano, Stockhausen, and perhaps Xenakis.[331] Boulez learned of *Mode* in 1951. Since we now established Cage's influence on this composition, we would like to explore in a differentiated manner what exactly might have been new for Boulez when he first saw *Mode*. Boulez's grasped the importance and significance of microstructural composition techniques as early as 1949 and, by taking a closer look at the communications between Cage and Boulez, we can put Messiaen's contribution to synthetic timbre serialism in perspective.[332]

Cage, Boulez, and Klee

Having read Cage's "Raison d'être de la musique moderne", replete with its discussion of the spiritual functions of music and reference to a Christian mystic, Boulez

[330] Goeyvaerts left Paris in the summer of 1950 and began teaching in Belgium in the fall. Goeyvaerts stated that "Messiaen had never spoken about his work in his lectures." This fact is not surprising, considering *Mode* was only published on 27 November 1950 and premiered in North Africa a short time thereafter. See page 342 for a full quotation and a longer discussion of Goevyaerts's first encounter with *Mode* in 1951. The scholarly articles that cite Messiaen's *Mode* as the model for Goeyvaerts Sonata op. 1 are legion; it would be arbitrary to single out one or two examples. Nevertheless the persistence of this error is a remarkable phenomenon; Goeyvaerts's statements are now available for twenty years.

[331] For the list of students, see BOIVIN 1995, pp. 415–16. The exact week can be established from Stockhausen's letter to Goeyvaerts of Friday, 15 February 1952. "Zunächst nehme ich meine ersten nichtsagenden Bemerkungen über Messiaen alle zurück. Ich verehre ihn über alle Maßen. Was ich allein in dieser Woche bei ihm erlebt habe, ist nicht mit Worten zu sagen! Unter anderem hat er seine 4 Etüden analysiert und gespielt. Ich habe die Noten gekauft." ("First let me take back all my undifferentiated remarks about Messiaen. I revere him more than anything. I have no words to explain what I experienced this week alone in his class! Among other things he analyzed and played his *Quatre etudes*. I bought the score.") Quoted after Christoph von Blumröder, *Die Grundlegung der Musik Karlheinz Stockhausen*s (Stuttgart: Franz Steiner, 1993), p. 75.

[332] Discussed in more detail on page 81 above.

reacted positively, saying he liked the article "very much", and that it had forced him to read Meister Eckhart.[333] Both Eckhart and the modern poets and writers cherished by Cage and Boulez were grappling with complex spiritual issues, and it was hard to retrace Boulez's thoughts in that regard. Most striking, perhaps, was the contrast between Cage's aim to 'quiet and sober the mind' and Boulez's wish of stirring up a 'true sonic delirium'. Could it be said that, in being opposites, both sought an extraordinary state of grace?

We do know, however, that the two composers agreed in their aesthetic judgments in many regards—an entirely new experience for Boulez, whose best friends had not been musicians but poets, painters, and intellectuals. Cage was slightly more radical, however: he rejected Romantic and Classical music and identified in Beethoven's music the source of a major historic error. On the other hand, Boulez's Second Piano Sonata shared ideals with the Classical sonata. Admittedly Boulez's abstraction makes these shared ideals (or formal parallels) hard to discern at the surface. The Classical ideal of 'balance', for example, is found in the Sonata as 'balance between the horizontal and vertical aspects of musical discourse'. Only by keeping this balance, Boulez's new polyphony could be subjected to incremental inner fermentation and thus, in the end, turn into a mesmerizing exposition of concrete sound. Similarly, Boulez took the Classical sonata's dialectic of themes to a more abstract level. In his early works of Classic timbre serialism, Boulez sublated the traditional idea of a theme. Formerly, pitch and rhythm (perhaps accompanied by dynamics and articulation) together defined the 'character' of a theme. Boulez disarticulated this multi-dimensional synthesis; he cross-fertilized mono-

[333] See fn. Fehler: Verweis nicht gefunden for the quote from the letter to Cage.

dimensional thematic constructs in a counterpoint of dimensions. Thematic process, a notion dear to the Classical Sonata, is also fundamental to Boulez's early works, albeit in a reversed sense: to control and develop various degrees of athematicism.

However, Boulez's innovations remained within the realms of traditional musical syntax; they did not include a conscious concern to compose the musical material itself. Boulez acquired the idea of 'material composition' from Cage in 1949:

Laisse-moi te dire, à ce sujet, que tu es le seul à m'avoir apporté une inquiétude supplémentaire à propos du matériau sonore que j'emploie. Ta rencontre m'a fait terminer une période 'classique' avec mon quatuor, qui est maintenant bien loin. Il nous reste à aborder le vrai 'délire' sonore et à fair sur les sons une expérience correspondant à celle de Joyce pour les mot. Au fond—et je suis bien content de faire cette découverte—je n'ai encore rien exploré et tout reste à chercher dans des domaines aussi variés que le son, le rythme; l'orchestre, les voix; l'architecture. Il nous reste à atteindre une 'alchimie' sonore (voir Rimbaud) à laquelle je n'ai encore que tout juste préludé et sur laquelle tu as contribué beaucoup à m'éclairer.[334] Boulez leaves no doubt that Cage was "the only person" who caused additional "anxiety about the sound materials". Cage's approach stimulated Boulez to formulate his goal as sonic 'alchemy' after Rimbaud. But how can we be sure that this 'alchemy' included any real concern for the composition of

[334] Boulez, letter to Cage, 11 January 1950. NATTIEZ 1990, p. 72. ("On that subject, let me tell you that you are the only person who has added an anxiety about the sound materials I use. Meeting you made me end a "classical" period with my quartet, which is well behind me now. Now we have to tackle real "delirium" in sound and experiment with sounds as Joyce does with words. Basically—as I am pleased to discover—I have explored nothing as yet and everything remains to be looked for in fields as varied as sound, rhythm; orchestra, voices; architecture. We have to achieve an "alchemy" in sound (see Rimbaud) to which all I have done so far is merely a prelude and which you have greatly clarified for me.") NATTIEZ 1993, p. 45.

timbres? In his poem "Alchimie du verbe" from 1874, Rimbaud described (to himself) a new type of poetry:

> J'inventai la couleur des voyelles!—*A* noir, *E* blanc, *I* rouge, *O* bleu, *U* vert.—Je réglai la forme et le mouvement de chaque consonne, et, avec des rythmes instinctifs, je me flattai d'inventer un verbe poétique accessible, un jour ou l'autre, à tous les sens. Je réservais la traduction.
>
> Ce fut d'abord une étude. J'écrivais des silences, des nuits, je notais l'inexprimable. Je fixais des vertiges.[335]

The excerpt reads like a blueprint for the project of synthetic timbre composition. First the poet composed his materials (vowels and consonants). He then freed the synthesized words for multi-dimensional perception and, finally, began a study in paradoxes. The letter-sounds are the analog of synthesized musical timbres. No doubt Cage and Boulez had discussed at length the latest technologies means at the time of their first encounter in Paris. Schaeffer's synthesis-by-experiment methods will be discussed in the following chapter. Boulez failed to discover Messiaen's (makeshift) path to material composition, but with Cage he felt material composition was a necessity: a "vertical" extension of composition technique was unavoidable, but technology was not quite ready in 1949.

Welcoming his ignorance in most musical topics ("sound, rhythm; orchestra, voices; [and] architecture"), Boulez now adhered to Bauhaus principle of an apprenticeship that begins with an exploration of the material and rejects traditional academia. Fundamental to Cage, this attitude had been less detectable in Boulez prior to their Paris encounter. In part, this difference may have been due to the fact that the Frenchman was younger and

[335] Arthur Rimbaud, "Délires II. Alchimie du verbe", from *Une Saison en Enfer* (1873), in *Collected Poems*, translated by Martin Sorrell, bilingual edition, Oxford World's Classics (Oxford: Oxford University Press, 2001), p. 235. ("I invented the colour of vowels!—A black, E white, I red, O blue, U green.—I organized the shape and movement of every consonant, and by means of instinctive rhythms, flattered myself that I was the inventor of a poetic language, accessible sooner or later to all the senses. Interpretation I kept for myself. First I made a study. I wrote down silences, nights, I noted the ineffable. I nailed a vertigo.") Ibid., p. 235.

less mature. Attacks on academicism were topical in his articles on Berg and Classic timbre serialism,[336] published in 1948 but, prior to meeting Cage, Boulez never went as far as welcoming the idea of 'knowing nothing'. Rimbaud had found the mirror image of 'knowing nothing' by opening a dark gap in the subject: "Je est un autre."[337] In the early 1950s the goal of 'knowing nothing' quickly turned into a distinguishing trait for a group of pioneering composers who experimented with the sonic microstructure. The conscious desire to explore the inner sound universe first linked Cage with Messiaen, Boulez, and Schaeffer, but soon included a wider number of composers and scientists who investigated the world within a single sound by technological means.

It is in this sense that we may understand an experimental work like *Structures Ia*, which, rather than 'total control', was an early essay in synthetic timbre serialism.[338] Boulez set up arbitrary series, with twelve elements each, for pitch, duration, intensity, and articulation. The combination of all pitch values with all duration values already resulted in a more than a thousand timbres, taking into account the different registers of the piano. Each of these timbres was refined further by one of twelve intensities and one of twelve manners of articulation. This gargantuan timbre catalog for the piano tested the limitations of instrument and performer at the same time. In the syntactical domain of Classic timbre serialism, Boulez simply paraded the timbre catalog. Opting for non-

[336] Boulez's accused Leibowitz of academicism. In this light one may question in how far Boulez's and the Bauhaus adherents' concept of academicism corresponded. Pierre Boulez, "Incidences actuelles de Berg," *Polyphoni*e, 2 (1948), 104-8, quoted from *Points de repère 1: Imagine*r (Paris: Bourgois, 1995), pp. 37-42. and Boulez, "Propositions".

[337] Arthur Rimbaud, letter to Georges Izambard, 13 May 1871, id., *Oeuvres complètes* (Paris: Gallimard, 1972), p. 249. ("I am an other.")

[338] Ligeti's confused analysis of *Structures 1a* in *Die Reihe* 4 has marked the standard idea of serialism in many people's minds. György Ligeti, "Pierre Boulez. Entscheidung und Automatik in der Structure Ia," *Die Reihe* 4 (1958), pp. 38–63. For a comprehensive critique of Ligeti's analysis, see Robert Piencikowski, "Inschriften. Ligeti -- Xenakis -- Boulez," *Musiktheori*e 12, 1 (1997), pp. 7–16.

interference on the note-to-note level, he added only minor architectural structuring by varying the number of simultaneous parallel threads.

In other words, Boulez expanded Messiaen's set of thirty-six timbres to a set of more than one hundred thousand timbres (88 x 12 x 12 x 12 = 152.064).[339] In his article "Eventuellement..." Boulez explained that a one-on-one parallelism of series such as in *Structures Ia* was the simplest, most unimaginative step into an unknown universe of the material.[340] While one hundred thousand timbres is an impressive figure for a single instrument (regarded as a 'single' timbre from a macroscopic perspective), Boulez was aware that a limitation to four musical dimensions was arbitrary. Rational composition of timbres cannot be limited to four dimensions; not only do we need to find criteria for selecting values from each dimension but, in addition, the laws that make these values into single sounds. More than twenty years later, Boulez reaffirmed that:

> J'avais l'intention—ceci est anecdotique—de donner spécialement à cette première *Structure*, composée en 1951 déjà, le titre d'un tableau de Klee, *A la limite du pays fertile*, tableau construit principalement sur des horizontales et quelques obliques, c'est-à-dire sur une invention très réduite. Cette première *Structure* à été composée très sciemment d'une manière analogue. […] C'était, pour moi, un essai, ce qu'on appelle le doute, le doute cartésien; remettre tout en cause, faire table rase de son héritage et recommencer à partir de zéro pour voir comment on peut reconstituer l'écriture à partir d'un phénomène qui a annihilé l'invention individuelle.[341]

[339] For reasons of performability this number was reduced by not changing articulation and dynamics on note-to-note basis, but per serial strand. The effect of this high timbre variability is evident in the music.

[340] "Le cas le plus simple consiste à prendre une série de valeurs et à leurs fairs subir un nombre de permutations égal et parallèle à celui des hauteurs, ..." Boulez, "Eventuellement...", p. 273. ("The simplest case consists of taking a duration series and submit a number of permutations that equals and parallels the pitch permutations.") This article is the unofficial manifesto of synthetic timbre serialism.

[341] Pierre Boulez, *Par volonté et par hasard: entretiens avec Célestin Deliège* (Paris: Seuil, 1975), pp. 69–70. ("By way of incidental background I might mention that I wanted to give the first Structure in particular—a piece composed as early as 1951—the title of a painting by Klee, 'At the limit of the fertile land'. This painting is mainly constructed on horizontal lines with a few oblique ones, so that it is very restricted in its invention. The first Structure was quite consciously composed in an analogous way. [...] For me it was an experiment in what one might call Cartesian doubt: to bring everything into question again, make a clean sweep of one's heritage and start all over again from scratch, to see how it might be possible to reconstitute a way of writing that begins with something which eliminates personal invention.")

Apart from the underlying thematic issue (role of the author) in *Structures Ia*, *Ic*, and *Ib*, Boulez's plan to entitle *Structures Ia* after Klee's *A la limite du pays fertile* formed a link to Cage's favorite Klee quotation. He employed the quote in his Blackmountain lecture on Webern and Satie and again in his article "Forerunners of Modern Music":

> I want to be as though new-born, knowing nothing, absolutely nothing, about Europe; *ignoring poets and fashions, to be almost primitive*.

The emphasized text was left out in the French translation of Cage's article; perhaps Fred Goldbeck, the text's translator and editor of the journal *Contrepoints*, considered Klee's anti-art stance as too iconoclastic. The shortened French version has a slightly different meaning, but Klee's message remains intact:

> Il faudrait renaître, et ne rien, absolument rien savoir sur l'Europe.[342]

Nevertheless, one should add that, in adopting Klee's call, Cage introduced the Bauhaus aesthetics back into Europe—aesthetics that had been violently repressed in the 1930s and early 1940s. In proposing Klee's title for his *Structure Ia*, Boulez reflected Klee's ideal of 'knowing nothing' in two ways. On the one hand, he used the piano as precursor of the electronic studio, seeing in the inner-timbral play of musical dimensions an entire unexplored universe of compositional practice. He knew nothing about its laws and even its extent. On the other hand, in his near-complete non-interference on the level of syntax, he broke with the traditional European concept of the composer responsible for his work. In regard to the *terra incognita* of timbre, however, Boulez would begin his first serial tape compositions in Schaeffer's studio only months after composing *Structures Ia* and, in the late 1970s, he continued to explore the world of timbre

Pierre Boulez, *Conversations with Célestin Deliège* (London: Eulenburg, 1976), pp. 55–56.

[342] John Cage, "Raison d'être de la musique moderne," *Contrepoint*s, 6 (December 1949), 55–61, quoted from Nattiez, *Pierre Boulez, John Cag*e (1990), p. 69, fn. 11. ("We should be reborn and know nothing, absolutely nothing about Europe.") My re-translation from French.

composition at IRCAM. In the end, Boulez did not adopt the title of Klee's painting for his *Structures Ia* and thereby removed a telling sign of Cage's influence in the origins of synthetic timbre serialism.

Dialectics of Freedom

The brilliant Cagean universal theory of music proposed a multi-leveled approach to composition perfectly suitable for experimentation. It abolished the traditional focus on harmony and pitch, by asserting the primacy of rhythm and time structures.[343] At the same time, it allowed and even advocated the invention of methods and materials for each individual work. The Italian Futurist Luigi Russolo had called for an aesthetic of noise in order to reflect man's changing sensibilities in the modern capital and in the trenches of war, with their fascinating sounds of machine guns.[344] Cage, by contrast, argued for the liberation of all sounds as an inner logical necessity deriving from the nature of the musical material itself—a feat only possible after the emancipation of

[343] Cage did not propose music should be organized *without* any sound or silence, nor did he assert that Beethoven's or anybody else's music lacked temporal structure. James Tenney seems to misread Cage in this sense: James Tenney, "John Cage et la théorie de l'harmonie," in *John Cage. Revue d'Esthétique, [N.S.], 13/1*5, Edited by Daniel Charles (Toulouse: Privat, 1988), pp. 474–75. Time structures are always articulated by specific arrangements of musical materials. Cage stated simply (and radically) that time structure ought to be primary and its articulation secondary. Martin Erdmann adopts Tenney's flawed reasoning and compounds it by interpreting Cage's lecture 'In Defense of Satie' exclusively as a *retrospective* composition theory with which Cage desired to legitimate his work since 1939. While Cage had used the square-root form since 1939, initially he had not been aware of Satie's or Webern's music and did not realize the full theoretical importance and potential of his discoveries. Following Erdmann, one might as well interpret Schoenberg's discovery of the dodecaphonic method exclusively as a historical legitimization of his expressionist period in the 1910s. Erdmann, "Webern und Cage", p. 242.

[344] Luigi Russolo, *The Art of Noise*s (New York: Pendragon Press, 1986). Marinetti's Futurist manifesto more clearly emphasizes the glorification of the machine, war, and the Futurists' highly aggressive attitude towards all tradition, mingled with proto-Fascist attitudes. Cf. points 9 and 10 of the manifesto:

"(9) We will glorify war—the world's only hygiene—militarism, patriotism, the destructive gesture of freedom-bringers, beautiful ideas worth dying for, and scorn for woman.

(10) We will destroy the museums, libraries, academies of every kind, will fight moralization, feminism, every opportunistic or utilitarian cowardice."

Filippo Tommaso Marinetti, "Le futurisme," *Le Figar*o (20 February 1909). Futurists are far from the discovery of silence.

silence as equal partner of sound. Only with silence as a basic material of music was he able to anchor logically the theoretical footing of his square-root form. Once the primacy of temporal organization was established in general, Cage's square-root form became one among many possible time structures and, not surprisingly, soon after 1949 Cage began to experiment with new rational time structuring systems.

In the background of Cage's theory loomed large the philosophical debate about the dialectics of freedom. For several reasons, musical composition became closely involved in this debate. Thomas Mann had published *Doktor Faustus* in 1947, a parable on the German nation in which the dialectics of law and freedom in music take on a wider meaning. Mann's book was widely noted, discussed, and quickly translated into English and French.[345] In a highly significant passage for post-war music, the fictive composer Adrian Leverkühn, based on Schoenberg, lays out the basic tenets of the twelve-tone technique to his assistant Zeitblom. He explains the derivation of the forty-eight row forms and then proceeds:

> "The decisive factor is that every note, without exception, has significance and function according to its place in the basic series or its derivatives. That would guarantee what I call the indifference to harmony and melody."
>
> "A magic square," I said. "But do you hope that people hear that?"
>
> "Hear?" he countered. "Do you remember a certain lecture given for the Society for the Common Weal from which it followed that in music one certainly need not hear everything? If by 'hearing' you understand the precise realization in detail of the means by which the highest and strictest order is achieved, like the order of the planets, a cosmic order and legality—no, that way one would not hear it. But this order one will or would hear, and the perception of it would afford an unknown aesthetic satisfaction."

[345] Thomas Mann, *Doktor Faustus: das Leben des deutschen Tonsetzers Adrian Leverkühn erzählt von einem Freunde* (Berlin: Suhrkamp, 1947); first Engl. trans. by H.T. Lowe-Porter, *Doctor Faustus* (New York: Knopf, 1948); first French trans. by Louise Servicen, *Le docteur Faustus: la vie du compositeur allemand Adrian Leverkuhn*, (Paris: Albin Michel, 1950).

> "Very remarkable," said I. "The way you describe the thing, it comes to a sort of composing before composition. The whole disposition and organization of the material would have to be ready when the actual work should begin, and all one asks is: which is the actual work? For this preparation of the material is done by variation, and the creative element in variation, which one might call the actual composition, would be transferred back to the material itself—together with the freedom of the composer. When he went to work, he would no longer be free."
>
> "Bound by a self-imposed compulsion to order, hence free."
>
> "Well, of course the dialectic of freedom is unfathomable. But he could scarcely be called free inventor of his harmony. Would not the making of chords be left to chance and accident?"
>
> "Say, rather, to the context. The polyphonic dignity of every chord-forming note would be guaranteed by the constellation. [...]"
>
> "[…] Human reason! And besides, excuse me; 'constellation' is your every other word. But surely it belongs to astrology. The rationalism you call for has a good deal of superstition about it—of belief in the incomprehensibility and vaguely daemonic, the kind of thing we have in games of chance, fortune-telling with cards, and shaking dice. Contrary to what you say, your system seems to me more calculated to dissolve human reason in magic."
>
> He carried his closed hand to his brow.
>
> "Reason and magic," said he, "may meet and become one in that which one calls wisdom, initiation; in belief in the stars, in numbers…."[346]

The short-lived German postwar music journal *Stimmen* (19 issues, 1947–50), edited by Stuckenschmidt and Rufer, published a slightly longer excerpt, entitled "The Magic Square", which included the crucial passage cited above and which would have been studied by German musicians and composers, such as Stockhausen.[347] One should recall, once more, that Mann's book and the above passage were published when Germany was completely uninformed about dodecaphony, due to more than a decade of violent and lethal repression by the Nazi regime. Moreover, Schoenberg had not published his own

[346] Thomas Mann, trans. by H.T. Lowe-Porter, *Doctor Faustus* (New York: Knopf, 1948), pp. 192–93
[347] Thomas Mann, "Das magische Quadrat," *Stimme*n, 8/9 (June 1948): 270–74.

view of the twelve-tone composition technique, so that, in some respects, dodecaphony remained confined to the select 'inner Schoenberg circle'.

Additionally, on 21 October 1948, the premiere broadcast of Eimert's contemporary music series *Musikalisches Nachtprogramm* began precisely with a discussion of Mann's *Doctor Faustus*. The reach and global success of Mann's novel was so extensive that Schoenberg became frightened that his invention of the twelve-tone technique might be dissociated from his name—Hauer being his well-established and long-time challenger. In 1948 he commenced a dispute with Mann—again, Alma Mahler acted as Schoenberg's informer—accusing him of piracy for failing to disclose the twelve-tone method without a clear attribution to its true inventor. In an open letter to the editor of *Saturday Review of Literature*, Schoenberg reported what he had previously written to Mann:

> One knows the superficiality and monomania of some historians who ignore fact if they do not fit in their hypotheses. Thus I quoted from an encyclopedia of the year 2060, a little article in which my theory was attributed to Thomas Mann, because of his Leverkühn.[348]

Mann's key advisor in musical matters had not been Schoenberg, as one might expect, but Adorno.[349] In the mid-1940s the 'Hollywood triangle' Schoenberg-Mann-Adorno lived close to each other in Los Angeles, among many other displaced Europeans. One may understand Schoenberg's indignation when he learned that Mann not only had adopted extensive portions of the theory of twelve-tone composition without permission, but also attributed its invention to a fictive composer struggling with insanity.

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[348] Arnold Schoenberg, "Letter to the Editor," *Saturday Review of Literatur*e 32, 1 (1 January 1949), p. 22. This letter exchange can also be located in Patrick Carnegy, *Faust as Musician: A Study of Thomas Mann's Novel Doctor Faustu*s (London: Chatto and Windus, 1973), pp. 168–73.

[349] Details are chronicled in the 'novel of a novel': Thomas Mann, *Die Entstehung des Doktor Faustu*s (Amsterdam: Bermann-Fischer, 1949), English as *The Genesis of a Novel* (London: Secker & Warburg, 1961); American ed. as *The Story of a Novel: The Genesis of Doctor Faustus* (New York: Knopf, 1961).

But beyond the debate about the sanity and insanity of the composer in the novel, Mann also telescoped the older debate between the mind and the heart, another topic that had been addressed by Schoenberg prior to Mann, in 1946:

> It is not the heart alone which creates all that is beautiful, emotional, pathetic, affectionate, and charming; nor is it the brain alone which is able to produce the well-constructed, the soundly organized, the logical, the complicated. First, everything of supreme value in art must show heart as well as brain. Second, the real creative genius has no difficulty in controlling his feelings mentally; nor must the brain produce only the dry and unappealing while concentrating on correctness and logic.[350]

In his universal theory of music, Cage also addressed concerns such as the opposition between heart and mind, rationality and irrationality, and the possibility of chance and accident. Throughout the period 1949–52, Cage rationally controlled the temporal large-scale structure of his music, while leaving musical form to freedom and feeling. On the level of composition method and musical material, however, both rational and irrational approaches were possible; these were the two major areas in which Cage concentrated his explorations after his return to the States and, most likely, these areas also reflect what Cage and Boulez had been discussing during their encounters in 1949.

These philosophical concerns are illustrated by the theme of *Structures I,* a theme that relates to the debate about law and freedom, and the relation between the composer and his work.[351] The three parts of *Structures I* represent varying degrees of authorial involvement in the composition process. In *Structure Ia* the composer's input is minimal.

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[350] Arnold Schoenberg, "Heart and Brain in Music," in *Style and Idea* (London: Faber, 1984), p. 75.

[351] Confusion arises when merging this philosophical theme of *Structures I* into serial composition theory. Some authors even regard the non-interference of the composer in *Structures Ia* as a characteristic of serial technique. For Boulez, the theme is a 'content issue'. Likewise, Cage's universal theory extends beyond the traditional limits of composition technique. It includes matters of human psychology and an intense philosophy. See Figure 10 on page 269 for the scheme of Cage's universal theory of music.

It grows in *Structure Ic* and reaches a maximum in *Structure Ib*. This theme relates to a rising awareness about the interdependence between the form and its content.

The Transatlantic School

Cage and Boulez did not meet in person between September 1949 and November 1952. In that period, they shared and critiqued their ideas on composition by mail and via acquaintances traveling between New York and Paris (Nicole Henriot, Christian Wolff, Jacques Monod, Rachel Rosenthal, Seymour Barab, among others). In January 1950 Cage met Morton Feldman at a Webern concert. They quickly became close friends, and Feldman moved into an apartment a few floors below Cage's. Feldman once described the interaction between the different parties in the building as a type of hippie community *avant la lettre* and, in a very characteristic tale of urban folklore, brought to life the fringe characters, painters, poets, nights at the Cedar Bar and, above all, the general atmosphere of the period.[352] Later that year, David Tudor joined Cage and Feldman. Both Tudor and Feldman were pupils of Stefan Wolpe (1902–72).[353] Wolpe, one of the most radical composers of the Berlin-based *Novembergruppe*, was championed as one of the leading talent in the 1920s.[354] The *Novembergruppe* formed in November 1919 when, for a brief moment, after the collapse of the German monarchy, Germany appeared to follow the lead of the Russian revolution, and turn to a communist form of government. The group's most salient characteristic was an undogmatic open-mindedness and tolerance. Its members were related to stylistic movements as diverse as

[352] Morton Feldman, "'Give My Regards to Eighth Street'," in *Essay*s, edited by Walter Zimmermann (Kerpen: Beginner Press, 1985), pp. 71–78.
[353] Morton Feldman, *Essay*s (Kerpen: Beginner Press, 1985), p. 36.
[354] Hans Heinz Stuckenschmidt, "Musik und Musiker in der Novembergruppe," *Kunst der Zei*t 2, 13 (1928), pp. 94–101.

Expressionism, Cubism, Surrealism, Dadaism, and Futurism. The group was active in Berlin throughout the 1920s until its ultimate demise by the Nazis. Moreover, Wolpe was influenced by the aesthetics of utopian socialism of the Bauhaus, attended its lectures and exhibitions.[355] In the years 1929–33 Wolpe's made a radical turn away from avant-garde music and began producing songs for the working class.[356]

In 1933 Nazi persecution drove Wolpe to Austria, where he spent an important study period with Webern and, at the end of 1933, to Palestine. There he was influenced by Jewish music from Yemen and Syria as well as Arabic music. In 1938 Wolpe emigrated to the U.S.A., where he held teaching positions at various institutions, including a period as musical director of Black Mountain College. He influenced a number of American composers.[357]

Wolpe's technical studies of the 1940s add an important link between the German Bauhaus and the post-war avant-garde. One of these studies, entitled *Displaced Spaces, Shocks, Negations, A New Sort of Relationship in Space, Pattern, Tempo, Diversity of Actions, Interreactions and Intensities* (1946–48), illustrates that Feldman did not arrive wholly unprepared for radical and revolutionary concepts when he first met Cage in 1950. Through Wolpe, Feldman also had had privileged access to Webern's music.

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[355] Rainer Peter and Harry Vogt, "The Berlin Novembergruppe and its Musicians," in *Von Berlin nach New York. Program Notes. West German Radio, Cologne 1988*., Translated by Lucinda Rennison, (<http://www.cubeensemble.com/arch/arch1993.html > accessed on 5 June 2003), original document from 1988.

[356] For an in-depth look at Wolpe's turn to the working class in the years 1929–33, see Thomas Phleps, "Stefan Wolpe: Eine Einführung," in *Stefan Wolpe: Lieder mit Klavierbegleitung 1929–193*3 (Hamburg: Peer Musikverlag, 1993), pp. 1–45.

[357] For Wolpe's development and activities in New York, see Austin Clarkson, "Stefan Wolpe and Abstract Expressionism," in *The New York Schools of Music and Visual Art*s, edited by Steven Johnson (New York: Routledge, 2002), pp. 75–112.

Sometime around March 1950, Wolff became a pupil of Cage. Only sixteen years old at the time, Wolff recalled that, as a teacher, Cage asked him to work with the same plainchant over and over, since that was what Schoenberg had done with Cage for over a year. After about six weeks of this exercise, Cage said that the essential lesson was discipline and that he thought Wolff had grasped it.[358] Thus Wolff, who revered the music of Webern, had become the Benjamin of the so-called New York School. The New York School was linked by their common devotion to the music of Webern, as is further evidenced by the event that brought Earle Brown (1926–2002), still missing from the group until 1952, to New York.[359] Brown held a first teaching position in Denver, Colorado, from 1950 to 1952, after having studied the ultimate in 'rational' composition, the Schillinger System, in Boston (1947–50). Cage met Brown in April 1951 in Denver, while on a tour with Cunningham (San Francisco, Denver, Seattle).[360] After Carolyn Brown's dance talents had impressed Cunningham in his master-class, the Browns attended a performance of Cage's *Sonatas and Interludes.* Following the concert Brown asked Cage whether he thought his music had anything to do with the music of Webern:

> John looked astonished and said 'What do you know about Webern!?' It was a revelation to him that this young kid in Denver, Colorado knew Webern's music. At that time, though it's hard to believe now, it was really not that common to run into someone who knew this music. I remember he said he loved Webern's music, and asked me what I knew. I told him what I was looking at: Webern, Schoenberg and Varèse, amongst others. He said, 'That's incredible. What are you doing here?' I said 'I'm trying to make a living!'[361]

[358] Gerald Gabel, "Une interview avec Christian Wolff," in *John Cage. Revue d'Esthétique, [N.S.], 13/15*, Edited by Daniel Charles (Toulouse: Privat, 1988), pp. 506–7.

[359] Brown held a first teaching position in Denver, Colorado from 1950 to 1952, after having studied the ultimate in 'rational' composition, the Schillinger system in Boston (1947–50).

[360] The meeting is often dated 1950 or 1952, but a letter from Cage to Boulez confirms April 1951; see NATTIEZ 1990, p. 155.

[361] David Ryan, "Earle Brown -- A Sketch," CD Liner Notes of *American Music Series: Earle Brow*n, (<http://www.earle-brown.org/reviews/liner.html> accessed on 1 June 2003), original document from November 1999.

Cage and Cunningham invited the Browns for dance and music collaboration and, thus, the Browns decided to move to New York in 1952. Carolyn Brown became one of the leading members of the soon-to-be-born Cunningham Dance Company (1953) and Brown joined Cage and Feldman in a *Project for Magnetic Tape* and other ventures.

Meanwhile, contacts between the New York and Paris avant-garde scenes increased. Thomson, already enthusiastic about Boulez before Cage's trip to Paris, wrote an article, "Atonality Today", discussing the theories Boulez had laid down in "Propositions".[362] Gatti, Souvtchinsky, and Grimaud corresponded with Cage. Feldman and other composers of the Cage circle, even Copland, sent Boulez scores, and Cunningham choreographed a ballet of a few movements from Henry's and Schaeffer's *Symphonie pour un homme seul* a few years before the version of Parisian choreographer Maurice Béjart. Over the next three years a lively avant-garde exchange developed, with Boulez and Cage in central, mediating roles.

Boulez promoted Cage in Europe. In the winter of 1949 Boulez held a lecture on Cage's *Construction in metal* at the Paris Conservatory, and in January 1950 he introduced a group of Belgium composers to the music of Cage. They were so fascinated by Cage's *Construction in metal* and his prepared piano, as well as the score of Boulez's String Quartet, that they invited Boulez to Belgium for a presentation in February 1950.[363] The group included Vladimir Woronoff, editor of Leibowitz's *Schoenberg and His School* (and Cage's friend since the Italy ISCM festival of 1949), as well as composers from the entourage of Souris, such as Froidebise. For his presentation in

[362] Virgil Thomson, "Atonality Today," *New York Herald Tribun*e (5 February 1950), quoted from *A Virgil Thomson Reade*r (1981), pp. 338–40.
[363] NATTIEZ 1990, pp. 71–72.

Belgium, Boulez planned to explain how closely Cage's and his rhythmical researches were related. Then, in April 1950, Boulez reached a vast audience for Cage's music when he organized a broadcast of the *Three Dances* and the *Construction in Metal* on French National Radio. The broadcast, hosted by Grimaud, critically reviewed the history of music instruments.[364] A Boulez conference paper on Cage's music followed in November 1951.[365] At the same time, Boulez invited Cage to supply an editorial on the 'necessity of electronic music in general' because Schaeffer was planning several radio programs on the topic. In October 1952 Boulez provided Radio Cologne with information material, including recordings as well as and Cage's article "Four musicians at work", in which works by Feldman, Cage, Wolf, and Boulez are described.[366] The article "Four musicians at work" directly reflects the existence of the Transatlantic School. Boulez's name among Americans (nominally Wolff may have been French at the time) was paralleled in multiple symmetric cases in Europe, where the name Cage appears next to Europeans such as Stockhausen, Boulez, Nono, Goeyvaerts, and Messiaen. Documentary support for this transatlantic cohesion is extant at least until late 1953. This illustrates how close and international the avant-garde was during the period 1950–52. The group was neither exclusively 'New York' nor exclusively 'Paris'; it was essentially 'transatlantic'. A further example: in October 1952 Boulez asked Stockhausen to write to Cage and request more information materials on Cage's music. Boulez had encouraged Eimert to schedule a comprehensive two-hour feature program on

[364] Ibid., pp. 87–88.

[365] Ibid., p. 182 fn. 3. Joan Peyser is holding that particular letter from 27 November 1951 under lock and key (for unknown reasons). On demand of John Cage, who owns the copyrights, she shared only page 3 with the editors of the Boulez-Cage correspondence; pages 2 and 4 remain unpublished.

[366] John Cage, Christian Wolff, Pierre Boulez, and Morton Feldman, "Four Musicians at Work", *Transformation: Arts, Communication, Environment* (New York) 1, 3 (December 1951): 168–72, quoted from NATTIEZ 1990, pp. 168–74.

Cage's music on the *Musikalisches Nachtprogramm*. This broadcast aired on 27 November 1952; illustrating that Stockhausen and Cage began to correspond as early as October-November 1952. The Belgian group was also involved in this Transatlantic School. Souris and Froidebise planned a journal *Variations* devoted to the latest developments in contemporary music, and Boulez asked Cage to contribute an article.[367]

What did Cage do for Boulez? Cage revered the music of Boulez's Second Piano Sonata, especially its last movement, in which Boulez asks the pianist to '[p]ulverize the sound'. The ultimate source of this performance instruction had been René Char's "Le Poème pulvérisé.'[368] When Virgil Thomson, in a concert review of January 1950, hailed the first movement of Webern's Symphony, op. 21, as "ultimate in pulverization", the metaphor reflected both the major importance of Webern's aesthetics for the Transatlantic School and Thomson's familiarity with Boulez's Second Sonata.[369] A day after its New York premiere by Tudor on 17 December 1950, Cage wrote to Boulez:

> I had feelings of an exaltation equal to that you had introduced me to 4 Rue Beautreillis. […] Your music gives to those who love it an arousing and breathtaking enlightenment. I am still always trembling afterwards. After the concert Tudor, Feldman and I with 20 others celebrated and finally at 4 A.M. the three of us were along walking through the streets still talking of you and music.[370]

As seen above in his reaction to Freund's *Pierrot Lunaire* rendition or his first encounter with the music of Webern, here too Cage trembled in the face of sublime beauty and, in

[367] In this time period many journal projects stalled after the first issue; this one never got to this stage. The name was chosen after the group 'Variations', which specialized in the performance of contemporary music. The editorial board of the journal included Souris, Froidebise, Philippot, Fano, Deliège and others. Stockhausen was also asked to contribute; see page 351, fn. Fehler: Verweis nicht gefunden.

[368] René Char, "Le poème pulvérisé," *Cahiers du Su*d, 279 (September 1946).

[369] Virgil Thomson, "Star Dust and Spun Steel," *New York Herald Tribun*e (27 January 1950), quoted from *A Virgil Thomson reade*r. Boston: Houghton Mifflin, 1981, pp. 337-338.

[370] Cage, letter to Boulez, December 1950, NATTIEZ 1990, pp. 122–23. After receiving the published score of the Sonata in March 1950, he comments: "Chaque note me parle du page. Je suis dans un état de l'extase et de la sentimentalité." ibid, p. 93. (Every note on the page speaks to me. I am in a state of ecstasy and sentimentality.) NATTIEZ 1993, p. 56.

his words, the Sonata's fourth movement was "transcendent". After returning from Paris, the aesthetic appeal of Boulez's Sonata had been so strong that Cage perceived his own music and the music of his friends as weak, lacking perhaps in magic: "nôtre musique me semble faible. En vérité, c'est seulement toi qui m'interesse."[371] Upon receiving the published score of the Sonata in March 1950, he commented: "Chaque note me parle du page. Je suis dans un état de l'extase et de la sentimentalité."[372]

Cage, in fact, had been instrumental in the publication of Boulez's Second Piano Sonata. In 1949 Boulez's music still was unperformed and none of his score had been published. Since 1946 he had submitted scores for publication, but publishers had been slow to reach a decision. Learning of their foot-dragging Cage, practical-minded as ever, made an appointment with these publishers and told them that Cowell's *New Music* had shown interest in publishing Boulez's scores. Impressed by the counter-offer from an American publisher, the French decided to publish any work Boulez deemed ready. Cage's sojourn in Paris ended around September 1949 with this stunning development of far-reaching consequences.[373] Boulez spent several months in late 1949 and early 1950 preparing his Second Piano Sonata for publication.

As soon as the score was printed in March 1950, Cage tried to get hold of a virtuoso pianist to study the work. His first choice, William Masselos, worked slowly and, when the planned premiere of December 1950 drew closer and Cage found out about the

[371] Cage, letter to Boulez, 17 January 1950, ibid., p. 76 ("...our music sounds feeble to me. In truth, it is only you who interests me.") NATTIEZ 1993, p. 48. Note that this statement was made just a week before Cage met Feldman at the Webern concert at Carnegie Hall on 26 January 1950.

[372] Cage, letter to Boulez, before April 1950, ibid., p. 93. ("Every note on the page speaks to me. I am in a state of ecstasy and sentimentality.")

[373] PEYSER 1976, pp. 60–61, for the details on Cage's promotional activities with the French publishers. Boulez's first letter to Cage after his departure can be dated to the end of November or early December 1949. For the clues to date Boulez's letter (in pidgin English), see NATTIEZ 1990, p. 70 ("elle doit dater de fin novembre") and p. 57 ("In the next days—middle of December").

sluggish progress, Tudor, who had already began to studying the music out of his own accord, was able to help out.[374] Reading the work of Antonin Artaud, Tudor gained access to the aesthetic violence that inspired the music. Cage, who had given Tudor the hint on Artaud's importance, also started reading the enigmatic Artaud, after Tudor confirmed the extent to which Artaud (long been held in an insane asylum) had been fundamental to grasp the essence of Boulez's Second Piano Sonata. After the American premiere in December 1950, Cage announced that Boulez now had a "strong and devoted following" in New York.[375] More than any other work by Boulez, his Second Piano Sonata established his reputation as a leading avant-garde composer. This was true for both the United States and Europe. In the spring of 1951, Boulez presented the Second Piano Sonata in the class of Messiaen and, as a consequence, influenced younger composers, such as Fano and Barraqué.[376] The first live performance of Boulez's music at the Darmstadt Summer School was Loriod's German premiere of the Second Piano Sonata in 1952.

Cage was less impressed, however, when he received the 1950 recording of *Soleil des eaux*.[377] Boulez confirmed that, due to its origin as a radio drama, the work had a quite simplistic structure indeed. On the other hand, Cage had been fascinated by the score of Boulez's String Quartet during his Paris visit. Two New York string quartets had shown interest, although Cage had warned them that two years rehearsal time would

[374] Cage received two copies of Boulez's Second Sonata, probably in March 1950, one from Boulez and one from publisher Heugel. See NATTIEZ 1990, p. 93. Cage gave one to Virgil Thomson and the other one to Morton Feldman who, in turn, lent the score to David Tudor. When Cage found out in the summer that Masselos had not even begun to study the music, Feldman alerted him to Tudor's activities.

[375] Cage, letter to Boulez, 17 January 1950. NATTIEZ 1990, p. 123; NATTIEZ 1993, p. 78.

[376] More details on this class, on p. 307 ff.

[377] Cage, letter to Boulez, December 1950. NATTIEZ 1990, p. 124. "the parts that interest me most are at the beginning and at the end… […] But I have a feeling that this is an earlier work…." Boulez replied: "…c'était un faux pas…" Ibid, p. 134. ("that was a step in the wrong direction"). NATTIEZ 1993, p. 86.

be required—at a minimum. (Ultimately that project did not come to fruition; the score of the String Quartet was not to be published until 1960 and its premiere had to wait until the 1980s.) Cage promoted Boulez's Second Piano Sonata when he traveled within the U.S.A.:—"I always take your music with me [on tours] (spreading the gospel)."[378] In the spring and summer of 1950, Boulez planned to visit Cage in the States, and Cage spent much time on arranging the financial details of that visit. When he finally succeeded in finding Boulez a three-months stipend for the fall of 1950, he was overjoyed. His efforts still came to naught when the American authorities harassed Boulez. They took multiple 'series' of his fingerprints and posed numerous other obstacles in his way. Finally Boulez had to cancel all plans for his trip in 1950. Cage was so disappointed that he stopped writing to Boulez for more than half a year: after August/September 1950, his next long letter dated from May 1951.

*
* *

It is impossible to discuss in detail all developments regarding timbre composition in this three-year period—on both sides of the Atlantic. In our current context, we will have to limit the exposition to an overview and highlight the important facets of these dynamic developments. Boulez and Cage were entering a period of intense experimentation and innovation, with very different results. In addition, Morton Feldman became an influence for Cage, so that we will extend some remarks on the new angle contributed by Feldman as well as Feldman's relation to Boulez.

Boulez revised a number of his earlier works; he purged the Ondes Martenot from them and orchestrated them. The first of his new projects was *Trois essais* (1950) for

[378] Cage, letter to Boulez, 22 May 1951. NATTIEZ 1990, p. 155.

percussion ensemble, inspired by Cage's *Construction in Metal*. A first rehearsal and recording of these works convinced Boulez that he was on the wrong path, unable to equal the effect of Cage's work.

The following, very ambitious work for chorus and orchestra, took its inspiration from Mallarmé's poem *Un coup de dés* and the chorals of Bach. In "Moment de Jean-Sébastien Bach", written in early 1950, Boulez highlighted the poem's importance by closing his article with the poem's last line as a postscript: "Chaque pensée émet une coup de dés."[379] Mallarmé's poem is about the mystery of chance. The aspect of chance, as seen above, links to Mann's "Magical Square" excerpt. Mann and Mallarmé appear to reach very similar conclusions in their inner philosophical debate about freedom and law. Both break the linearity of discourse: chance, magic, and accident are irreducible in the end—unless faced head on. In *Un coup de dés* of 1914, Mallarmé made ample use of blank spaces and set words in different letter size or type. Invading syntax, blank space breaks the mirage of linear thought and highlights multiplicity of meanings—the poetic equivalent of timbre composition. Using different letter size and type, Mallarmé profiled words as isolated units and, through this formal aspect of the poem's 'material', promoted various non-linear, reading strategies, showing yet another parallel to pointillist timbre compositions and their perception. Boulez had been reading Mallarmé's *Igitur* and *Un coup de dés* in 1948–49.

Cage, however, was the first to draw tangible artistic results from Mallarmé's poem. Within weeks after returning to New York he wrote his "Lecture on Nothing", a musical realization of his own composition theory in square-root form. The five major parts of

[379] "Every Thought expresses a Throw of the Dice." Boulez, *Stocktakings*, p. 14. Stéphane Mallarmé, *Poème: un coup de dés jamais n'abolira le hasar*d (Paris: Editions de la Nouvelle Revue Française, 1914).

the lecture respectively concern musical form, structure, musical materials, [nothing], and composition method.[380] In contrast to "Forerunners of Modern Music" which speaks to the rational intellect—the original article contained footnotes and looked more scholarly than the recast format reprinted in *Silence*—the words of Cage's theory now function as concrete sound for the senses. It is music. The introduction of 'nothing' as a fifth and equivalent part in this lecture-composition documents another milestone on Cage's path towards a musical silence; an activist silence that speaks.

By the end of 1950, without abandoning work on his composition *Un coup de dés* (1950–51), Boulez engaged in a second ambitious project: a set of fourteen to twenty-one instrumental *Polyphonies*. For the first piece of the planned cycle, Boulez created a pitch series hierarchy by deriving multiple series from a single 24-quarter-tone mother series. The process, described in the 30 December 1950 letter to Cage,[381] resulted in three 24-quarter-tone series, two 12-half-tone series, four defective 12-quarter-tone series, four derived twelve-tone series, and one synthetic ideogram 12-tone series—in other words, thirteen pitch series relating to a single mother series.

Looking for rhythmic forms that would match this opulent universe of pitch series, Boulez designed seven rhythmic cells, each type of cell being subject to seven rhythmic transformation series and thus resulting in an equally rich set of forty-nine rhythmic patterns. Boulez envisioned a counterpoint of polyphonies, where various instrumental forces would articulate form, thus giving timbre a functional role on the macrostructural level.

[380] See Figure 10 on page 269 for the scheme of Cage's universal theory of music. See Pritchett, *The Music of John Cage*, pp. 55–60 for a longer analysis of "Lecture on Nothing".
[381] NATTIEZ 1990, pp. 129–30.

Reporting the project to Cage, Boulez stressed he would use the idea of sound-aggregates and that, like Cage, he would use material on purely constructional basis without interference from aesthetic choices. Boulez realized only one of the projected twenty-one works: *Polyphonie X.* Since he withdrew *Polyphonie X* after its October 1950 premiere in Donaueschingen, the composition joins the mysterious, elusive group of Boulez's aborted 1950–52 composition projects.

In summary, then, the list of Boulez's aborted or withdrawn projects includes *Trois essais* (1950) for percussion orchestra, *Un coup de dés* (1950–51) for orchestra and choir, *Polyphonie X* (1950–51) planned as a cycle of fourteen to twenty-one orchestral works, (in a second step, reduced to chamber orchestra; then abandoned), *Oubli signal lapidé* (1952) for twelve solo voices (the same scoring than Messiaen's *Cinq réchants* of 1948) and, finally, the *Deux études* (1951–52) for magnetic tape. In addition, Boulez withdrew the revised versions of *Le soleil des eaux* and *Le visage nuptial*.

Inspired by both the encounter with Messiaen's *Mode de valeurs et d'intensité* and the work that he knew Cage was doing in New York, Boulez took up work on a large piano cycle entitled *Structures* some time in 1951. The exact composition date of the first section, *Structures Ia*, is of historic interest because Boulez lays claim to having found a musical equivalent of Roland Barthes's degree zero of writing. When one of Boulez's friends brought the score of *Mode* to his attention, Boulez immediately went out to buy his own copy and, in a single night of excitement, composed *Structures Ia*: "As soon as I saw it, I jumped at it."[382] The four separate scores of *Quatre Etudes de rythme*

[382] Heyworth, "The First Fifty Years", p. 13. The friend is unnamed and Heyworth does not document his source.

were published on 27 November 1950, thus forming a *terminus post quem*.[383] A month later, Boulez announced to Cage his *Polyphonies* project, still not mentioning *Structures*.[384] Boulez's letter of 7 May 1951 establishes a *terminus ante quem*; it contains first details of a new project, a large piano cycle entitled *Structures*. A missing collective letter from the New York branch of the Transatlantic School to Boulez from early March 1951 must have contained information on a Feldman composition—also called *Structures*—because in his May letter Boulez made an apology to Feldman for using the same title. Boulez argued that he had rights to keep the title *Structures*, since he had decided about it prior to the arrival of New York branch's communal letter.[385] All this suggests, then, that Boulez composed *Structures Ia* around February 1951, plus or minus one month.[386]

The chronology shows that work on the *Polyphonies* and the *Structures* began within months, showing not only the connection but also the difference between two worlds of musical thought. While the preparations for the *Polyphonies* show a staggering level of musical complexity, this planning takes place on the level of musical syntax. Compositional concern for timbre is applied in a very systematic way (seven timbre groups, seven instruments each), but this concern does not extend to the microstructure of timbre composition. In Messiaen's *Mode*, this compositional concern for the microstructure was obvious. We discussed Boulez's very immediate reaction above. He

[383] For the publication information of *Mode*, see Simeone, *Olivier Messiaen*, p. 105.
[384] Boulez, letter to Cage, 30 December 1950. NATTIEZ 1990, pp. 128–39.
[385] "Seymour Barab ... m'a donné votre lettre collective il y a ... bien deux mois déjà." NATTIEZ 1990, p. 146. The letter is missing from the Boulez correspondence. Ibid., fn. 4. ("Seymour Barab ... gave me your group letter two months or more ago now.") NATTIEZ 1993, p. 90.
[386] Basing herself also on the Boulez-Cage correspondence, Imke Misch comes to a slightly different view. She dated Boulez's *Structures Ia* to the spring or summer of 1951, but does not explain her reasoning. Imke Misch, *Zur Kompositionstechnik Karlheinz Stockhausens: 'Gruppen' für 3 Orchester (1955–1957*) (Saarbrücken: Pfau, 1999), pp. 13–15.

'pulverized' Messiaen's complex mode on the level of microstructure. While Messiaen had used the inner characteristics of sound to create a *fixed*, multi-dimensional color mode with thirty-six timbres, Boulez proposed to render these points *flexible* in regard to one another, creating thousands of different synthetic timbres in a multi-dimensional continuum. He felt that this approach opened a new universe for compositional thought and, keeping in mind the projected macrostructural complexities of his *Polyphonies*, *Structures Ia* added the possibility, in the future, of extending such complexities in the microstructure. Almost two years after Messiaen composed *Mode* and after Cage first had stirred a sense of disquiet for timbre in Boulez, the circle had been closed. *Structures I* stands out as Boulez's only completed work among a long list of abandoned and withdrawn compositions in the period 1950–52. In his article "Eventuellement..." Boulez discussed his latest acquisitions in the realm of Classic timbre serialism, his discovery of synthetic timbre serialism, and his hope to find a unifying principle for both micro- and macrostructure through the access to technology. He emphasized how closely his discoveries of all of these principles related to the work of Cage in New York.

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While Boulez had been fascinated by Cage's composition of the microstructure of sound, Cage was deeply impressed by Boulez's compositional complexity in the macrostructure. The music of the Second Piano Sonata was never far from Cage's mind while he completed several projects upon his return to New York in 1949. He composed and performed *Lecture on Nothing*, wrote and realized music for a film on Calder's mobile sculptures, and finished his String Quartet in Four Parts and the Six Melodies for

Violin and Piano by mid-1950. Later that year he explored methods that allowed him to avoid imposing his subjective choices on the note-to-note continuity. Instead of the linear gamut of sounds, he set up sound charts permitting him to select sounds by making moves in the two-dimensional plane of the charts.

Boulez's Sonata, Mallarmé's *Un coup de dés*, and the *I Ching*, formed the backdrop for Cage's next project, which was conceived around the end of 1950 or early 1951. One day Christian Wolff brought along the *Book of Changes,* or *I Ching,*[387] and Cage started using its coin-tossing method for determining one of sixty-four different oracles as a component of his composition method. Through the preparation phase for the premiere of Boulez's Sonata in December 1950 Cage and Tudor became close friends and, all of a sudden, Cage had a performer of superb virtuoso abilities at his disposition.

Cage set out to write a work for piano, comparable in complexity to Boulez's Second Sonata and, for this purpose, read Boulez's articles "Propositions" and "Trajectoires" to refresh his mind with what they had discussed in Paris. His interpretation of these texts is evident in the refined way that he extended the principle of the gamut chart. He set up parallel charts for rhythmic cells and dynamic markings, and thereby subjected various musical dimensions to a uniform control interface. In principle such ideas were not new to Cage; Cowell had suggested similar procedures in his *New Musical Resources* in 1930

[387] In this connection, Wolff's background is of interest. Born in France in 1935, he came from an uncommon family. His father Kurt Wolff, elsewhere described as the 'ideal type of publisher', was born in 1887 in Bonn and established the Kurt Wolff Verlag after the First World War. His program included Expressionists (Benn, Heym, Toller, Trakl), Dadaists (Ball, Huelsenbeck, Tzara), and a number of artists (Gauguin, Grosz, Klee, Kokoschka, Kollwitz, Kubin, Masereel). He corresponded with literary figures such as Gerhart Hauptmann, Hesse, Kafka, Karl Kraus, Else Lasker-Schueler, Heinrich and Thomas Mann, Rilke, Werfel, Wedekind, Gor'kii, James Joyce, Tagore Rabindranath, and H. G. Wells. After his emigration to the United States in 1940, Wolff started Pantheon Books virtually on a shoestring. By 1950 the program included the English translation of the *I Ching*. Kurt Wolff's son Christian brought the *I Ching* fresh from the press to Cage, highlighting once more Cage's continuous relation with the pre-war European culture including, once again, the German Bauhaus: in a letter from March 1950 to Boulez, Cage mentions that Christian's father used to play music with Paul Klee.

and Cage was a good student of Cowell. The specific implementation, however, was new. Prior to beginning the composition, Cage had determined that the sixty-four oracles of the *I Ching* would be used for the note-to-note technique. That suggested the chart size of eight by eight fields. Each chart was used to a different degree in each dimension. The gamut chart had thirty-two timbres and thirty-two silences, the intensity chart had only sixteen dynamic schemes with empty fields requiring no change in dynamics, and the durational chart was filled with sixty-four rhythmic cells, proudly displaying the primacy of temporal thinking over pitch.

An interesting innovation occurred in the gamut materials where Cage thus far only had been employing isolated sounds, intervals, and aggregates. Inspired by the Second Sonata, Cage added a new gamut element containing more complex arrangements of notes, such as flourishes, chords, or trills. He called this element 'constellation', laying a link back to Mallarmé's poem *Un coup de dés* in which the term appears in proximity to 'nothing' and 'chance': "IT WOULD BE… CHANCE… NOTHING… WILL HAVE TAKEN PLACE… BUT THE PLACE… EXCEPT … PERHAPS… A CONSTELLATION". Highlighted within the flow of the poem through a different typographical layout, these words end Mallarmé's poem at that particular hierarchical text level.

The term constellation also links back to Mann's *Doktor Faustus*, where Leverkühn states that "[t]he polyphonic dignity of every chord-forming note would be guaranteed by the constellation." One may wonder with how much interest Cage would have read Mann's book and its revelations about the twelve-tone composition method, since Schoenberg never taught Cage the twelve-tone technique he so admired. At the very

least, the Schoenberg method could have been suspected of containing secret elements, known only to the inner circle.

Since Boulez had announced "A Toss of the Dice" as major composition project in 1950 without revealing much about its inner construction or composition methods, one is also left to wonder how literally Cage might have taken the title's suggestion. For him a chance method on the local level did not constitute a major departure of significance:

> Method may be planned or improvised (it makes no difference: in one case, the emphasis shift towards thinking, in the other towards feeling; a piece for radios as instruments would give up the matter of method to accident).[388]

As mentioned above, Cage still employed the structural rhythm of the square-root form to control the overall structure of his music. Searching for a way to introduce a more flexibility into this rigid deterministic framework, Cage mapped the chronological time structure one-to-one onto the space of the score page. Now he subordinated this space to tempo manipulations. This seemingly small change constituted in fact a major departure for Cage. It subverted the tight mosaic-like macrostructure that had been at the basis of his music for more than a decade.

This change must probably be credited to the influence of Feldman who, strongly inspired by his contacts with the New York school of abstract expressionists, had explored a number of new graphic notations of music since early 1950.[389] In his *Projection 4* in 'Mondrian-notation' sounds are represented by rectangles. Their lengths in centimeters represent clock-time duration and their position on the page indicates high, middle, or low pitch. The presence of a number inside a rectangle calls for an equal

[388] John Cage, "Forerunners of Modern Music," *Tiger's Eye* (March 1949), quoted from *Silence* (1968), p. 62. N.B.: this dialectical thinking dates at least back to Cage's Vassar Lecture of February 1948.

[389] See Steven Johnson, ed., *The New York Schools of Music and Visual Arts: John Cage, Morton Feldman, Edgard Varèse, Willem De Kooning, Jasper Johns, Robert Rauschenberg* (New York: Routledge, 2002) for a comprehensive set of essays on the topic.

number of sounds to be played. Feldman describes this musical approach as a "visual-aural response to sound as an image gone inward creating a general synthesis".[390]

By December Feldman was Cage's closest composer friend in New York. His novel approach influenced Cage, but had no impact on developments in Europe. In April 1950 Feldman wrote a very kind letter to Boulez. He included two of his student works in traditional notation: *Illusions* (1948) and *Journey to the End of the Night* (1947) after Ferdinand Céline, scored for soprano, flute, clarinet, bass clarinet, and bassoon. These works are not serial but freely atonal, closer to the style Feldman's teacher Stefan Wolpe. Probably Feldman told Boulez of plans to replace the soprano by an oboe, in *Journey to the End of the Night*, which led Boulez to speak of an 'oboe-quintet' in his letter to Cage of May 1950. In that letter, Boulez said he found both works lacking.[391] Boulez finally sent a reply directly to Feldman in the first days of January 1951, elaborating on his criticisms.[392] Feldman may not have been too impressed by these criticisms, since he had been working in a totally different direction since 1950.

In July 1951 Wolff visited Boulez in Paris and brought him up to date with the latest developments, including details about Feldman's latest graphic score, *Projection 4*. In that work Feldman allowed performers to play a sound anytime after the beginning or a square, but demanded they stop playing when reaching the end of a square. From the correspondence with Cage we learn that Boulez "did not think much of Feldman's

[390] NATTIEZ 1990, p. 168.
[391] Ibid., p. 139.
[392] Ibid., p. 97.

attempts with white squares" and rejected them as too imprecise, adding, no doubt with intended sharpness, that Feldman should also leave endings of notes indeterminate.[393]

Christian Wolff gave Feldman a more detailed account of Boulez's reactions when was back in New York. In contrast to Boulez's earlier criticisms of Feldman's more traditional works, this time the criticisms hit Feldman at a sensitive spot. His relation to Boulez never recovered. In later years Feldman had only harsh words for Boulez—and the European avant-garde in general—and called Boulez 'provincial'.

Feldman's anger also threw discord onto the relations within the New York branch of the Transatlantic School. Soon after Brown's arrival in New York in 1952, a row over Boulez broke out between Feldman and Brown. Cage, on the other hand, looked upon Feldman's development with much sympathy and soon began exploring graphic approaches to music on his own. Thus in both *Imaginary Landscape no. 4* for twelve radios and the *Music of Changes* the formerly absolute time-lengths of the structure were mapped onto the space of the page with the 'speed of travel through this space being unpredictable'.[394]

Another striking innovation for Cage was his turn to polyphonic complexity in the *Music of Changes*. Each time segment of the *Changes* contained between one and eight horizontal threads, their number determined by a superordinate density chart. While the polyphonic structure was doubtlessly the result of Cage's infatuation with the Second Piano Sonata, his idea of a density chart was perhaps the source of Boulez's analog organization in *Structures Ia*. The close collaboration between New York and Paris in

[393] NATTIEZ 1993, p. 103. "..., je n'ai pas beaucoup apprécié les essais de Feldman en carrés blancs." NATTIEZ 1990, p. 163 ; see also pp. 156, 168, 175.
[394] Ibid., p. 169.

1951 is nothing short of amazing, and would be worth a full study by itself. Comparing the approach of Boulez's synthetic timbre serialism with his generalized chart-chance structuralism, Cage remarked:

> I am delighted with your charts; when I send you the *Changes* I shall also send you the charts I used. As I see it, the problem is to understand thoroughly all the quantities that act to produce multiplicity. These one will understand most nicely (fine differences) when aided technologically. I am enthusiastic about your project with Schaeffer & the radio, and anxious to be working on a similar project here.[395]

Boulez acknowledged their mutual collaboration extensively in "Eventuellement…", the text later regarded as the founding manifesto of serialism,[396] although some of Boulez's words must have remained obscure to readers at the time because of their limited knowledge and access to Cage's works.

The complex timbre worlds into which the transatlantic collaboration between Cage and Boulez ventured at this point remain largely unnoticed even today. The interaction between the various charts applied to the characteristics of sound dimensions or, alternatively, to higher structural elements of a composition, such as number of concurrent 'voices' or 'speed of travel' through 'space segments', brought Cage to conclude that in order to 'understand thoroughly all the quantities that act to produce multiplicity' one must resort to technology. The number of possibilities seen at the outset of this period was so large, and the perspective so daunting, that free use of technology became a necessity:

> More and more in my ears and those of younger composers (Boulez, Feldman, Wolff) are sounds which radio and film means make available, and our imaginations run swiftly towards the *necessarily* "synthetic." […]

[395] Cage, letter to Boulez, August 1951. Ibid., p. 176.
[396] Boulez, "Eventuellement...", pp. 189–90.

> What we desperately need in America is a laboratory for useless musical activity, devoted to failure rather than to success (research—A-1 in other fields —ignored in this one of art), and I record (shout) at this time that first Varèse tried to interest companies both in Hollywood and in New Jersey in such activity and then I myself spent a year (1940) trying to realize that same dream.[397]

From a slightly different viewpoint, Boulez also claimed that technological means were necessary to resolve current compositional problems. He argued that Cage's music had fundamentally challenged traditional notions of musical acoustics, including the utility of traditional instruments and the primacy of the octave as basic interval for scale design. Cage's strategy had led to emphasize timbre individuality but, in works of long duration the use of fixed timbres, through recurrences, lead to a dangerous all-embracing and *hierarchically-organized* neutrality. On the other hand, Boulez noted with some discomfort that, setting out from the serial premise of absolute equality between pitch elements, the permanently changing contexts in serialism resulted in an undesired *non-hierarchical* individuality for certain sounds. In a curious reversibility, both approaches had caused a paradoxical effect.

Boulez proceeded to laud the impersonal 'prismatic character' of Cage's *a priori* numerical macrostructures and his 'sonic amalgams', created from the interaction of timbres, intensities, and durations. Finally, Boulez pointed out that Cage's method was so closely analogous to his own extended type of serialism that he simply could not afford to describe explicitly the parallel strategy of Cage:

> Plus récemment, il s'est préoccupé de créer des relations structurelles entre les diverses composantes du son, et, pour cela il utilise des tableaux organisant chacune d'entre elles en des répartitions parallèles, mais autonome.[398]

[397] John Cage, "A Few Ideas About Music and Film," *Film Music New*s (January 1951), quoted from Kostelanetz, *John Cage, Write*r (1993), p. 65.

[398] Boulez, "Eventuellement...", p. 290. ("More recently, he has been working on setting up structural relations between the different components of sound, and for this he uses tables which organize each component into parallel but autonomous distributions.") Boulez, *Stocktakings*, p. 135.

The use of parallel but independent charts to compose the inner structures of timbre posed problems for which *musique concrète* technology, well understood as a means to answer the serious questions raised above, became *indispensable*. Boulez diplomatically excused the lacking organization in Schaeffer's previous studies and blamed their shortcomings on disc-based recording technology. With the imminent advent of tape recording technology and chart-based systems, he suggested, experimental research into complex rhythmic structures and synthetic timbres would become a necessity.

Thus both Boulez and Cage unanimously fostered the creation of experimental sound research centers for composers, based on their perception that their knowledge of musical acoustics and timbre was deficient. They intended to research the timbre multiplicities arising from the interaction of independently organized inner sound dimensions. A strict structural parallelism, as shown in *Structures Ia*, was a uniquely simplistic point of origin for further research, and neither Cage nor Boulez ignored the complexity of the matter. The experimental attitude that drove Boulez and Cage to look to technology for answers was shared by a number of composers, including Pousseur, Goeyvaerts, Fano, Philippot, Barraqué, Hambreus, Schaeffer, Gredinger, Messiaen, and Stockhausen. All of them were prepared to begin once more at ground zero, leaving behind all traditional notions of musical structure, in order to investigate the inner nature of timbre and test new structural organizations in various sonic and perceptional dimensions for their aesthetic validity.

CHAPTER 4: RADIO RESEARCH AND CONCRETE MUSIC 1948–51

The following pages introduce the sometimes dazzling, often elusive figure of Pierre Schaeffer—a French media pioneer, patriotic fighter on both political and musical front lines, prolific author, visionary engineer and, finally, sometimes reluctant, sometimes enthusiastic realizer of a futurist type of classical music. The discussion is organized into two major parts, each of them subdivided into five sections.

The first part concentrates on the radiophonic experiments of 1948 and the resulting set of studies, which were broadcast as a 'Concert of Noises', in June 1948 in Paris and, a second time, in October 1948, in France. These experiments were first discussed in a February 1950 article—nearly two years after the events—in the form of a retrospective research log, which mingled past and present to a considerable degree and therefore poses a number of challenging questions. These questions become evident if one compares this first research log with a second version covering the same events, but published four years after the events. Due to the virtuosity of author Schaeffer, concrete music was a dynamic notion that contained its past and future as a mirror of the present. The first log is taken as the guiding primary document, and contradictions or confusing issues will be addressed.

The second part introduce the brief two-year period of concrete music proper, which lasted from the summer of 1949 to the summer of 1951. The term and the project 'concrete music' were conceived in 1949 and made public only in late February 1950, shortly before an absolute world premiere concrete music concert took place in Paris in March 1950.[399] Concrete music was made with shellac discs—the original sonic objects

[399] In this text, we use side-by-side the French '*musique concrète*' and its translation 'concrete music'.

—and it ended when the Paris studios moved to a more versatile magnetic tape technology over the course of 1951.

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Pierre Schaeffer's life-long research into the significance of recorded sound was based on a multi-disciplinary, eclectic methodology. He produced a critical mass of writings on the topic and might be described as an electroacoustic Heinrich Schenker, who aimed to replace the *Ursatz* by a theory of the musical object. The abstract-concrete dichotomy (thought and writing vs. sensual experience and media technologies) appears in his writings as early as 1941.[400] Although his works were not translated into English, an international group of connoisseurs followed this original French thinker into the dense labyrinth of his acousmatic world, exploring seminal works such as *Traité des objets musicaux* and *Solfège de l'objet sonore* from the later 1960s. An influential 'Schaefferian subculture' has arisen in the United Kingdom in the 1980s, featuring composers Trevor Wishart, Simon Emmerson, and Denis Smalley.[401] Historically, Schaeffer created the worldwide oldest electroacoustic music research group. The

[400] See Pierre Schaeffer, "Technique et esthétique des arts-relais," (1941), quoted from Pierret, *Entretiens avec Pierre Schaeffe*r (1969), pp. 91–92, and Pierre Schaeffer, "Esthétique et technique des arts-relais," (1941), quoted from Brunet, ed. *Revue musicale* 303–5 (1977), pp. 19–23. According to Schaeffer, writing is at ease in the abstract domain but yearns for concretion. Conversely, the relay-arts film and radio are at home in the concrete domain but yearn for abstraction. This Schaefferian premise is helpful in deciphering his early texts on *musique concrète*.

[401] Important publications include Trevor Wishart, *On Sonic Ar*t (York, UK: Imagineering Press, 1985) and Simon Emmerson, ed, *The Language of Electroacoustic Musi*c (London: MacMillan, 1986). John Dack of the UK-based Sonic Arts, states: "Historically, Schaeffer's position as the founder of *musique concrète* is unquestionable. Nevertheless, his position is often relegated to little more than a passing reference in books on contemporary music. Such a superficial account belies a more accurate description of the man as a prolific writer (both of fiction and on the mass media), music-theorist and composer." John Dack, "Pierre Schaeffer and the Significance of Radiophonic Art," At *Sonic Arts Networ*k, (<http://www.sonic.mdx.ac.uk/research/dackpierre.html> accessed on 18 August 2003), original document from 1994. Emmerson and Smalley co-signed the *New Grove 2* entry on 'Electro-Acoustic Music'.

Groupe de recherches musicales concrète (GRMC) began its official work in October 1951 under the auspices of French National Radio.

In the context of this study, the very earliest period of Schaeffer's activities until about 1953 is of particular importance. My historic research is based on a few key primary resources. Most important is a lone, pioneering text from 28 February 1950. Published in a special *Polyphonie* issue entitled "La Musique mécanisée", this essay-log can be regarded as founding manifesto of *musique concrète*,[402] combining Schaeffer's 1948 research log (first version = 'log 1a') and analytic commentary. Occasionally I shall refer to data derived from a revised version of this early essay (due to the inclusion of a second 1948 research log abbreviated as 'log 1b') or a second essay-log, covering the experiences in 1950–51 ('log 2'). These three essay-logs are certainly primary resources, but they were written one or two years after the events and Schaeffer freely shifts between the past described and the present of writing.[403]

Discrepancies between the logs prove that these are not genuine but retrospective dramatizations, in which historic facts were arranged to suit various purposes. The log dates, for example, do not match one another between the versions. Roughly, these texts cover the same experiences; in practice many log details belong to 1950, in the case of log 1a, or 1952, for logs 1b and 2. This can lead to misunderstandings; it complicates the

[402] Pierre Schaeffer, "Introduction à la musique concrète," *Polyphoni*e, 6 (28 February 1950), pp. 30–52. Journal issue dedicated to 'Mechanized Music'. The three major sections are 'Radio, Sound Film, and Recording' and Schaeffer's article appears in the 'Radio' section. This journal issue was printed on 28 February 1950, but Schaeffer signed his article December 1949.

[403] Pierre Schaeffer, *A la recherche d'une musique concrèt*e (Paris: Seuil, 1952). The book contains four chapters. The first two chapters are entitled 'research diaries', but the log section is combined with an analytic essay. The first essay-log is a revision of the 1950 manifesto (introducing substantial changes). The second essay-log covers the period 1950–51, but was also written one or two years after the events. The book's core is the third chapter, where Schaeffer outlined the framework for concrete music research. Together with his new role as head of an experimental music research group, Schaeffer announced the end of his career as composer (p. 197). The fourth chapter contains Schaeffer's and Abraham Moles's proposal for a scientific classification of sonic objects.

analysis of historic influences and, on the whole, creates an aura of myth surrounding the origins of concrete music.

Schaeffer, a man of many talents, was also a prolific writer of novels and plays.[404] In order to promote his path-breaking discoveries, he employed all of his talents and these happened to include an expertise in the use of literary tools. It is a different matter, however, when writers of secondary literature confuse such promotional or aesthetic choices with historic evidence. I tend not to share the view of authors who cite Schaeffer's log entry from 15 April 1948, for example, to pinpoint the beginning of *musique concrète*. Two years earlier or later may not matter during stagnant periods of music history, but in the lightning-speed changes between 1949 and 1952 such an interval becomes vast.

Radiophonic Research 1948

Musique concrète had its origins in radiophonic art. Since the 1920s, radio plays had grown into an important cultural phenomenon, eventually widening into a branch of entertainment industry. Broadcast stations had specialized sound effect departments, which developed catalogs to maintain their holdings. These catalogs played a crucial role for radio play directors, responsible for creating the suggestive acoustic environments demanded by the public.[405] A noteworthy example of the genre was the radio play *War of the Worlds*, hitting the airwaves of the Greater New York area on the Halloween

[404] A selective list of books written in the five years preceding the birth of *musique concrète*: *Clotaire Nicole* (1944), *Amérique, nous t'ignorons* (1946), *Jeux profanes* (1946), *Jeux sacrés* (1947–48), *Les enfants de coeur* (1949). See Sylvie Dallet and Sophie Brunet, *Itinéraires d'un chercheur: Bibliographie commentée de l'Oeuvre éditée de Pierre Schaeffe*r (Montreuil: Ed. du Centre d'études et de recherche Pierre Schaeffer, 1996).

[405] Cf. Schaeffer's reference to specific sound effects by catalog number, such as "the well-known no. 2225." SCHAEFFER 1950, p. 37. No. 2225 featured train sounds—departing, arriving, whistle, in the train, train in the distance, etc.—which were very frequently employed in radio plays.

evening of October 1938. The broadcast generated a mass hysteria that spilled over to other U.S. states, as thousands of radio listeners were led to believe the Northeast had come under attack by Martians.[406] This illustrates the power of radio plays during Pierre Schaeffer's forming years. In the year of *War of the Worlds*, Schaeffer published lessons and exercises for the mixing-desk *musician* and an essay on normal vs. radio listening.[407] In 1943 he set up a studio for radio art research (*Studio d'Essai*, renamed *Club d'Essai* after the liberation of Paris). He wrote and produced the radio play *La coquille à planètes*, 'a fantastic suite for voice and twelve monsters' with music by French composer Claude Arrieu—who also worked as head of the Sound Effects Department of French Radio—and many experimental sound effects. It was a direct antecedent of Schaeffer's 1948 research into noises.[408]

The predecessors of *musique concrète*—which, adopting Schaeffer's terminology, we will call 'Primitives'—were described in the concrete music manifesto, published on 28 February 1950. This manifesto included the retrospective research log 1a, describing in journal format events that had occurred about two years before (January to June 1948). In the log 1a (and not in log 1b from 1952), Schaeffer claimed to have only vague recollections of his motivation to begin another radiophonic season:

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[406] "Radio Listeners in Panic, Taking War Drama as Fact", *New York Times* (31 October 1938). Includes samples of nation-wide reactions, such as: "Atlanta reported that listeners throughout the Southeast 'had it that a planet struck in New Jersey, with monsters and almost everything and anywhere from 40 to 7,000 people reported killed." In 1945, Schaeffer and Orson Welles collaborated on the radio documentary "Liberation of Paris".

[407] See Pierre Schaeffer, *Vingt leçons et travaux pratiques destinés aux musiciens mélangeur*s (Paris: Radio Française (internal publication), 1938) and Pierre Schaeffer, "Verités premières," *Revue musical*e 184 (1938), 414–15, quoted from Brunet, ed. *Revue musical*e 303–5 (1977), pp. 16–17.

[408] Pierre Schaeffer, *Propos sur la Coquille: Notes sur l'expression radiophoniqu*e (Arles: Ed. Phonurgia Nova, 1990) and Pierre Schaeffer. *La coquille à planètes: suite fantastique pour une voix et douze monstre*s. Four CDs and disc notes. Paris: distr. Adès, 1990.

> Si je cherche ce qui m'a amené à reprendre une saison de radiophonie en été 1948, je ne m'en souviendrai plus. Il était question d'une symphonie de bruits. Il y avait eu une symphonie de psaumes.[409]

To the best of my knowledge the exact motivation for this symphony, if indeed this was Schaeffer's radiophonic project for the 1948 summer semester, remains unknown. In the initial phase of the project, Schaeffer brought a vast set of instruments from the French Radio's Sound Effects Department into the studio. He moved a heavy workbench into the studio, collected war-damaged, defective organ pipes for percussive needs, built an instrument from pieces of wood, and thought about prototypes of new music instruments that would combine tones with noises, such as an electro-magnet controlling the vibrations of a blade in front of some resonance cavity. Calling the heterogeneous set of instruments in the studio a 'noise piano', Schaeffer composed a first score *à tout hasard* and performed it with anonymous studio collaborators.[410]

The Most General Music Instrument Imaginable

The depressing musical results from this first phase of physical instrument building drove Schaeffer to seek refuge in the neighboring recording studio. By accident, he recorded the sound of a bell after the attack phase, thereby transforming the bell into an oboe. This breakthrough experience, well-known throughout the *musique concrète* literature as 'la cloche coupée' (the cut bell), led Schaeffer to understand that the recording equipment was not only able to function passively as an acoustic mirror but, in fact, constituted a mining tool to explore actively the concrete matter—shellac discs—for

[409] SCHAEFFER 1950, pp. 30–31. ("I no longer recall my motivation to take up another radiophonic season in the summer of 1948. There was talk about a symphony of noises. A symphony of psalms existed already.") Note the reference to Stravinsky. Schaeffer studied musical analysis with Nadia Boulanger in the 1930s.

[410] That score, curiously, is not related to any of the studies Schaeffer presented in his manifesto and we don't know more about it than the information I gave above.

new sounds.[411] As an example, he quoted his discovery that transforming dynamic envelopes could be used to good effect. This 'hands-on' studio work with technical gear led Schaeffer to realize that disc-recorder and player, along with a rich supply of recordable and recorded shellac discs, constituted a musical instrument:

> J'enregistre ainsi une série de notes fabriquées de cette façon, chacune sur un disque. En disposant ces disques sur des picks-up je puis, grâce au jeu des potentiomètres jouer de ces notes comme je l'entends, successivement ou simultanément.[412]

Nothing illustrates better the concrete nature of Schaeffer's discovery: *each* musical note corresponded to *one* 78-rpm shellac disc with a locked groove.[413] Swapping discs and handling volume controls on this primitive version of a sound sampler, DJ Schaeffer

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[411] Elsewhere Schaeffer directly contradicts the notion of a breakthrough experience, suggesting a more gradual discovery process took place: "Naturellement je n'ai aucun souvenir particulier de l'instant où cette prise de son a été réalisée. Elle est d'abord passée inaperçue." SCHAEFFER 1950, p. 36. ("Naturally I have no particular recollection of the moment when I realized this sound recording. At first it passed unnoticed.") N.B.: the importance of the attack phase for timbre perception was established among acousticians and phoneticians at an earlier date. Stumpf's seminal research on speech sounds included an appendix on timbre perception of music instruments: "Um nun einen genaueren Begriff...zu bekommen...stellte ich (1910) Versuche an, bei denen die vom Ansatz und Verlauf des Klanges abhängigen Kennzeichen dadurch ausgeschloßen wurden, daß nur ein zeitliches Mittelstück des Klangs (p. 375) ausgeschnitten und 2 Sekunden lang dargeboten wurde." (In order to form a more accurate idea ... I set up experiments (1910), where the beginning and ending sound characteristics were excluded by excerpting the central sound portion and presenting it for two seconds to listeners.) Karl Stumpf, *Die Sprachlaute: Experimentell-phonetische Untersuchungen nebst einem Anhang über Instrumentalkläng*e (Berlin: J. Springer, 1926), pp. 374–75. The setup for these experiments employed two rooms, connected by a sound tunnel. Experienced listeners were presented with the steady-state portion of timbres from 12 different instruments. Without the attack phase, listeners were increasingly unable to make accurate judgments about the sound source. Schaeffer advanced the 'cut bell' as the origin of *musique concrète*: "..., toute la musique concrète était contenu en germe dans cette action proprement créatrice sur la matière sonore." SCHAEFFER 1950, p. 36 fn. 1. ("..., the seed of concrete music was contained entirely in this essentially creative action on the acoustic material.")

[412] SCHAEFFER 1950, p. 34. ("I record a series of notes produced in that manner, each on one shellac disc. Putting these discs on the [four] players, I can play these notes in succession or simultaneity by operating the volume controls.") Schaeffer's 1938 training manual for sound mixing *musicians* implies that he had long been an expert DJ. Pierre Schaeffer, *Vingt leçons et travaux pratiques destinés aux musiciens mélangeur*s (Paris: Radio Française (internal publication), 1938).

[413] The locked groove is the second fundamental concrete music technique—and, I would argue, the more characteristic discovery. Not mentioned directly in the manifesto, it is implied in the description of the one-note-per-disc process. By 1952 Schaeffer had added an extensive section on the locked groove to research log 1b. There he acknowledged the process had been famous from an Edith Piaf song, but claimed for himself the discovery of its systematic use. Pierre Schaeffer, "Premier journal de la musique concrète: 1948–49," in *A la recherche d'une musique concrèt*e (Paris: Seuil, 1952), pp. 39–40.

performed simple melodies and chords with up to four notes.[414] He complained that "the instrumental technique of this ensemble was cumbersome, barely suited for virtuosity".

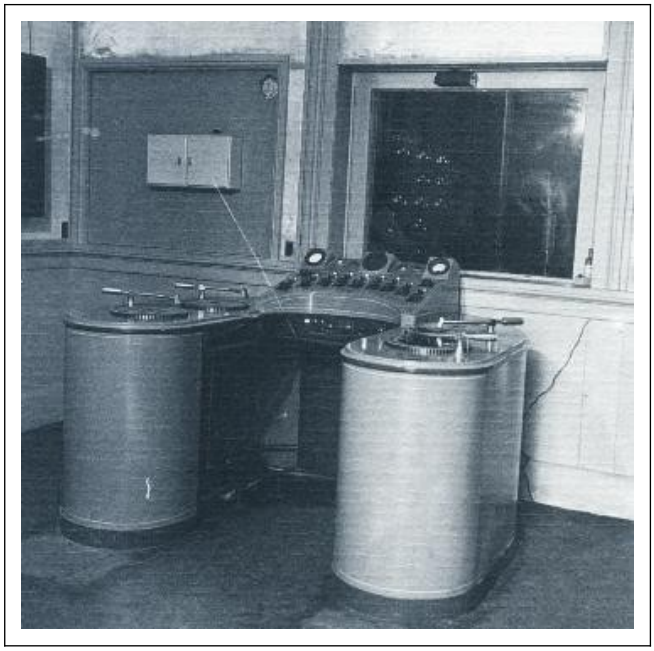

Figure 7: Schaefferian Four-Note Instrument around 1948 [415]

Feeling the pain of disposing only of "one note per disc player", he dreamed of solving the dilemma by surrounding himself with 144 disc players.[416] From this daydream Schaeffer took an additional, decisive step. He generalized his primitive instrument, imagining a version capable of replacing all existing and conceivable music instruments:

> ..., soit un clavier qui mettrait en action les pick-ups simultanément ou successivement, grâce à un mélangeur à *n* directions: on obtient *théoriquement* un instrument-gigogne capable non seulement de remplacer tous les instruments existants, mais tout instrument concevable, musical ou non, dont les notes correspondent ou non à des hauteurs données dans la tessiture.[417]

[414] The abbreviation DJ refers to the "disc jockey" phenomenon and, in particular, to the creative use of vinyl discs in rap and dance-club cultures since the 1980s. Prior to 1951 Schaeffer and Henry exclusively worked with discs and thus became distant forerunners of this modernist DJ music culture.

[415] Pierre Schaeffer. *Propos sur la Coquille: Notes sur l'expression radiophonique*. Followed by conversation with Rudolf Frisius. Arles: Ed. Phonurgia Nova, 1990, p. 35. Photo © Editions Phonurgia Nova, by permission.

[416] All loc. cit.

The recording and playback technology of the radio were thus not simply understood as a precursor of the sampler, as is often wrongly surmised. Far more importantly, the 'cut bell' experience showed that the equipment could be turned into a tool for the exploration of sonic matter, in which Schaeffer suspected an infinite supply of unheard sounds. He saw in this 'mother of all instruments' an analog to Einstein's relativity theory. It unlocked the potentialities of the sonic matter as relativity had unlocked the power contained in the atom. He filed and secured a French patent for 'the most general music instrument imaginable'.[418] We will return to this topic below.

Railway Pointillism and a Minimal Theory of Music

Despite inventing a theoretically infinite music instrument, Schaeffer's reality was disc-based and all too finite. He soon reached a crisis point, because his intention had been to produce a symphony and it now appeared as if he had wasted too much time with experiments. The French radio had lent him a studio in the hope of receiving broadcast material, and his recordings seemed 'stutterings' that would interest no one. He remembered that his initial project 'somewhere resorted to railways':

> J'ai une prédilection marquée pour la poésie ferroviaire. [...] Et, si je vais à la quête de bruits de chemins de fer, je serai enfin utile à la Radio française qui utilise toujours le même disque ...[419]

[417] SCHAEFFER 1950, p. 35. ("...imagine a keyboard that activates pick-ups simultaneously or sequentially according to an n-directional mixer: we theoretically obtain the mother of all instruments that would replace not only all existing instruments, but also all conceivable instruments, musical or not, the notes of which might or might not correspond to given pitches within the ambitus.")

Translator note: I prefer to render Schaeffer's word creation 'Instrument-gigogne' as 'the mother of all instruments'. Schaeffer referred to the theater character 'Mother Gigogne', a giant woman who gave birth to countless children, or to the Russian puppets that contain ever more small puppets when opened.

[418] This legal activity is not mentioned in the manifesto, but in Pierre Schaeffer, "Historique de la musique concrète," *Revue musicale*, 236 (1957), p. 137. The date of the patent is cited as 1948 and no further details are given.

[419] SCHAEFFER 1950, p. 37. ("I have a pronounced predilection for railway poetry. [...] And, if I went in search of railway sounds, I would finally be useful to French radio, which always uses the same disc ...")

This is doubly revealing. On one hand, we learn something about Schaeffer's aesthetics. Railway poetry relates more to the aesthetics of realist socialism—Jean Renoir's 1938 movie classic *The Human Beast* after Emile Zolá comes to mind—than to the futurist aesthetic often readily attributed to Schaeffer.[420] On the other hand, we learn that Schaeffer was worried about finally producing something of practical value for the radio, in this case a new set of train samples for the Sound Effects Department. He also admitted to a 'secret desire' to hear a concert of locomotives, showing no kinship with Marinetti's iconoclastic calls for a glorified, all-powerful god of technology. Schaeffer's description of the ensuing field recording session, replete with mobile recording unit from the French radio and six locomotives, is far more enthusiastic in log 1a:

> Je constate avec ravissement que ces locomotives ont des voix personelles. [...] J'enregistre avec amour.[421]

These blissful moments of fieldwork were followed by a month-long studio battle with railways caught in the grooves of shellac discs. Schaeffer composed a score in which he attempted to combine the concrete noise materials within formal frameworks reminiscent of concerto, opera, and sonata form: 'locomotive solo vs. tutti railway cars', 'leitmotifs', 'bridge', 'cadence', 'da capo', and 'recapitulation'.[422] The locomotives called up human qualities: "La machine souffle, s'arrête, se détend: anthropomorphisme. Tout cela est le contraire de la musique."[423] In addition, the train timbres strongly referred to the sound

[420] See Peggy Poole, *Marigolds Grow Wild on Platforms: An Anthology of Railway Poetr*y (London: Cassel, 1996).

[421] SCHAEFFER 1950, p. 37. ("With ravishment I observe that the locomotives have personal voices. [...] I record with love.")

[422] Schaeffer studied musical analysis with Nadia Boulanger and Claude Arrieu from 1935 to 1940.

[423] SCHAEFFER 1950, p. 39. ("The machine breathes, stops, relaxes: anthropomorphism. All of that is the contrary of music.")

source—calling up railway anecdotes—and the anecdotal clashed with the intended musical structure. Schaeffer found a timbre solution:

> j'ai réussi une séquence musicale où le même rythme isolé, alterne avec lui-même, dans une *couleur* sonore différente. Sombre, clair, sombre, clair... Le rythme peut très bien rester longtemps inchangé. Il fournit une sorte d'identité et sa répétition fait oublier qu'il s'agit d'un train.[424]

Rather than extracting sections from the railway timbre to generate musical objects—a process used successfully in the case of the bell—the solution here was to use longer rhythmic train sequences in their entirety. These larger sonic objects acquired an identity from their internal rhythms. Timbre, loudness, and pitch could still be changed, when the internal rhythmic structure was distinct enough to provide identity. A variety of sonic objects could be generated and, by using simple repetition, become elements of musical syntax. The anecdotal dimension would then become irrelevant—Schaeffer argued—because nature never repeated anything. The plan corresponded with Schaeffer's aesthetics. In log 1a he described the hypnotic effects of listening to raw recordings of railway rhythms for extended periods. He described the experience as a new type of 'generalized Czerny':

> ... goûter dans une monotonie des plus mécanique, le jeu de quelques atomes de liberté, les improvisations imperceptibles du hasard. *Diabolus in mecanica*.[425]

The *Study for Railways* contrasts anecdotal and musical sections. Schaeffer feared the public would prefer the anecdotal sections, but secretly hoped they would decide for the

[424] SCHAEFFER 1950, p. 39. ("I successfully created a musical sequence in which an isolated rhythm appears in alternation with itself, in a different timbre color. Dark, light, dark, light... Rhythm may very well remain unchanged for a long time. It provides a sort of identity and its repetition makes one forget the railway train.")

[425] SCHAEFFER 1950, p. 38. ("... within the most mechanical monotonies, [let us] taste the play of a few atoms of freedom, the imperceptible improvisations of chance. *Diabolus in mecanica*.")

musical ones. These musical structures are sketched in Figure 8, likely the first French electroacoustic music score.[426]

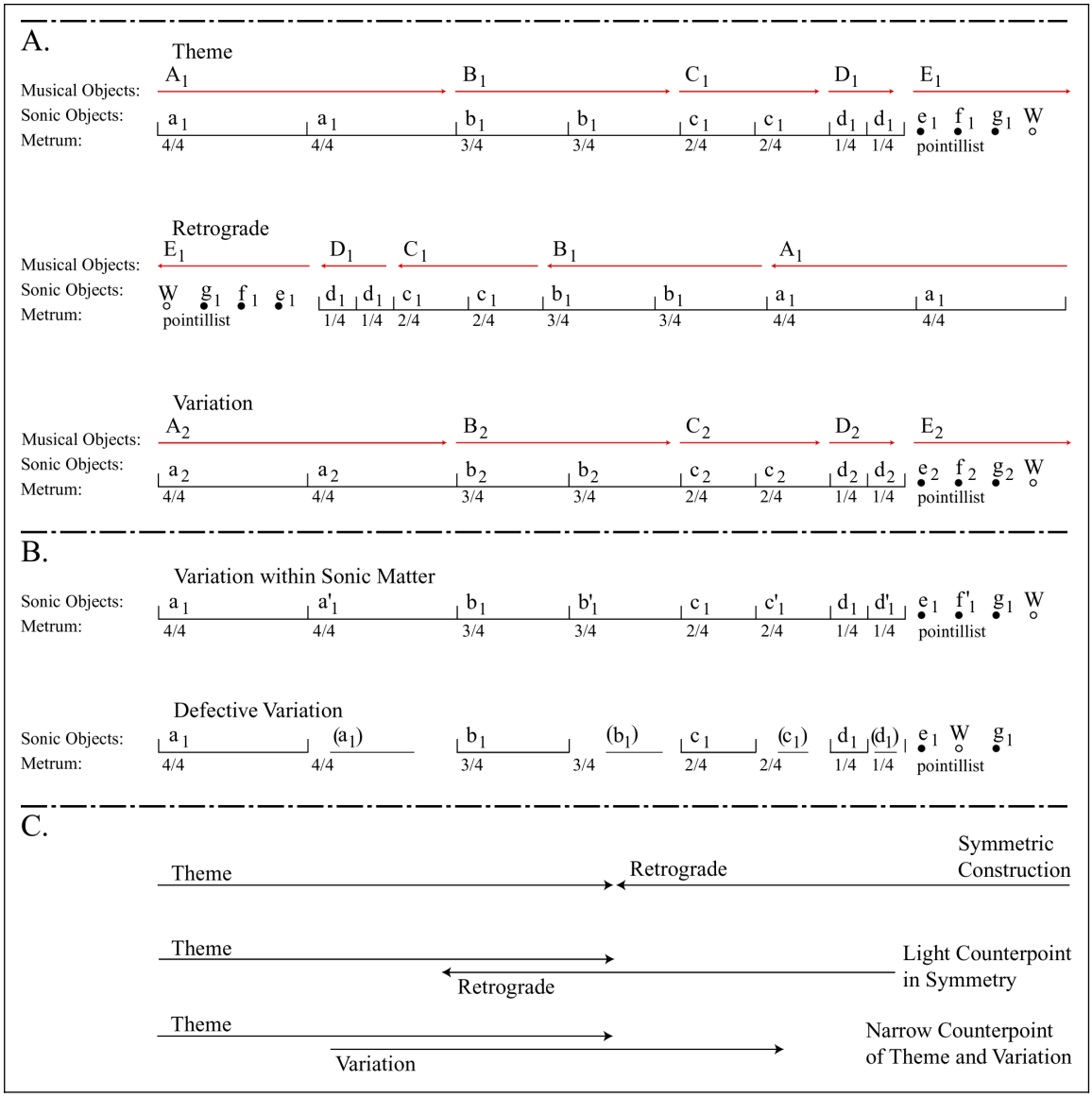

Figure 8: Railway Study: First Score of French Electroacoustic Music [427]

[426] I streamlined Schaeffer's score in several respects. He labeled his thematic sequences as 'series' and their retrograde as 'inversion'. He also shows a second theme, which I omitted in my graphic adaptation.

According to Schaeffer, this sketch was a prototype score: "[Le schéma] est à vrai dire le premier essai de partition de musique concrète. Il représente la plus intéressante séquence de l'*Étude aux chemins de fer*, ..." Schaeffer, "Premier journal", p. 32. ("[The scheme is really the first prototype of a concrete music score. It represents the most interesting sequence of the Railway Study, ...")

Figure 8-A shows the construction of the theme. The meter decreases from 4/4 to 1/4 to reach "éléments *e, f, g,* de caractère 'ponctuel'."[428] To my knowledge, this is the first description of a musical element as pointillist in the post-war period.[429] While the metric acceleration and deceleration may relate to the railway poetry mentioned above, it is remarkable that Schaeffer, after having explained his metrical construction, suggested the metrical level could be considered independent of any specific musical content:

> On se demande, peut-être, quand je parle d'éléments, de quels éléments il s'agit? Peu importe, mettons, pour fixer les idées, que ce soit des fragments de rythmes de train, mais cela n'a pas d'importance, *cela peut être n'importe quoi de sonore*.[430]

This is the crux of Cage's theory and practice of structural rhythm. We see that, already in his earliest music theories, Schaeffer combined iconoclastic ideas with conservative notions of form (sonata, leitmotif, etc.). Figure 8-B shows the variation of a secondary, non-characteristic parameter within the same sonic object. The transformation must be kept limited, to ensure that *a* and *a'* remain recognizable as the same object. A defective variation eats into the time structure of repeated sonic objects. In Figure 8-C we see a few of Schaeffer's polyphonic strategies. In summary, the score shows a rigid rhythmic plan underlying a very flexible realization on all other levels of musical construction.

The railway score also illustrates how sonic objects are upgraded to musical objects —a move again described as independent of the actual timbres chosen. Each measure is filled with a single sonic object, beginning with the largest object a_1 and proceeding to the

[427] N.B. This score representation enhanceds certain aspects of the original in SCHAEFFER 1950, p. 49. © Hermann Editeurs for Richard Masse, by permission. The essence of Schaeffer's sketch-score, however, was not altered.

[428] SCHAEFFER 1950, p. 48. ("elements *e, f, g* of a pointillist character")

[429] Note, however, Leibowitz's description of the 'isolated tone' in Webern's second period; see p. 57.

[430] SCHAEFFER 1950, p. 48. My emphasis. ("The reader may ask what I have in mind when I speak of elements. It does not matter. To get an idea let us assume I speak of fragments of train rhythms, but this has no importance, *it can be any sonic matter*")

smallest object d_1. The objects become musical by being repeated once. The pointillist objects *e* to *g* and *W* (for 'whistle') derive their musicality from the preceding musical context; they do not have to be repeated.

Schaeffer's influence on the emergence of pointillism may have been obscured by the later conflict between the Paris and Cologne studios. This rivalry and the planning of the Cologne electronic studio had not even begun when Schaeffer's manifesto of *musique concrète* was published. Eimert and others interested in new electronic possibilities were following *very* closely Schaeffer's pioneering work at the French radio, but did not adopt his idiosyncratic terminology.[431] In Germany, France, and America *musique concrète* was regarded as a French brand of 'electronic music' made at the radio.[432] First signs of rivalry between the two 'schools' emerged in 1952—coinciding with the beginning of pointillism. Initially the discord did not involve Eimert but, first and foremost, the group of young composers around Boulez, including Stockhausen and Cage—in other words, the 'pointillists'. Because of his dominant personality, Schaeffer was not ready to follow the lead of young composers interested in experimental serialism. Yet he found himself in the midst of young serialists. Finally he had to cut the knot. In January 1953 Schaeffer barred Stockhausen from creating further experimental serialist works in the studios. Stockhausen was asked, instead, to contribute to Schaeffer's timbre classification research. He needed Schaeffer's reference to secure his forthcoming

[431] Cf. Cage who writes to Boulez in the summer the 1952: "I am anxious to have a copy of Schaeffer's book on *Musique concrète*." or "Whenever you want an article for a magazine on electronic music, let me know; and if anything is written besides Schaeffer's book I am anxious to see it." NATTIEZ 1990, pp. 196–97.

[432] This is evident throughout the primary resources of the period. The terminology 'concrete music' was not established as a distinct entity. As late as 1952, the terms 'electronic' and 'concrete' appear side-by-side and often interchangeably in letters by Cage, Boulez, Stockhausen and other early texts on the topic. Combined concerts of electronic music and concrete music took place as late as May 1953 in Cologne and June 1953 in Paris. The perception of different trends emerges—gradually—in the period 1952–53.

assistantship at the Cologne Radio and, at any rate, he was only a guest, tolerated at least in part due to Boulez's and perhaps Messiaen's influence. It must have come as a disappointment, since he had worked hard in November and December to produce a true *Etude concrète*. The event must have enraged Boulez, who had just returned from his visit with Cage in New York. While Stockhausen and Boulez became closer friends in the final two months of Stockhausen's stay in Paris, relations between Boulez and Schaeffer deteriorated and Schaeffer's natural leanings to dogmatic anti-serialism steadily strengthened. Ultimately Boulez and other talented Parisian serialists suffered most from this conflict, because they lost access to an electroacoustic facility in Paris. Eimert, by contrast, was supportive of this experimental serialism. Schaeffer's anti-serialist tendencies were further fueled by the traumatic premiere of the concrete opera *Orphée*, which was greeted with ridicule in the fall of 1953. Schaeffer, always drawn to military analogies, alleged that Heinrich Strobel had led him into the 'trap of Donaueschingen' and described the event as the 'Waterloo' for concrete music. His manifesto, however, was published three years prior to these developments, so that his ideas about the self-sufficiency of sonic objects—memorably described as the 'generalized Czerny effect'—and his thoughts on the inner characteristics of sonic objects may well have contributed to raise a pointillist awareness. His 1952 book on music concrète research was published when pointillism had already become a public phenomenon. If he indeed contributed an element to pointillism, it must have been on the basis of his manifesto. But pointillism is not fully described by the idea of isolated sonic objects. Schaeffer's concepts of musical form could not have constituted a more jarring

contrast with Webern's permanent variation, as evidenced by the second element of his music theory from 1950:

> La musique commence là où s'exercent ces deux démarches:
> *Distinguer* un élément (l'entendre en soi, pour sa texture, sa matière, sa couleur).
> *Le répéter*. Répéter deux fois la même chose, il y a musique.[433]

This small theory could be described as half-pointillist, half-populist. It is the theoretic analog of Schaeffer's four-note sampler. Over the next fifteen years Schaeffer erected a universalist theory of sonic and musical objects from this seed.[434]

THE CHANGING SET OF PRIMITIVES

Before discussing a second important noise study, this overview must now turn a thorny, potentially confusing issue: the changing set of primitives. Table 2 charts gives the constituents of the set of primitives, as documented in 1950, 1952, and 1998.

[433] SCHAEFFER 1950, p. 39. ("Music starts where these two processes are applied: / *Distinguish* an element (hear it by itself, for its texture, its substance, its color). / *Repeat it*. Repeat twice the same, and it becomes music.") N.B.: This must not be cited out of the above context. The repetitive train sound is not music in itself, unless one distinguishes an element within its furious techno-rhythm. The rhythm of the sea can also become musical, if one 'distinguishes' the sound of *each* wave.

[434] Pierre Schaeffer, *Traité des objets musicau*x (Paris: Seuil, 1966). Often abbreviated as TOM. Schaeffer's theory is perception-oriented; it expounds a network of new terminology to describe and explore timbre perception. For non-Francophone readers, I recommend Palombini's dissertation on the topic. He provides an overview, analysis, and translations of key portions from Schaeffer's TOM. Carlos Palombini, "Pierre Schaeffer's Typo-Morphology of Sonic Objects" (Ph.D. diss., University of Durham, 1993).

	A. Premiere of 18 March 1950	No.	B. 28 February 1950 [Log 1a]
	Study for Whirligigs	1	*Deconcertante or Study for Whirligigs*
		2	*Imposed or Railroad Study*
	Study for Orchestra	3	*Concertante or Study for Orchestra*
		4	*Composed or Study for Piano*
	Study for Pots and Pans	5	*Pathétique or Study for Pots and Pans*

No.	C. Summer 1952 [Log 1b]	No.	D. 1998 [L'Oeuvre de P. Schaeffer]
	Railroad Study	1	*Railroad Study*
	Study for Whirligigs	2	*Study for Whirligigs*
	Diapason Concertino *(Concertante)*		
	Study in Purple *(Study for Piano a ?)*	3	*Study in Purple*
	Study in Black *(Study for Piano b ?)*	4	*Study in Black*
5	*Study in Pathos*	5	*Study for Pots and Pans*

Table 2: Schaeffer's Changing Set of Primitives

The manifesto (=Log 1a) gave a first complete list of titles—including alternative titles—and Schaeffer asserted that his titles for these primitives were definitive (Table 2-B).[435] That may have lead to confusion, because he changed his mind over the next two years. In log 1b the list is no longer provided, and titles and numbering of the primitives in the text show that changes had been made. Many of the alternative titles, discussed in more detail below, disappeared. The *Study for Orchestra* was renamed to *Diapason Concertino*, the latter still being regarded as a primitive. Within the complete edition of Schaeffer's music, the *Diapason Concertino* is no longer a primitive (Table 2-D). The editors explain that Schaeffer revised the work in 1950–51, thus prior to the 1952 text publication. They also suggest that the *Studies in Purple* and *Black* were obtained by splitting the original *Study for Piano* (Table 2-B vs. C). Finally the *Railroad Study* took over the No. 1 spot from the *Study for Whirligigs*.

[435] SCHAEFFER 1950, p. 46.

The concert premiere of the primitives took place on 18 March 1950 but it excluded the 'composed' *Study for Piano* and the 'imposed' *Railway Study* (Table 2-A).[436] The 1948 *Concert de bruit* was broadcast twice, first on *Radio Paris* and later nationally on *La Parisienne*. The correct date for the broadcast premiere is 20 June 1948. Schaeffer quoted the wrong premiere date in the manifesto, failing to correct himself in log 1b. The reason for this discrepancy is not clear, but the second broadcast from 5 October 1948 is now widely regarded as the premiere.[437] According to Schaeffer these broadcasts featured the five primitives as specified in the manifesto. None of the sources I surveyed mentioned an introduction or transcript of these historic broadcasts.[438]

The alternative title system described each primitive from two angles (see Table 2-B). The first title spelled out the abstract composition concept; the second referred to the concrete timbre material. Over time, only the 'concrete' titles remained; the 'abstract' titles—and their significance—fell into oblivion. The alternative titles form opposing pairs: *Concertante* vs. *Deconcertante* and, less obviously, *Imposed* vs. *Pathos* or *Composed*.

For the *Concertante* Schaeffer recorded an orchestra in the process of tuning—hence the title *Diapason Concertino* for the revised version. He transformed the orchestra disc recordings and invited pianist J. J. Grunenwald to 'debate' with this concrete orchestra.

[436] Pierre Schaeffer. *L'Oeuvre musical*e. Three CDs and Disc Notes. Paris, France and Albany, NY: INA-GRM, 1998), pp. 58–59. The disc notes present the five etudes in two different listings—see Table 2-B and 2-D—adding that the 1950 concert premiere included only studies 1, 3, and 5. The reader is free to choose one of the two lists and I choose Table 2-B. The second reading would be based on the final set of primitives, meaning that Schaeffer had split the *Study for Piano* into two by 1950, despite the contrary indication in the manifesto. This is why I opted for the first reading, although I cannot understand Schaeffer's choices. Perhaps the other two studies had been premiered two days earlier, during the presentation at the Sorbonne.

[437] The correct dates are reported in "Les grandes premières du répertoire GRM" in François Bayle, ed., *Répertoire acousmatique 1948-198*0 (Paris: GRM/INA, 1980), pp. 264–65.

[438] I had no opportunity to research documents at the Centre d'études et de recherche Pierre Schaeffer (Montreuil near Paris), which was established in 1998.

The *Deconcertante* set out from a score by blind French organist and composer Gaston Litaize (Second Prix de Rome, 1938). He wrote a score for two whirligigs, three sanzas, a xylophone, and a set of four bells and handed it to Schaeffer, who had commissioned it. After a number of Conservatory students (all of them Premier Prix) performed the piece, Schaeffer proceeded to cut the recording into fragments—hence the title—transforming the fragments in various ways, before recombining them into the final result.

The *Railway Study* set out from train recordings and Schaeffer argued that these timbres had been 'imposed', in contrast to the malleable timbres of the 'manipulated' piano, which had been 'composed'. This argument, however, applies to the material rather than to the compositional level of the primitive, and one might object that the material for the *Orchestra Study* had been just as imposed as the material for the *Railway Study*. Schaeffer's second argument for the alternative title was more consistent. Here he described the score of the *Railway Study* as 'imposed'. This would make *Pathos* its opposite, as it had been realized without a score, in a single, inspired DJ improvisation session. This means that *Composed*, i.e. the *Study for Piano*, remains orphan. Schaeffer provided no information whatsoever on its compositional concept in log 1a. Two years later, in log 1b, he specified a number of the underlying strategies. His suggestion, however, that its alternative title was given due to the 'malleable timbres of the piano' leads to an odd controversy.

THE STUDY FOR PIANO

Schaeffer's descriptions regarding the *Study for Piano* can be confusing; many authors were led to believe Schaeffer claimed to have invented the prepared piano, more

or less at the same time and independently of Cage. There may be a grain of truth to this —and an important one too—but there is also no shortage of confusion. The prepared piano was of seminal importance for the historic development of timbre composition, so I will attempt to disentangle this complex web. Under the date of 25 May 1948, Schaeffer wrote in his research log 1a:

> Je devrais me procurer des éléments 'préfabriqués' quitte à les retravailler au tourne-disque. J'en reviens au piano que je sais être une gigogne de sons.
>
> Il serait trop long de décrire les manipulations auxquelles ont donné lieu *Étude pour piano*. D'un piano convenablement manipulé sont sortis tous les éléments composants: batterie, mélodie, harmonie. Le résultat, proprement musical, restait de caractère entièrement concret puisqu'un auditeur non prévenu ne pouvait discerner, dans cette oeuvre de huit minutes, à aucun moment le piano comme source de sons. Non pas que le piano en tant que tel soit prohibé, mais il se trouvait que les manipulations le transformaient au point de le rendre méconnaissable.
>
> Comme on le verra plus loin, il ne faudrait pas confondre cet usage du piano avec qu'en fait J. Cage, dans ses oeuvres de piano préparé.[439]

Despite the disclaimer—which has no place in the research log entry from May 1948, unless one is ready to assume Schaeffer knew about Cage's prepared piano at that time—and despite the omission of a more detailed description of these manipulations, Schaeffer appears to describe a piano preparation: he did not suggest that he manipulated *recordings* of piano sounds; he appears to suggest that he manipulated a piano, physically composing timbres, and rendering them ultimately unrecognizable as coming from a piano. The reader is faced with a paradox: on one hand, he is warned not to confuse these

[439] SCHAEFFER 1950, p. 42. ("I should obtain prefabricated elements in order to rework them with a disc player. I fall back on to the piano, knowing it as a mother-of-sounds.
It would be too long to describe the manipulations that gave rise to the *Study for piano*. All constituent elements came out of an appropriately manipulated piano: percussion, melody, and harmony. Musically speaking the result retained an entirely non-abstract (i.e. concrete) character, since an uninformed listener would be unable to discern the piano as sound source at any moment during this eight-minute composition. Not that the piano would be forbidden in and of itself, but it transpired that the manipulations transformed it to the point of making it unrecognizable.
As will become clear later, one should not confuse this usage of the piano with J. Cage's practices in his works for prepared piano.")

'piano manipulations' with the prepared piano of Cage; on the other hand, he learns about sounds that came from an 'appropriately manipulated' piano. There is a fine touch of black humor in this paradox.

Schaeffer entitled the work *Composed* in order to refer to its timbre composition aspect and not, as one might innocently believe, an abstract score or an overall composition plan. Elements of such a compositional plan were provided in log 1b, but Schaeffer pointed out that the decisive aspect of this study had been the 'malleability of the piano timbres'. *Composed* is a study in timbre composition.

Looking for enlightenment on the details of the procedure used for this timbre composition, we turn to the revised log 1b of 1952—and immediately hit a roadblock. Now the alternative title *Composed* had vanished, and Schaeffer spoke about *two* studies for piano which, according to Schaeffer, and to make matters more confusing, had the peculiar merit of having *avoided* the use of the prepared piano:

> Si je demande à Pierre Boulez d'enregistrer sur un thème donné des séries d'accords de différents styles (classiques, romantiques, impressionnistes, atonaux etc...), [...] Le mérite de ces premières études au piano est d'avoir évité le recours au 'piano préparé' qui devait donner par la suite des effets plus brillants mais moins purs.[440]

The most glaring discrepancy between research logs 1a and 1b is the replacement of the erstwhile *Study for Piano* by two works, entitled *Study in Black* and *Study in Purple*. The editors of the Schaeffer complete edition explain that the two studies were obtained by splitting the original *Study for Piano*—they are placed better than I to make such a judgment—but they do not suggest a rationale for Schaeffer's step. The split adds further

[440] Schaeffer, "Premier journal", p. 27. ("If I ask Pierre Boulez to record a number of chord series on a given theme in different styles (classic, romantic, impressionist, atonal, etc....), ... [...] The merit of these first piano etudes consists of avoiding the resort to the prepared piano, which would soon yield more brilliant, but less pure effects.")

potential for confusion. To the best of my knowledge Schaeffer never explained the rationale for the retroactive split, or his new color titles. Since Boulez had not been mentioned in the first research log, one might be pardoned for suspecting these pieces were later additions. Before continuing our exploration of the timbre composition method, we should first attempt to remove such speculations.

Perhaps Schaeffer came closest to giving an explanation for the study-split in the following passage from log 1b, where he summarized the overall public reaction to the October 1948 broadcast of the five primitives:

> L'étude dite pathétique avait toutes les faveurs de mes critiques. On reconnaissait les qualités techniques de l'étude dite au piano. Mais une sorte d'unanimité s'etait spontanément constituée pour exclure l'étude dite concertante. Enfin, les correspondants les plus avertis appréciaient dans 1'*Étude aux chemins de fer* et celle *aux tourniquets* l'effort fait pour abstraire le bruit de son contexte dramatique et l'élever à la dignité de matériau musical.[441]

The general opinion to 'exclude' the *Study for Orchestra* is 'being advanced' as Schaeffer's reason for the withdrawal of that primitive. Another element must have contributed, since Schaeffer was in possession of those reactions in 1948 and in his log 1a of 1950 he had declared the list of five primitives to be final—including the hapless *Study for Orchestra*. I think it is quite simple. Sometime between 1950 and 1952 he revised his position on the origins of concrete music. All of the original definitions had shifted. Not only was *Study for Orchestra* based on pitched materials; it was also based on traditional music instruments playing a diapason and, what is more, one didn't need a wordy introduction to hear this diapason material or, for that matter, Grunenwald's

[441] Pierre Schaeffer, "Deuxième journal de la musique concrète: 1950–51," in *A la recherche d'une musique concrèt*e (Paris: Seuil, 1952), p. 33. ("The *Study in Pathos* had all the positive comments of my critics. One acknowledged the technical qualities of the *Study for Piano*. But a type of agreement spontaneously formed to exclude the study called *Concertante*. Finally, the most advanced reader appreciated the effort made in the *Railway Study* and the *Study for Whirligigs* to abstract noise from its dramatic context and to elevate it to the dignity of musical material.")

harmonious piano improvisations. It clearly spoiled the impression of the bruitist, futurist image of the *Concert of Noises*, that so many listeners heard and wanted to hear. Schaeffer yielded, but only quite grudgingly, because—as I will point out in more detail below—his musical aesthetics were actually more in favor of that particular work than of the most iconoclastic noise studies; the *Study for Orchestra* was revised and re-titled to *Diapason Concertino* in 1950–51.

I am not aware that the original *Study for Orchestra* was published as a recording, so strictly speaking the 'primitive' must be regarded as withdrawn. On the other hand, there are pointers that the *Diapason Concertino* was not, or only minimally, revised, thus staying quite close to the original *Study for Orchestra*. In log 1b Schaeffer discussed the work—under its old and new title—as if it still belonged to the primitives. Grunenwald's lyrical, potentially uniquely inspired piano improvisations also suggest that he was not asked to repeat the improvisation session with the concrete orchestra two years later. Lacking access to both versions or more information, we are unable to tell.

In order to keep the original number of noise studies at five, the *Study for Piano* was split into two, also around 1950–51. The transfer from disc-based to tape-based technology provided additional impetus to make such changes. When the first magnetic tape recorders became available at the French Radio in November 1950, many works were transferred to the new, higher quality storage medium. It was a perfect logistical moment to make revisions.

In conclusion, and to return to our discussion, the *Studies in Purple* and *Black* are excerpts from the original *Study for Piano*. Due to the split, two titles were required and Schaeffer also stopped using the title *Composed*—since both studies are 'composed', one

might call them *Composed 1* and *Composed 2*. These new studies last respectively about three and four minutes, while the original *Study for Piano* lasted eight minutes. The difference probably resulted from finding suitable beginning and ending points in the middle of the original *Study for Piano*. For all practical intents and purposes, the studies are the equivalent of the original *Composed*. I will not discuss them as separate entities and simply use the title *Composed* or *Study for Piano* to refer to the music of *both* color studies.

Assured that we are hearing excerpts from the primitive *Study for Piano*, we can now listen to find out which kind of 'manipulations' of the piano had been employed in 1948. In most regards—and I will discuss the significant exception below— Schaeffer's description from log 1a turns out to be accurate: we hear percussion, harmony, and melody and we do not need too much good will to agree that we cannot identify the piano as sound source in the two studies.

But our modern ears can distinguish a number of electroacoustic transformation techniques, some of which will remain trademark secrets of Schaeffer and Poullin. Repetitive rhythmic structures are prominent and can be attributed to the closed-groove discs and Schaeffer's DJ performances. It is imperative to listen to *Composed* to appreciate fully what is at stake. Considering the primitive electroacoustic technology of those days, the wealth and refinement of timbres in *Composed* is breath-taking. The transformations are vast. I shall call the entire range of studio techniques synthesis-by-experiment. Before going into the details of this technique, however, we need to extract more information from the research logs regarding Schaeffer's various source materials for *Composed*.

The first type of source materials was provided by Boulez's improvised harmonizations in classic, romantic, impressionist, and atonal style on a theme by Gurdjieff.[442] Schaeffer referred to the Boulezian chord series as '*pâte sonore*' (sonic paste), a metaphor resonating with the delicacies of French cuisine. While it suggests a rather civil use of the piano—Boulez did not insert 'pulverized sound' from his Second Sonata of the same year—the idea of baking different music history periods into a single primal matter takes place in the context of Schaeffer's fascination with atomic science and Schaeffer may have used Gurdjieff's theme to evoke powerful 'First Causes'.[443] The resulting musical atmosphere has a dark, even ominous feel to it, suggesting the author of *Beelzebub's Tales to his Grandson* left his crow talons on the piece.

The second type of source materials for *Composed* was provided by extended piano playing techniques. I suspect a number of commonly known, playful strategies, such as knocking on the resonance frame, plucking or caressing the strings, amplifying other sounds in the body of the piano to produce sympathetic string resonance, and similar non-orthodox uses. These extended techniques of piano playing had little in common with the artisanal timbre synthesis achieved in the prepared piano music of John Cage.

As listeners we are unable to pinpoint the original sound sources with certainty. Only at one point near the end of the *Study in Black*, four metronome beats were welded

[442] The esoteric mystic Gurdjieff (ca. 1874–1949) was also know as the 'invisible man'. In a time of personal crisis during the years of Vichy France, Schaeffer became involved with Gurdjieff—coming close, taking risks, but without turning into a fanatic—and learned 'the movements'. After Gurdjieff's death Schaeffer contributed a few of his personal experience with the man to Louis Pauwels, *Monsieur Gurdjieff: Documents, témoignages, textes et commentaires sur une société initiatique contemporain*e (Paris: Éditions du Seuil, 1954). A short English excerpt from this text, describing the atmosphere at sessions with Gurdjieff 'movements', can be located online: Pierre Schaeffer, "A Session of 'Movements'," *Gurdjieff International Revie*w, 5, 1, (<http://www.gurdjieff.org/schaeffer2.htm> accessed on 28 August 2003), original document from Spring 2002. For the music, see: Georges Ivanovitch Gurdjieff and Thomas de Hartmann. *Music for the Movement*s. Performed by Wim van Dullemen. Herwijnen, Netherlands: Channel Crossings, 1999).

[443] 'First Causes', the presumed source for all world religions, are a major concern for Gurdjieff.

into the texture. From the two types of concrete piano materials, Schaeffer and Poullin composed timbres that suggest as their sound sources a wide selection of industrial machinery, trains letting off steam, metal saws, unheard-of ominously simmering organs in the far (probably using a combination of reverse, echo, and clipping of timbre portions), colored noise bands of various texture, claxons from nightmarish vehicles, and much more. These timbres suggest music sounding from a fantastic, unknown universe.

An enthusiastic listener, reporting after the national broadcast of October 1948, confirmed this impression:

> J'ai cru entendre une suprême musique balinaise; la musique que l'on pourrait imaginer être celle de l'intérieur de l'atome; .... Le concert de bruits ne constitue pas seulement le premier concert de musique surréaliste, il contient déja, a mon sens, une révolution musicale...[444]

The use of metaphors relating to the power of the atom was quite widespread in the wake of Hiroshima and Nagasaki; it was by no means restricted to isolated enthusiastic listeners. Boulez, Goeyvaerts, Pousseur, Stockhausen, and others later worked in the same spirit and, in the 1950s, even Messiaen resorted to metaphors from nuclear physics to describe aspects of his *Mode de valeurs*—in quite striking a contrast, one might add, to some of his later comments in regard to the work. Similarly, Schaeffer's earlier texts abound with references to nuclear physics.

Even Balinese timbres, so often associated with Cage's prepared piano, can be heard in *Composed*. Moving beyond his idea of the sound sampler, Schaeffer used disc-based recording and playback technology to *create* unheard sounds from sonic matter. Schaeffer had discovered this creative use of technology in connection with the 'cut bell'

[444] Schaeffer, "Deuxième journal", pp. 30–31. ("I believed to hear a supreme Balinese music, the music one might imagine to exist inside of the atom, ... the first concert of noises is not only the first surrealist concert, it constitutes also, in my eyes, a musical revolution...")

experience. He emphasized that this experience—synthesis by transformation—contained the *essence* of concrete music. Feeling very close to the nuclear physicists—who were just developing the A-Bomb in Russia in 1948—he drew an analogy to the astronomic quantities of energy harbored inside an atom and suspected similar potentialities in the sonic matter. The combination of fascination and anguish created after Hiroshima and Nagasaki is perhaps hard to imagine from our sober and detached viewpoint of the twenty-first century. In 1948 the awesome power of the atom had just been demonstrated and, as a consequence, many apocalyptic images and stories entered public discourse. The Boulez-Gurdjieff *pâte sonore* was intended to create an equivalent to 'enriched uranium' in the guise of 'enriched sonic matter'. It was a grandiose backdrop for the 'manipulations' of piano-derived sounds, obtained with extended techniques. 'Radio-activated' technology could be employed as tool to explore the fantastic new worlds shielding inside the sonic atom. It seemed as if an entire universe lay hidden within *each* sonic object.

We will call this composition method synthesis-by-experiment, since Schaeffer's method was entirely experimental in the beginning. Schaeffer's inclusion of analytic notions from scientific acoustics—although perhaps known to him from his training as sound engineer—did not play a role in his early discoveries. These notions would become a factor after Schaeffer met Abraham Moles in 1951, and they certainly are considered in his seminal study of the sonic object in the 1960s. It is essential, from our point of view, to capture the initial moment of discovery and its inspiration, because it explains Schaeffer's first text on 'concrete music'. Aside from the 'cut bell', where the attack portion of a timbre was removed, the synthesis-by-experiment method included

other transformations of the sonic matter. Schaeffer mentioned reverse play, dynamic envelope shaping, absolute transposition, mixing, but omitted naming a few other operations—including the 'closed groove'. In log 1a, Schaeffer used the metaphor of the 'cut bell' to represent the entire set of experimental methods. He felt he had discovered a 'gold mine', and probably was still in the process of securing patents when he wrote the concrete music manifesto in late 1949. Perhaps this explains his awkward silence regarding the 'manipulations' employed in the *Study for Piano*. These 'manipulations' resembled mechanical transformations of traditional instruments, such as the prepared piano but, based on new media technologies, they significantly widened domain of timbre experimentation.

In each of his radiophonic studies Schaeffer concentrated on a different realization strategy. Although Schaeffer never pointed out which work best represented the essential concrete music experience of the 'cut bell', it seems to me that none of the primitives more extensively exploits the synthesis-by-experiment method that the *Study for Piano*. Historically, this makes the *Study for Piano* one of the first electronic timbre compositions of all time and, to my knowledge, the only one that was ever realized with shellac disc technology (as opposed to earlier works using film media, such as Fischinger's 1932 *Tönende Ornamente*). But aside from creating new worlds of timbres from the sonic primal matter, *Composed* heavily relied on the 'closed groove' technique, a metaphor of sound sampling and more commonly and directly associated with concrete music. Schaeffer initially took great pride in the 'creative' use of technology, best represented by the 'cut bell' technique. *Composed* or *Study for Piano* is the paradigmatic

primitive of concrete music, for none of the other primitives illustrates better both fundamental discoveries of Pierre Schaeffer: synthesis and sampling.

In conclusion, then, here are the vital facts concerning Schaeffer's *Study for Piano*. There are two sound sources: recordings obtained from extended piano techniques and harmonic chords from a Boulez-Gurdjieff collaboration. The innovative 'manipulations of the piano' in fact concern a creative use of recording and playback technology, such as the 'cut bell'. The 'synthesis-by-experiment' technique is the modern equivalent of the 'cut bell' metaphor; both terms group these creation-by-transformation techniques into a set. Their aim is the revitalization of source timbres in the concrete, the discovery of new, unheard sounds. None of the techniques are restricted to the piano by default. They can be applied to all sound sources. On the other hand, many of these techniques relied on the 'closed groove', limiting timbre duration to a single revolution on the record player or, alternatively, resulting in characteristic repetitive rhythmic structures at the surface level. Multiple rerecording of a passage was nearly impossible, because of the quick accumulation of noise. While a fundamental principle had been discovered, the practical limitations of the studio were severe.

Now that we have firmly established the technological basis for the timbre synthesis employed in *Study for Piano*, we can return to Schaeffer's remarks in regard to the prepared piano. Why did he deliberately blur the borders between the synthesis-by-experiment technique he had developed and Cage's prepared piano? It was not difficult: both methods were used to achieve timbre synthesis; both methods obliterated the link to the original sound source, and—accidentally in Schaeffer's case—both methods involved a piano as sound source. Schaeffer failed to make clear that the manipulation aspect of

Composed was primarily based on manipulations of piano *recordings*. He blurred the extent of the initial extended piano techniques to the detriment of the far more important basic techniques of concrete music, the 'cut bell' and the 'closed groove', which had been most perfectly realized in this study. Why pay such a high prize?

Operating with screws, nuts, and bolts on a piano, Cage had developed a low-tech solution for a timbre laboratory. This granddaddy-of-synthesizers was portable to any place that offered a normal piano and included a convenient keyboard interface. Schaeffer, on the other hand, had developed the most general instrument imaginable—including the most impractical user interface imaginable. About 500 discs had accumulated at the end of his first experimentation period in June 1948. Even if he had established a classification system, shelving, and labeling for these sound objects and recordings—I am sure he had not—this primitive sound library would have to be mounted manually onto the four-note instrument. How quick could anyone change discs, put the needle on—finding the correct spot on a circling record—and keep track of the dynamics and mixing? DJ Schaeffer was not amused. In 1952, he added a somber note to his log 1b: "Il n'y a pas d'instrument à jouer de la musique concréte. Telle est la difficulté majeure."[445] Below I will argue that he may have come to this conclusion in late 1949, not in June 1948.

We saw above a brief excerpt from the reaction of an enthusiastic listener to the path-breaking *Concert de bruit* of 1948. A more extensive essay was published only two months after the second radio broadcast from October 1948. Author Jacques Durand, later in life an engineer and media specialist, who occupied high administrative functions

[445] Schaeffer, "Premier journal", p. 26. ("There is no instrument to play concrete music. This is the major difficulty.")

in French politics, warned that a new, essentially *abstract* art, with vast implications, was in the process of 'creating itself':

> Remarquons d'abord que c'est en un sens un nouvel art qui se crée ici. L'utilisation artistique des bruits permet de créer des œuvres d'une grande puissance d'évocation, parfois mêmes hallucinantes, elle permet même une destruction radicale de l'univers qui nous est le plus familier et une reconstruction systématique d'autres univers tout aussi possibles. Sur ce plan de la création pure, les ressources offertes par cet art essentiellement abstrait sont vastes.[446]

Notably, Durand discussed the *Concert of Noises* in terms of an opposition between concrete and abstract. He saw two contradictory tendencies in the new radiophonic Art of Noise. On one hand, a voluntary destruction of the concrete went hand in hand with abstract reconstruction; on the other hand, there was a tendency towards an intense valorization of the concrete. Natural, preexisting, prefabricated, and 'concrete complexes' would need to be integrated into the new art and he anticipated promising applications for film and music. In its return to the concrete, the art of noise even resembled modern science.

While Durand's discussion lacked specifics on the works heard on the program that night in October 1948, his review of the 'Concert of Noises' suggests that Schaeffer's works were presented as radiophonic experiments and not as music. Writing his manifesto a year after Durand's essay, Schaeffer would argue for calling the new abstract art 'concrete', stressing the importance of the media over the message, and confirming

[446] Jacques Durand, "Concert de bruits de Pierre Schaeffer," (<http://perso.wanadoo.fr/jacques.durand/Site/Textes/t1.htm> accessed on 21 August 2003), original document from December 1948. ("Let us first observe that in a sense a new art is being created here. Artistic utilization of noise allows the creation of works with great evocative power, sometimes even hallucinating, it allows even the radical destruction of a most familiar universe and a systematic reconstruction of other, equally possible universes. On this level of pure creation, the resources of this essentially abstract art are vast.")

what Durand had described as the second tendency of the new art, namely an intense revalorization of the concrete.

A One Year Hiatus and a Meeting with Cage

After realizing the five primitives, Schaeffer was ready to delve into his real project, the symphony, when he was suddenly asked to fill an important administrative function for the French National Radio. In this context, Schaeffer's uncommon position at this large and important French institution is worth noting. During the years of German occupation, he became involved in the French resistance in connection with the experimental Studio d'Essai. In 1944 plans were made for the impending liberation and, in mid-August, an illegal group, headed by Schaeffer, took over the Studio d'Essai. They locked themselves up and, after a week, on 22 August 1944, Schaeffer began broadcasting a call to arms every half hour. He was appointed Director of French National Radio, but he held this post only for a few weeks.[447] He created an acoustic documentary of the liberation of Paris, before continuing his earlier line of experimental radiophonic research.[448] Occasionally he switched back to important administrative tasks. Around 1948 he represented the French North-African colonies, Morocco and Tunisia, in international negotiations about the assignment of radio frequencies. In log 1a Schaeffer stated that he was absent for one year, but the actual dates of his absence differ.[449]

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[447] Dallet and Brunet, *Itinéraires*, p. 40. Over the course of his long career at the French Radio, Schaeffer once proudly noted, he was let go seven times from important positions due to administrative disagreements; in this case, he had disagreed with the French government about how to run the radio.)

[448] Pierre Schaeffer. *Chronique sonore de Paris libér*é. New York: Disc, 1947), realized by clandestine French radio, later with collaboration from Orson Welles.

[449] Actually the first round of negotiations in Atlantic City had begun in May 1947—before Schaeffer's radiophonic researches into noises. A set of later negotiations took place in Mexico, Rapallo, Copenhague, Torquay, and Florence. Sylvie Dallet and Sophie Brunet, *Itinéraires d'un chercheur: Bibliographie commentée de l'Oeuvre éditée de Pierre Schaeffe*r (Montreuil: Ed. du Centre d'études et de recherche Pierre Schaeffer, 1996), pp. 43–44.

In the meantime Cage had arrived in Paris around March 1949, struck up a friendship with Boulez and, in early June 1949, appeared at the Tezenas lecture-concert. Schaeffer must have been back from his travels abroad:

> Es war um 1950 bei Mme. Tezenas. Vor einem erlesenen, feinschmeckerischen und müßiggängerischen, etwas naiv neugierigen Publikum...[450]

That Schaeffer attended came to light almost twenty years later when he pointed out his musical precursors in a 1967 monograph on concrete music.[451] 'Around 1950' Boulez gave a presentation on life and works of Cage, who performed *Sonatas and Interludes* for a select audience of Parisians. 'Around 1948' Boulez provided the *pâte sonore* for the *Study for Piano*: Boulez would have had a good reason to note the remarkable parallel between Schaeffer's and Cage's prepared piano.[452] There is no trace of such a remark in his lecture. On the other hand, it is doubtful whether Schaeffer grasped the significance of the prepared piano for concrete music at this very concert in June 1949. Certain signs, which will be discussed below, point to a later breakthrough when Pierre Henry met Schaeffer in the fall of 1949. But many other points should have established Cage as a veteran experimenter with sounds and noises in Schaeffer's mind:

> ... à Los Angeles, Cage essaya d'établir un centre de musique expérimentale où des techniciens et musiciens auraient collaboré à des recherches acoustiques dans tous les domaines, y compris le domaine électronique; à la Bauhaus,

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[450] Pierre Schaeffer, *La Musique concrèt*e (Stuttgart: Klett, 1974), p. 64. ("It was around 1950 at Mrs. Tezenas's. In front of an exquisite, gastronomical, and idle, somewhat innocently curious audience...")
According to Schaeffer, Cage performed the *Bacchanale* (1938) as well as the *Sonatas and Interludes* that day. Boulez did not announce the *Bacchanale*, but Cage may have given an encore. See NATTIEZ 1990, pp. 41–48 for the complete lecture heard by Schaeffer. See also p. 171 ff. above, for a summary of its most salient points.

[451] Pierre Schaeffer, *La Musique concrèt*e (Paris: Presses universitaires de France, 1967). The relevant quotation above was taken from the German translation of this 1967 monograph. See also fn. Fehler: Verweis nicht gefunden above.

[452] Indeed, a skeptic might argue that Schaeffer created the Studies in Black and Purple in late 1949 or early 1950 in order to replicate and extend the timbre synthesis seen in Cage's prepared piano. Boulez's involvement in those two studies—not mentioned in log 1a—makes this suggestion quite attractive.

> réfugiée depuis le nazisme à Chicago, il enseigna dans une classe intitulée: classe d'expériences avec les sons.[453]

If one combines these and many similar remarks on that evening with Schaeffer's experience of the prepared piano as an analog to his *Study for Piano*, one wonders how Schaeffer could have contained his enthusiasm. One would assume he invited Cage to listen to his 1948 Radiophonic Studies *immediately*—on the same night or the next day. Cage, as we saw above, had taken his ideal of collaborating artists and engineers or craftsmen from the Bauhaus; he was a true Bauhaus kid. On a deeper, spiritual level, this Bauhaus concept was fueled by the desire for a fundamental completeness of experience, lost in the industrial age, and projected from a mythical past on to a utopian future. Such ideals were by no means limited to the *Bauhaus* and related movements in Russia and the Netherlands; spiritual leaders like Gurdjieff and his harmonious cycle had their own ideas of the ways in which such aims might be realized. Schaeffer and Cage were both excellent organizers, but somewhat reluctant leaders. Their strong endorsement of individuality conflicted with the implications of a leadership in a school. With his 1942 class on 'Experiences with Sounds' at the Chicago 'Bauhaus', Cage provided a template for a new type of school, where hierarchy was replaced by experiments and community experience. The soon-to-be-established *Groupe de recherches musicales concrètes* (GRMC) shows a number of striking parallels with such an openly designed school. Schaeffer always stressed the importance of the empirical, next to the abstract work of thinking. Due to his rather anti-German mindset, Schaeffer would never have referred

[453] NATTIEZ 1990, pp. 43–44. ("in Los Angeles, Cage attempted to establish center for experimental music where technicians and musicians would have collaborated in research on acoustics in all domains, including the electronic domain; at the Bauhaus, exiled in Chicago since Nazism, he taught a seminar: Experiences with Sounds.")

back to the Bauhaus in defining his models for this collaboration between engineers and artists. For him, it was simply a genuinely French affair. He argued the need for multi-disciplinary research into new music out of the complexity of the task at hand. Nevertheless, the example shows that he had been aware of predecessors in Germany and America, which promoted the exact multi-disciplinary approach, even before he had formulated his ideas about concrete music or a research project into concrete music.

Boulez does not mention it in his lecture, but Cage composed concrete music during his tenure at the Chicago Bauhaus. Schaeffer would probably have heard from Cage about such a project in their later private meetings. In 1942 Cage composed music for *The city wears a slouch hat*, a surrealist radio play by 'beat' poet Kenneth Patchen that compares directly to Schaeffer's 'fantastic suite for voice and twelve monsters', *La coquille à planètes*. He wrote a 250-page score for sound effects—"to use them not as effects, but as sounds, that is, as musical instruments"—for that play."[454] Already in 1942 —in the context of a radio play—Cage took a step from sound effects to music, which Schaeffer had not really made in June 1949, as we will see below. In the direct aftermath of the World War, Schaeffer had traveled throughout the U.S.A. to survey the networks and, in the process, became acquainted with Orson Welles and other persons from the American world of entertainment and radio. How unlikely is it that Schaeffer would approach Cage to invite him to the Studio d'Essai right on that night at the Tezenas lecture-concert? Cage spent several months in Paris after the lecture-concert. Schaeffer

[454] Although the CBS engineers had told Cage that "anything is possible", the score was rejected and is currently lost. Cage provided a second score within a week. James Pritchett, "The Story of John Cage's 'The City Wears a Slouch Hat'," Disc notes for *Mode Records 55. John Cage: The Lost Works*., (<http://www.music.princeton.edu/~jwp/texts/slouch.html> accessed on 4 April 2002), original document from 1995.

would have shown Cage his experimental work on a radiophonic Art of Noise. Perhaps Schaeffer was only briefly in Paris in June 1949, but this first encounter with Cage must have provided him with the some exciting food for thought. The lecture was filled with examples of Cage's experimental research into the sonic matter, all of which must have resonated with Schaeffer. Schaeffer's English was as good as Cage's French. Given Cage's expertise with experimental music centers since the 1930s and Schaeffer's similar, more recent interest in radio experimentation and access to technology, it would require an extreme disregard of common sense to surmise that they barely met or discussed over the next several months. But we must now continue our examination of the birth of concrete music in Paris, working with the historic data provided in Schaeffer's 1950 manifesto.

Concrete Music 1949–51

After a break of more than a year, Schaeffer engaged in a fresh cycle of experimental research between August 1949 and March 1950. In log 1a, he reported that concrete music was invented in 1949—a statement *not* repeated in log 1b of 1952:

> Effectivement, c'est seulement en 1949, que, fort d'une nouvelle expérience, j'ai osé généraliser mes hypothèses primitives en adoptant le terme de *Musique concrète*, alors que l'année précédente je jugeais prudent de placer l'ensemble de ces travaux sous le titre de *Recherches sur les bruits*.[455]

This point is worth a brief amplification. The fact that Schaeffer omitted this important piece of information in his second major publication on concrete music—*A la recherche d'une musique concrète*, published in the summer of 1952 and containing four

[455] SCHAEFFER 1950, p. 44. ("In fact it is only in 1949, after being strengthened by a new experience, that I dared to generalize my primitive hypotheses by adopting the term *musique concrète*. In the preceding year I had thought it prudent to place my works under the title 'Researches into Noises.'")

essays, including log 1b and his *farewell* to concrete music—explains how careless readers could have concluded that concrete music was created in 1948. Disregarding Schaeffer's assertion that concrete music was created only in 1949, log entries from 1948 in which the term 'concrete music' was mentioned all of sudden appear as 'evidence' to indicate concrete music's moment of birth.[456] Careful reading would have shown that these research logs were not written in 1948 and that Schaeffer introduced the term into the past through his use of the 'diary' as a didactic tool. The historic judgment when and where one sets the limits for the origin of concrete music should be considered on a different level and, one could certainly argue, the 'noise studies' are in fact concrete music, ignoring concerns of Schaeffer. Bu it is not my aim to enter into this discussion at this point.

My concern is to throw light on the origins of concrete music and how the term and ideas later associated with it came into being. The now prevailing view tends to project Schaeffer's later ideas onto this pioneering phase in the first half of 1948. But he clearly did not have the term 'concrete music' in 1948 and the manifesto from late December 1949, written almost two years after the events, is the first real evidence of Schaeffer's invention.[457] Schaeffer's ideas on concrete music originated some time in 1949 and kept evolving throughout the early 1950s. Now we can return to his assertion that only in 1949 did he generalize his earlier hypotheses to formulate the idea of 'concrete music'. What was this new experience that, in Schaeffer's eyes, made the difference between

[456] It is not relevant to this discussion who contributed to this back-dating error, or how it could have been sustained over so many years, in so many publications.

[457] There is always a possibility that Schaeffer erred when he wrote that he invented the term 'concrete music' in 1949. At this point, however, I have no 'concrete' evidence of any prior mention of the term in the sense of a comprehensive, new type of art form.

experimental research into noises or innovative radio and the domain proper of music? A good part of the answer is *Suite 14*.

SCHAEFFER'S FIRST CONCRETE MUSIC: SUITE 14

Having received positive feedback from his noise studies, Schaeffer concluded that his technical processes should lead to even better results if, instead of noises, he set out from 'musical' material:

> En taillant des fragments sonores dans le bruit des trains, des tourniquets, des boîtes roulantes, l'expérience montrait qu'une construction était possible; elle devait l'être bien davantage si l'on se donnait au départ des matériaux moins ingrats.[458]

While Cage had declared all traditional music instruments unfit for new music and wanted to free all silences and sounds for music, Schaeffer, an extraordinary hybrid between a musical conservative and a daring innovator, suspected that music instruments were fundamentally more musical than noises.[459] We should remember that, strictly speaking, not all primitives had been noise studies and, in this sense, Schaeffer's revision of the *Study for Orchestra* as *Diapason Concertino* may also be seen as his effort to salvage the musical from the 'non-musical' bruitist studies.

Rather than commissioning once more a composer friend to provide a score for his experiments, Schaeffer set out to compose a score himself. Born into a musical family, he had learned the violoncello and taken classes in analysis with Nadia Boulanger. In addition, and most importantly, one should not overlook his true formation and training as a radio sound engineer, a profession requiring a high degree of musical expertise and

[458] Schaeffer, "Premier journal", p. 37. ("The experience of forming sonic fragments from train, whirligigs, and rotating pans showed that a construction was possible; setting out from less ingrate materials should make it even more possible.")

[459] I will return to his conflicting aesthetic allegiances below.

talent. The quality of Schaeffer's expertise and his interest in this new media realities is reflected in his article on normal vs. radio listening,[460] which presents an ancient and primitive predecessor of his later work on the sonic object solfège.

Schaeffer does not seem to have composed a traditional score prior to *Suite 14*. Born in 1910, he was only about Cage's age at the time, but one may almost see a parallel with Friedrich Nietzsche, who set out to write his first symphony late in his life. Possibly aware of the logistical problems of such a vast project, Schaeffer reduced his ambitions from the initial symphony to a chamber orchestra of fourteen instruments and, with minor help from a composer friend, produced a French Suite with five movements. Similar to *Composed*, where Boulez-Gurdjieff had provided a basic sonic dough, the score of *Suite 14* was only the first step of the production process. Schaeffer planned to subject each of its five movements—Prélude, Courante, Rigodon, Gavotte, and Sphoradie—to a secondary composition process in the studio, using a battery of concrete techniques to explore the inner universe of the sonic matter.

In the first movement he presented the original music unaltered, aside from small modifications such as adding a touch of reverberation or a chorus effect through layer doubling. In the following movements he gradually increased his 'score-destruction' activities by applying more denaturalizing concrete transformation types.

The score of the second movement, Courante, had been difficult to perform. It was a tonal monody in which the fourteen instruments took turns, phrase-by-phrase, cell-by-cell, and sometimes even note-by-note. Schaeffer and his assistant Poullin extracted a multitude of closed groove samples from this music—an artisanal process far less

[460] See fn. Fehler: Verweis nicht gefunden aboveaboveaboveabove.

controllable with shellac discs than with the later magnetic tape loops. (Tape loops were still about two years in the future when Schaeffer and Poullin took the Courante into their crosshairs.) Their closed groove frenzy resulted in a wide variety of 'children of chance', as Schaeffer called them, and in the final collage of sampled 'frozen time objects', an unexpected, *pointillist* texture that Schaeffer compared with the dodecaphony of Webern.

Rigodon was a different matter. Schaeffer kept the rhythmic structure of this vivid, humorous dance intact—at the outset firmly established by a dialogue between drums and trumpets—and submitted the sonic objects in this rhythmic torso to increasingly intense electronic transformations.

For the Gavotte, Schaeffer had composed short, harmonious progressions in classical style. Exposed twelve times in succession, each time by a different trio from the set of fourteen instruments, the timbre of the theme was designed to grow from unusual in the domain of instruments to bizarre in the domain of concrete sonic objects. The combined speed-pitch transformations of the theme, for example, were taken to extremes that made the original theme all but unrecognizable.

Schaeffer's described the last movement, Sphoradie, as his only genuine attempt at expression. Analogous to the *Study for Pots and Pans* (*Pathos*), here he indulged in combining various techniques and musical ideas freely, so that closed groove favorites emerged next to harmonies of César Franck, and prepared-piano minimalisms could form the backdrop for a theme ripped from a violin rhapsody.

Expressing Nothing in Isolated Time Crystals

Arguably the first work of *musique concrète* and completed by the end of 1949, Schaeffer did not include a full report on the composition of *Suite 14* in the manifesto of 1950. He waited two years before publishing a more detailed description of the 25-minute work, the basis for my summary above. He did, however, report its overall plan in 1950: each movement, except for the last one, departed from a 'voluntary structure'. He ironically added that the results had been 'equally fortunate' for all preconceived constructions, in other words, the first four movements. Without giving further details on his criticisms in regard to these planned movements, he hinted that the problems had been similar to those encountered in the *Railway Study* and that, in general, the primitives in fact might have served far better to explain the general problems encountered in *Suite 14*. Calling for total freedom, including the use of abstract and concrete music side-by-side, Schaeffer then praised the non-voluntary movement as most successful 'on the level of true expression':

> Faut-il dire que c'est le dernier mouvement qui, sur le plan de l'expression proprement dite, fut le plus satisfaisant? Est-ce parce qu'il utilisait tous les moyens essayés précédemment, mais sans systématisme, et avec une plus grande liberté dans l'association des éléments constitutifs? Y compris la liberté que d'aucuns trouveront peut-être abusive de composer franchement des séquences 'concrètes' et 'abstraites', c'est-à-dire des séquences 'arrachées' à l'enregistrement original, et des phrases textuelles de cette partition préconçue?[461]

Schaeffer needed this absolute freedom in order to express nothing: "On écrit toujours pour dire quelque chose. Brusquement, on s'aperçoit qu'il faudrait écrire pour ne

[461] SCHAEFFER 1950, p. 50. ("Do I have to spell out that the last movement was most successful on the level of true expression? Is it because it employed all of the previously tried means, without systematism and with a greater freedom in the assembly of its constitutive elements? Including the liberty—which some will find abusive, perhaps—of composing concrete and abstract sequences outright, in other words, sequences ripped from the original recording, and textual phrases from this preconceived score?")

plus rien dire."[462] This aim—put on paper in December 1949 when Schaeffer wrote his manifesto—constitutes another striking parallel with Cage, who composed 'Lecture on Nothing' upon return to New York around November 1949 and presented it in 'The Club' around the year change 1949–50. Schaeffer's intention behind expressing 'nothing' is more obscure that Cage's, and perhaps not less mystical. Perhaps, with Eduard Hanslick, he sought the abstract play of sounding tone-forms, or he might have aimed to express 'nothing' for a deeper spiritual reason: it is hermetic. Brought up Catholic, Schaeffer had also been a follower of Gurdjieff in the early 1940s.[463] The group's activity in its totality is named 'The Work'. Strong non-disclosure codes exist, so that outsiders cannot possibly gain access. Schaeffer's aims to express 'nothing' may well be locked and sealed in the private spheres of this organization. In this context belongs also Schaeffer's vision of anonymous progress in history. In the manifesto's opening lines he pondered whether a new music 'might have invented itself' over the past fifty years. Mystery is a part of progress.

Whatever ultimate content and aesthetic aims Schaeffer may have had in mind, the battle for freedom of expression was staged between the language of the mind and an as-of- yet unnamed matter, directly experienced. Figure 9 shows Schaeffer's definitions of new and traditional music in its original 1950 format. If we map this grid onto his primitives and the movements of *Suite 14*, we see that he often worked from abstract to concrete *and* from concrete to abstract.

[462] SCHAEFFER 1950, p. 31. ("One always write to say something. Suddenly one becomes aware that one should write to say nothing.")

[463] See fn. Fehler: Verweis nicht gefunden above. Cf. also the figure of the guardian in Pierre Schaeffer, *Le Gardien de volca*n (Paris: Seuil, 1969).

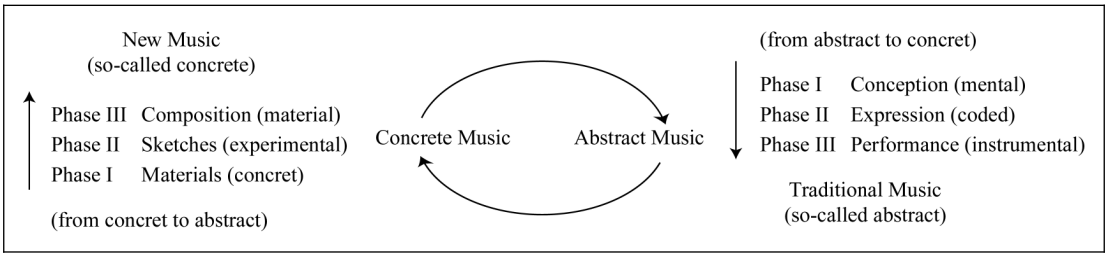

Figure 9: Schaeffer's First Sketch of the Abstract-Concrete Dialectic[464]

He hoped the crisis of traditional music could be solved through a renewal from the infinite musical resources contained in the concrete sonic matter. *Suite 14* was Schaeffer's first systematic exploration of new creative processes through cross-fertilization between the stages of concrete and abstract music. Only in the *Study for Pots and Pans* and in the final movement of *Suite 14* was freedom allowed to let art create itself.

Schaeffer's 1950 manifesto concluded with a comparison between abstract and concrete music, placing him firmly among the musical avant-garde and forecasting his future work on a New Music theory. The reference system of abstract music, conceived by the human mind, rested on note units, describing the duration, intensity, and pitch of 'tone-units' produced by specific music instruments. New music, born in the twilight between chaotic reality and a mixture of human perception, intelligence, and spirituality, demanded a more complex reference system to describe the evolution of generalized sonic objects, defined by

> leur contexture harmonique et rythmique, leur tessiture moyenne, leur couleur et leur réverbération, leurs plans, leur niveau absolu. Ces objets évoluent, eux aussi, bien entendu, dans la durée. Mais il s'agit d'une durée à deux degrés. Il y a leur durée interne, qui les fait se constituer en tant qu'objets sonores, par

[464] The scheme combines Schaeffer's table and a graphic on the topic. SCHAEFFER 1950, p. 51. © Hermann Editeurs for Richard Masse, by permission.

> construction. Puis il y a la durée dans laquelle ils sont juxtaposés. C'est peut-être là que réside la différence essentielle entre les deux musiques.[465]

Aside from the widening of the reference frame into additional dimensions of perception, the two-durations principle is the most striking aspect of Schaeffer's proposal. He had previously illustrated it in the large sonic objects of the *Railway Study*, defined by their internal rhythm, while they still took part in the external metrical rhythm. Now it is evident that the 'pointillist' sonic objects in that score are the forerunners of the isolated units in pointillism. Each complex sonic object exists in his own universe and is distinguished by a number of relevant dimensions. One sonic object may have five relevant dimensions; another one may have ten. At this point Schaeffer's thinking had soared above anyone else writing on music in 1950. From the perspective of Schaeffer's manifesto, Cage represented the 'old' science of sound, acoustics. Boulez had described Cage's piano preparations as a makeshift acoustic laboratory, with which Cage composed the inner sound in terms of the dimensions frequency, intensity, and duration. Schaeffer's long studio experience with recording may have given him an edge on Cage in the topic of 'musical media perception awareness'. Cage never had worked in a studio for an extended period of time prior to 1950. When Schaeffer encountered the acoustician, engineer, and information scientist Abraham Moles in 1951, this perception-based approach was first expressed in quantifiable terms. Moles, describing the atomic

[465] SCHAEFFER 1950, p. 52. ("their harmonic and rhythmic contexture, average ambitus, color and reverberation, their dimensions and absolute levels. Naturally these objects have a duration too, but their duration is twofold. The internal duration brings about their constitution as sonic objects, by construction. Then there is the duration in which they find themselves juxtaposed. This may well be the essential difference between abstract and concrete music.")

structure of music, had determined the number of 'pure sounds' at 13 million, and an *infinitely higher number* of complex sounds.[466] I will return to their collaboration below.

Criticizing the relentless expressivity of ordinary music, forever caught in a linear discourse, Schaeffer compared it to prose and proposed that the new music, by contrast, corresponded to a poetry of isolated time crystals:

> Tandis que si, de ce discours [de musique habituelle], est extrait un fragment considéré en soi, pour sa valeur plastique, qu'on ne se préoccupera plus d'articuler logiquement, mais de juxtaposer comme un tableau d'exposition, comme les mots d'un poème, on obtiendra une musique sans volonté d'expression immédiate, offrant, comme des objets de contemplation, des paillettes sonores, définitivement figées, quoique toutes vibrantes du temps qui passe. [...] Une musique suprême serait alors d'isoler comme des cristaux de temps.[467]

This poetic description summarized the aesthetic essence of this new music, far more nonfigurative and 'abstract' than its production-oriented adjective 'concrete' might lead us to suspect. The fascination of the 'closed groove' and the infinite promise of the 'cut bell' to discover unheard sounds, hidden in mysterious layers of the sonic matter, overruled Schaeffer's taste for restrained classical forms and instilled a desire to establish a musical equivalent to Cubism, Surrealism, and Dadaism. Abandoning linear discourse

[466] Schaeffer, "Deuxième journal", pp. 118–19. The first outline of Schaeffer's later research on sonic objects was worked out in Abraham A. Moles and Pierre Schaeffer, "Esquisse d'un solfège concret," In *A la recherche d'une musique concrèt*e (Paris: Seuil, 1952), pp. 201–28. Moles (1920-92), a prolific scientist, published over a hundred scientific articles and many books. After his involvement in concrete music, he became interested in the Bauhaus and turned to philosophy. In 1952 he witnessed Stockhausen's experiments with sine-tone synthesis. Stockhausen, in a letter to Goeyvaerts, described him as "frightfully funny".

[467] SCHAEFFER 1950, p. 52. ("If one excerpted a fragment from this discourse [of ordinary music], considered for itself, for its plastic value; if one had no worries for logical articulation, but would juxtapose like in a painting or the words of a poem, then one would create music without any immediate expressivity, offering, as objects for contemplation, sonic specks, forever congealed, yet vibrating all over with the passage of time. [...] A supreme music might be compared to isolated time crystals")

or prose, Schaeffer stressed the poetic pointillism of sonic objects, their individuality, and their isolation and described them as 'isolated time crystals'.[468]

Cage and Schaeffer's Musical Relativity Theory

On the other hand, we saw above that Cage came to Europe with an extensive music theory in hand. Schaeffer and Cage had several meetings and talks during the spring and summer of 1949, after their first encounter in early June 1949. These contacts may have found repercussions in Schaeffer's general theory of new music. Cage's theory was very advanced in terms of structural depth and refinement. Figure 10 shows the core of Cage's 'universal theory of music' and compares it with the core concepts of Schaeffer's generalized music theory.

[468] These crystals may have found their way to Cologne and to Stockhausen's mind. In a letter to Goeyvaerts from 23 November 1951, he described the basic units of the first movement of *Spiel* (later: *Formel*) as harmonic-melodic crystalline blooms: "Schon vier Wochen fast denke ich diese Kristalle durch und skizziere sie. In 2 Tagen werde ich fertig sein, und dann kann ich anfangen." SABBE 1981, p. 22. ("I have been thinking about those crystals for almost four weeks and I am sketching them. In two days I will be ready, and then I can start."). Schaeffer's manifesto remained the only text from the creator of concrete music until far into 1952. Eimert, Meyer-Eppler, even Goeyvaerts may have answered to Stockhausen's requests for information on the Parisian concrete music.

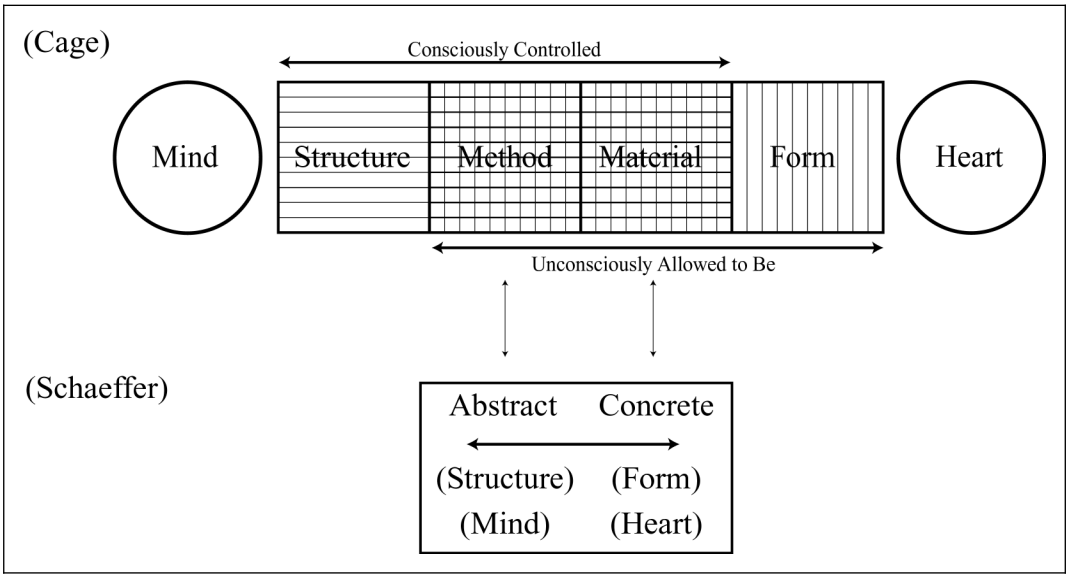

Figure 10: The General Music Theories of Cage and Schaeffer[469]

Although Cage's scheme was only printed in Paris in the last days of 1949, Cage carried the English version during his long stay in Paris. Schaeffer must have been familiar with the scheme; there are too many parallels between Cage and Schaeffer. Even if Schaeffer had not learned about these ideas from one of the printed articles or from Cage himself, there were common acquaintances who would have brought the ideas to his attention. Among others, Pierre Boulez might have discussed the scheme with Schaeffer. Within days after Cage's article was published, on 3 January 1950, Boulez confirmed he was reading it, researching Meister Eckhart's writings.[470] A week later he told Cage of his plans to experiment at the Schaeffer studios, suggesting he saw Schaeffer

[469] The Cagean part of the scheme is from John Cage, "Forerunners of Modern Music," *Tiger's Eye* (March 1949), quoted from *Silence* (1968). © The John Cage Trust, by permission. This journal is rare. The scheme was also reprinted in David W. Bernstein, "John Cage and the Aesthetic of Indifference," *The New York Schools of Music and Visual Arts*, Edited by Steven Johnson (New York: Routledge, 2002), p. 119. Reprinted in French in a slightly variant form similar to a lying Yin-Yang symbol in Cage, "Raison d'être", pp. 64–69. Neither of the two forms of the scheme are reprinted in *Silence*. The bottom portion is a compressed form of Schaeffer's scheme, shown in Figure 9 above. N.B.: Just as in Cage's inner blocks, Schaeffer's arrows work in both directions.

[470] Cage, "Raison d'être", pp. 64–69. Boulez interrupts his letter after the statement "...your ideas about form and method forced me to read Meister Eckhart" and changes the subject when continuing. NATTIEZ 1990, p. 70.

in the next couple of days. The relation between the two schemes is direct. Schaeffer's 'Abstract' and 'Concrete' correspond to 'Method' and 'Material'; the rest of Cage's scheme can be omitted or collapsed into the 'Abstract' and 'Concrete' classes for later theoretical elaboration. Note Cage's "unconsciously allowed to be" arrow, which would correspond exactly to Schaeffer's composition method for *Study in Pathos* or Sphoradie.

In 1950 Cage's compositions would still technically originate on the left of his chart, but by 1960 he had grown fonder of the right extreme, as he found ever-new ways to listen. Schaeffer started out in the center of the chart, under 'Method' and 'Material', quickly shifting towards the right and concentrating on 'material' and its 'unconscious' qualities. Of course one needs to account for his use of traditional forms, as mentioned in connection with his *Railway Study*. (In Cagean terminology, these 'forms' are 'structures'. 'Form' applies to the actual music and is experienced with the heart, irreducible to rational analysis.) Schaeffer and Cage were opposites with disconcerting similarities. One of the most striking passages in Cage's text, from Schaeffer's perspective, occurred near the end of the article:

> Claim
> Any sounds of any qualities and pitches (known or unknown, definite or indefinite), any contexts of these, simple or multiple, are natural and conceivable within a rhythmic structure that equally embraces silence. Such a claim is remarkably like the claims to be found in patent specifications for and articles about technological musical means (see early issues of *Modern Music* and the *Journal of the Acoustical Society of America*). [French version: For example—and the parallel is remarkable—machines to produce hitherto unknown timbres have been invented, described, and even patented.] From differing beginning points, towards possibly different goals, technologists and artists (seemingly by accident) meet by intersection, becoming aware of the otherwise unknowable (conjunction of the in and the out), imagining brightly a common goal in the world and in the quietness within each human being. [French version: ...scientists and artists are suddenly faced with the same discoveries, and while the former are overjoyed with a new device (which serves them to

> make investigations into the unknown), the latter are overjoyed with a new technique (which serves them to exteriorize their thinking).][471]

Since Cage and Schaeffer had met already in June, the mention of a patented new device could now be read as a direct reference to Schaeffer's 'most general music instrument imaginable'—especially since the text was changed. It matters little if Cage or Goldbeck made the change for the benefit of French readers, unfamiliar with the U.S. journals from the English version. The second textual change is even more intriguing. The English text is hermetic and 'abstract' (conjunction of the in and out), while the French text has become specific in terms of Schaeffer's theory (the scientist investigates the 'concrete' unknown, while the composer realizes 'abstract' thought).

Nevertheless Cage's article was printed two months before Schaeffer's manifesto, and a careful reader might have picked up the similarities of the theoretical approaches. When he decided to come forward with an alternative project for a generalized music, he had to establish a minimum distance from Cage to secure an independent existence for concrete music. In his mind, he disagreed on everything with Cage: his aim was to rejuvenate classical music, using technology, even if he was not entirely sure how to go about it. Cage was a pupil of Schoenberg—and in Schaeffer's world the Viennese represented the German enemy—and he was close to Boulez, who was French but misguided by Leibowitz. Schaeffer could not afford to be drawn too deeply into Cage's

[471] I inserted variants between English and French text in brackets; my retranslation into English. The translator from the original English to French was Fred Goldbeck, editor of *Contrepoints*, in all likelihood assisted by Cage. Cage, "Forerunners", pp. 66–67. French in Cage, "Raison d'être", p. 68. "Dans une construction rythmée, faite de son et de silence, toute sorte de caractère et de hauteur de son, de timbre (connu et inconnu, défini ou vague) et toute sorte d'ensembles de sons (simples ou complexes) peuvent *naturellement* trouver leur place. Ainsi (et le parallélisme est à remarquer) on a inventé, décrit et même patenté des machines à produire des timbres jusqu'ici insoupçonnés. Sans se concerter, par hasard apparamment, et ayant probablement des but différents, savants et artistes sont soudain placés devant les mêmes découvertes, et se réjouissent les uns d'un nouvel appareil (qui sert à faire des investigations dans l'inconnu) les autres d'une technique nouvelle (qui leur servira à extérioriser leur pensée)."

sphere. By 1952, Schaeffer had further edited his 1948 log to suggest subcutaneously that he had developed the prepared piano, both independently of Cage and *more authentically*. He asserted that Cage's use of *his* prepared piano was 'abstract'—a clearly negative adjective in this context—both in conception *and* execution:

> L'usage du piano est semblable dans les deux cas, mais aboutit chez John Cage a une musique qui reste encore assez abstraite dans sa conception et son exécution.[472]

Despite his alleged conservative leanings, Schaeffer, to his dismay, found himself in the company of 'atonalists', who were attracted to the new possibilities of electronic music:

> Tandis que je rêve d'un classicisme rigoureux, de dimensions nouvelles à l'univers de la dominante, d'une harmonie de sphères, ou l'homme et Dieu parleraient le même langage, me voici en pleine matière, pataugeant dans l'informe, environné d'atonalistes qui me considèrent avec des yeux de cannibales, et qui me laissent encore en vie dans l'espoir que je leur apprendrai, quelque temps encore, à se servir de la fourchette...[473]

Perhaps Schaeffer honestly believed in his own classicism, but we cannot take his words at face value. He often acted in an iconoclastic manner. He conservatively cut recorded music into pieces and reassembled them chaotically. He sought to express nothing, broke musical syntax, reduced music to isolated sonic objects, and called for an aesthetic of juxtaposition in the manner of a poem or a painting: "Just dip, no why."[474] These are not commonly acknowledged characteristics of mainstream classicism. His anti-expressive

[472] Schaeffer, "Premier journal", pp. 26–27. ("The use of the piano is similar in both cases, but with John Cage it results in music which is still quite abstract in its conception and execution.")

[473] Pierre Schaeffer, "Expérience concrète en musique," in *A la recherche d'une musique concrèt*e (Paris: Seuil, 1952), p. 197. ("While I dream of a strict classicism, new dimensions of the tonal universe, a harmony of the spheres, where God and Man would speak the same language, here I am, in the middle of things, wading through the Amorphous, surrounded by atonalists, who look at me with the eyes of cannibals, and who leave me in life for the moment, in the hope that I might teach them, a little longer, how to use fork and knife...") While this is two years later than the period 1949–50 we are discussing currently, Schaefer did not change his position on classicism or dodecaphony in this time frame. As we will see below, the Parisian dodecaphonists were the first who joined the Schaeffer studios in 1950.

[474] That is one famous reason, quoted by Cage, why Zen monks take so many baths.

stance was shared by young composers, first and foremost perhaps Goeyvaerts, Stockhausen, and Cage, but also Boulez. With the Courante from *Suite 14* Schaeffer had even succeeded to create a work reminiscent of the sparse, disjunct textures of Webern's late works.[475] And this particular movement from the *Suite 14* may well have been the very moment, this elusive point of birth, at which Schaeffer understood the immense, far reaching powers of the concrete. Schaeffer saw Webern as the most extreme of 'abstract composers'. Leibowitz's characterization of Webern as 'composer of the future' was well established in Paris by 1949, as reflected in its adoption by many of the most gifted among young Parisian composers. The striking paradox of the Courante, then, was that here a Webernesque result had been reached through the opposite approach, setting out from the concrete. From a compositional standpoint, the true Courante was born in long and inspired hours of experimentation with the concrete material. There had been no prior concern for abstract schemes on the syntactical level and the timbres emerged from the infinite, mysterious depths of the sonic matter:

> I1 y en avait de vifs, de lents, de pâles, de brillants. Il y en avait d'inoubliables, qu'on n'eût jamais entendus, tant qu'ils étaient englobés, englués dans leur matrice initiale. Déjà drogués de cette substance nouvelle, nous les faisions 'passer', nous nous les montrions quand ils nous semblaient de bonne prise... [476]

The discovery of ever new, unsuspected 'timbres within timbres' was the essential step in the composition of the Courante. The focus in this piece—and only in this piece—was the exploration of the concrete sonic matter with the 'closed groove' technique. From

[475] According to Schaeffer, "...c'était davantage la facture hachée de la nouvelle courante, qui la faisait ressembler à un Webern." Schaeffer, "Premier journal", p. 43. ("...it was more the chopped texture, which made the new Courante resemble a [work of] Webern.").

[476] Schaeffer, "Premier journal", p. 42. ("There were quick and slow, pale and brilliant ones [closed groove samples]. Some were unforgettable and had never been heard before, so much they were incorporated and glued into their original womb. Already quite drugged by this new substance, we 'passed' them around, showed them to each other when they appeared to be good [in]takes..."

our twenty-first century perspective, an age where synthesizers, samplers, and powerful digital personal computers are everyday fare, it is perhaps hard to imagine the fascination of this crude, disc-based sampling technique. One could resurrect the atmosphere by setting up a wide number of samples—about one second in length, the duration of a single revolution of a 78 or 33 rpm shellac disc—and listening to those samples, for hours.

Schaeffer's reference to drugs in this context—"we 'passed' them around"—opens up the possibility that he and his collaborators were enjoying marihuana or hashish in the studio at 37 Rue de L'Université. Metaphor or reality, the comparison may be hard to understand for a twenty-first century reader in times where the use of soft drugs is criminalized and, in some countries, long prison sentences are given for possession or consumption of soft drugs. From Schaeffer's perspective in the late 1940s, drug use was not criminal but associated with famous Surrealists such as André Breton or Salvador Dali. In addition, one should note that Schaeffer did administrative work for the French colonies Morocco and Tunisia for the past one or two years. In those countries alcohol is forbidden while hashish is part of the cultural norm. Schaeffer could hardly have avoided learning about the cultural norms of the people and nations he represented.

The point is, referring back to the emerging theory of concrete music, that hashish is known to have a drastic impact on our perception. The substance changes and enhances the sensual experience. For example, it typically can result in the magnification of some otherwise less important perception, the emergence of a detail within a picture or some particular feature with a more complex musical texture of music. The drug may induce a freshness and immediacy into otherwise common experiences. This is why it was hailed

by hippies, for example, as a tool to widen consciousness, and this focus on perception and discovery is a direct parallel to the aesthetic program of concrete music. Schaeffer's soft drug parallel makes a lot of sense indeed—independently of the question if he had or had not used such drugs during their 1949 'closed groove' frenzy—but, conscious of its limited use in a world largely inexperienced in the matter, he never expanded on it in his later writings.

From the perspective of timbre composition in wider terms, the discovery of Webern —although somewhat imperfect—within the mystery of the sonic object, must have been extremely inspiring for Schaeffer. None of his other works comes as close to Webern and, yet, he had not set out to realize music that sounded like Webern. In this context it is less important to decide if *we* perceive these Webernesque traits; rather, it was Schaeffer's perception, his surprising discovery of an abstract Webern in a concrete Courante, which could have made the difference. It provided the eye-opening experience that led him to generalize his earlier hypotheses, established during the realization of his radiophonic noise studies, and to formulate a comprehensive theory for a generalized type of music.

The Courante also provided a bait for 'misguided' French dodecaphonists: Schaeffer hoped to enlist them in a concrete music reeducation program to wean them from their addiction to dodecaphony. To serve his own utopia of a new classicism, Schaeffer defended experiments that jarred with his own sense of aesthetics. They were necessary steps on the path towards a better future.

The original definition of concrete music, then, was laid out as a quantum leap in the history of music. Schaeffer defined it as a generalized music of which *any* traditional

music—no matter from which corner of the globe—merely constituted a specific case. This idea may have been inspired by Cage's all-inclusive definition of music or, alternatively, it may have been designed in analogy to the generalized 'mother of all instruments' aided, in no small part, by the experience of the Courante. In a visionary flash, he characterized traditional music as *a special case of concrete music*:

> La musique ordinaire est à la *musique concrète* ce qu'est la mécanique classique à celle de la relativité. La musique ordinaire est un cas specialisée d'une musique généralisée.[477]

According to the original manifesto, then, concrete music was a far more encompassing concept than its later, scaled-down definitions would have us believe. Two years later, in 1952, Schaeffer formulated his hopes and ambitions less flamboyantly and in a more practical way, in terms of a research program for concrete music. But in the time frame around 1950, his manifesto suggested that concrete music included *all other types* of music, known and unknown. The origin of concrete music, in its initial vastness and comprehensiveness, is hard to imagine without the direct model provided by Cage's universal theory of new music. But rather than only formulating an adapted version of Cage's theory, Schaeffer's manifesto aimed to propose a 'classical' alternative to Cage's and Schoenberg's, who he regarded as abstract musicians. Perhaps the encounter with Pierre Henry and their good progress on *Symphonie pour un homme seul* further encouraged Schaeffer to step into an arena with Cage, who after all had been a professional musician for more than ten years and whose mind had been trained in direct dialogue with the best minds of the Bauhaus, Dadaism, and the New York School of abstract expressionist painters. Boulez, for his part, was equally intrigued and did not

[477] SCHAEFFER 1950, p. 52. ("Traditional music is to concrete music like classical mechanics to relativity. Traditional music is a special case of a generalized music.")

wait long before providing his own general theory of new music. We can follow his struggles to establish such a theory in the letters to Cage, where he presented his first results in late 1950. Boulez's efforts 'eventually' culminate in the publication of the serialist manifesto "Eventuellement...".

THE MILESTONE: COLLABORATION WITH HENRY

During the work on *Suite 14*, which took from August to November 1949, Schaeffer met Pierre Henry. At that time, Henry had just won a commission to compose the music for a television documentary 'Seeing the Invisible'.[478] He had come to the studio to record his percussion score along with the images, as in the silent film period. After his recording session, Schaeffer invited Henry to play the same music in several tempos on a piano, prepared in Henry's way.[479] Schaeffer loved these versions even better than the original realization for the documentary.[480] He had been searching for partners for his experimental new music project and Henry was the match. While Henry composed and performed music, Schaeffer took care of the transformation and recording techniques.

Perhaps their collaboration marked the true beginning of concrete music because, in Schaeffer's mind, one of the major shortcomings of concrete music had been the lack of

[478] The film demonstrated the use of slow-motion and close-up techniques, as tools to disclose natural phenomena.

[479] It may be factually correct to claim that Henry's piano preparations were different from Cage's, because they included the use of recording and amplification strategies. I tend to see recording and amplification techniques as original concrete music techniques or 'synthesis-by-experimentation', as I have called them above. Some authors suggest Pierre Henry of the *musique concrète* group developed the prepared piano technique independently from Cage. While that is not impossible, I have seen no clear statement by Pierre Henry to that effect. In *Journal de mes sons*, a radio drama, Henry suggests he showed Schaeffer prepared piano sounds during their first meeting but wrongly dates the meeting 1948. In fact, their first meeting took place in 1949; Pierre Henry, *Journal de mes son*s (Paris: Séguier, 1996). Moreover, the prepared piano technique of Cage was already described in September 1947 in *Musical America*. The first actual use of a prepared piano timbre by the *musique concrète* group occurs in *Symphonie pour un homme seul* (1949–50). The timbre is named *élement Cage*. Schaeffer and Henry were sworn to secrecy on this issue of the prepared piano, apparently a part of their life-long bond.

[480] Pierre Henry, *Journal de mes son*s (Paris: Séguier, 1996).

an instrument. He had felt prisoner of the cumbersome technology and yearned for a more direct musical experience. The prepared piano turned out to be the solution. It freed concrete sounds from the bottleneck of the four-note instrument. Musical phrasing and duration-independent fragments could now explode the narrow confines of the closed groove, and Henry was a virtuoso performer.

Their first collaborative works were *Bidule en Ut* (Trifle in C), a two-minute classic for prepared piano dating from late 1949, and the most famous of early concrete music works, the *Symphonie pour un homme seul*. This symphony was premiered in a 22-movement version, lasting 45 minutes, during the first full-length *musique concrète* concert on 18 March 1950.[481] All concrete music compositions until the summer of 1951 belong to the initial shellac disc period.[482] Thus, at the premiere, Jacques Poullin and Pierre Henry performed live, changing discs and trying, keeping calm hands to put the needle on the required spots. Schaeffer took charge of sound projection levels, feeling strangely useless in his position as 'conductor'. This March 1950 premiere marked the beginning of *musique concrète* as a crusade for a renewal of classical music, providing an alternative to the music of Cage and other 'atonalists'. For several years, the *Symphonie* was the showpiece of concrete music. It contains a characteristic alternation of human sounds (steps, knocking on doors, breathing, voice, whistling) and instrumental sounds, mostly from the prepared piano.[483] Schaeffer described the *Symphonie* as an 'opera for

[481] Two days before the premiere concert, on 16 March 1950, Schaeffer gave a lecture on concrete music at the Sorbonne. The lecture included the presentation of the prepared piano work *Bidule en Ut*.
Serge Moreux, in his concert introduction, compared Schaeffer's music to the discovery of a 'sonic continent as virgin as the island of Robinson Crusoe'. For this and more on the premiere and its reception by critics, see Schaeffer, "Premier journal", p. 69 ff.

[482] For an embarrassing historic blunder in *New Grove 2*, see: s.v. "Schaeffer, Pierre". The entry mentions Schaeffer's *tape compositions* of 1948.

[483] One prepared piano timbre is named after Cage. Schaeffer gives details on it, adding they met 'a couple of weeks before'. See Schaeffer, "Premier journal", p. 63 along with a score excerpt on p. 62.

the blind', a work of poetry from noises and sounds, from splinters of text and music, action without content. This match of classicism and modernism corresponds with the aesthetics described in the manifesto, published two weeks prior to the premiere.

Soon afterwards Schaeffer had to leave yet again in his function as radio administrator. But in contrast to the year-long hiatus between June 1948 and August 1949, this time musical activities in the Studio d'Essai continued during Schaeffer's absence. Taking charge in the studio, Pierre Henry began dedicating his full time to the new type of music. From the Parisian dodecaphonists, Le Roux, Grimaud, Antoine Duhamel, and Micheline Banzet joined the studio activities in 1950.[484] Maurice Le Roux developed a color code system to bring order into the sprawling stock of discs—grown from ca. 500 after the researches into noises to ca. 4,000 after the premiere of *Symphonie pour un homme seul*—and Michèle helped him organize a shelving and cataloging system. Pierre Henry, a percussionist by training, was in his natural habitat with the shellac discs. He quickly developed into a true virtuoso DJ in playing the 'four-note instrument' and added new discs (mixed or freshly recorded) on a daily basis. A variable-speed disc player/recorder added a new dimension to the technical equipment of this first historic electroacoustic music studio.

By the time Schaeffer returned from his administrative interlude, Henry had vastly increased the shellac disc sound library. He also composed *Concerto des Ambiguités* and *Musiques sans Titres*. Schaeffer regarded both the new classification system and these

[484] Antoine Duhamel (1925–) studied with Messiaen (1947–50) and Leibowitz (1945–53). He wrote in many genres, but is most reputed for his film music and operas. Micheline Banzet-Cruze (now: Banzet-Lawton) studied with Messiaen (1948–50). These names are mentioned by Schaeffer, but many others composers must have taken a look. Boulez indicated in January 1950 that he was going to do studio work and this does not—as Nattiez suggested—refer to his workshop of October 1951.

compositions as failures, but recognized Henry's extraordinary adroitness in handling the equipment. After some theoretical reflections on 'fat notes' (referring to a hyper-complex musical constellation) and the difference between causal and result scores, Schaeffer, Le Roux, Pierre and Michèle Henry, and Grimaud launched a concerted effort to notate concrete music (5th movement of *Musiques sans Titres*). It was the historic predecessor of urban ethnomusicology. Each pair of ears came up with a different analysis of certain musical elements in *Musiques sans Titres*. Le Roux and Grimaud collated the results, somewhat complementary, into a single score.[485]

DADAIST NEO-CLASSICISM: TOUT LA LYRE

Schaeffer gives few details on his activities in the period between March 1950 and March 1951. He must have started work on setting up the institutional framework for the *Groupe de recherches musicales concrètes* (GRMC) in 1950, talking to the responsible administrators, engineers, and developers at the French radio.[486]

For April and May 1951 he provided a second research log,[487] mainly to document the composition process of his next work, a concrete opera on the myth of Orpheus and Eurydice. Initially he had been inspired by the vision of Maria Ferès singing the alto castrato role in the Italian version of Gluck's *Orfeo ed Euridice*. Schaeffer denounced his choice as 'probably absurd', failing to disclose his true motivations or, perhaps, surmising a rather solid historic knowledge from his reader. There are multiple parallels with his declared hopes for concrete music: a revival of classical values through the

[485] For details, see Schaeffer, "Deuxième journal", pp. 80–86.
[486] General Director was Jean Porché. Jean Tardieu was the director of the Studio d'Essai.
[487] Schaeffer, "Deuxième journal". The research log recounts activities and events by date. It is preceded and followed by text in essay format, which also includes events from the two-year period. The style of the log once again suggest a 'retroactive' work, written sometime in 1952.

power of the concrete. Orpheus's fame goes back to the sixth century before Common Era. In a number of influential classical texts he is depicted as unequalled singer to the lyre who possessed magical power to move all living things.[488] The musical settings of the myth most famously heralded the beginning of the Renaissance, an epochal shift in music history. The specific model mentioned by Schaeffer, Gluck's *Orfeo*, is known as the first reform opera, a work in its origins indebted to French opera and drama. Gluck was familiar with both *tragédie lyrique* and *opéra comique*. Librettist Calzabigi had spent much time in Paris, and his experience of French theatre and opera are evident throughout the libretto. In 1947 Stravinsky, working closely with choreographer Balanchine, wrote neo-classical music for an *Orpheus* ballet and in 1949 Jean Cocteau created a poetic adoption of the legend in his film *Orphée.* The list is long indeed, and in this light the choice of the Orpheus topos for Schaeffer's concrete opera was made very consciously; it contains an unmistakable endorsement of classical aims and values. Schaeffer pursued to describe his experience of Maria Ferèz in Gluck's Orpheus, as the source of his inspiration for his *Orphée*:

> Au-delà du visage enfariné, couronné de cheveux noirs, sans sexe, à travers cette voix surprenante, si peu celle des 'cantatrices', une aventure personnelle se jouait, à la fois particulière et universelle, une solitude, une disponibilité narguant le monde et les mondains. Héroïne aux Champs-Elysées, Maria Ferès était une occasion d'audace, un exemple de temérite. Face a Orphée contralto, il faudrait une Eurydice comédienne, une Maria Casarès par exemple. Des duos inusités: voix parlée contre voix chantée, *bel canto* contre orchestre concret. Auto-duos: j'imagine Orphée chantant avec sa propre voix; quant à Eurydice, elle crée un enfer de mots qui est son enfer. La parole enclôt un être dans sa

[488] N.B.: Again Schaeffer includes a magical element and again he goes back to the issue of the 'First Causes'. Cf. Study for Piano, above. Although musical settings of the Orpheus myth mainly have concentrated on the death of Eurydice, Orpheus's wife, and his attempt to retrieve her from the underworld, the classical texts include many examples of Orpheus's powers to enchant *all* living things with his music.

> propre pensée. L'enfer des bruits n'est pas le pire. Chacun secrète son enfer au sein de sa propre existence, sans issue.[489]

Here Schaeffer pinpointed and reported the exact inspiration, the fundamental idea of the work. Behind the mask of a desexualized non-person, Schaeffer perceived the revolt of an individual in its conflicts with the outside world, with society. The opposite part of Schaeffer's anti-establishment Orpheus was an existentialist comedian Eurydice, creating a hell for herself, from her own words. According to Schaeffer, speech created isolation rather than communication and the hell of words was worse than the hell of noises. These topoi have existentialist, perhaps even Lacanian overtones. The idea for the opera is pre-conceived. It already contains a few structural oppositions between musical elements, as detailed in the excerpt above.

But there was no clear architectural, 'abstract' plan for the whole composition. In order to realize the work, Schaeffer listened to sounds in the studio, simply trying to find his ideas *within* the 'concrete' material. He described the difficulties and frustrations of this approach in some detail in research log 2. Setting out from all sonic objects that had accumulated in the studio—this point of departure accounts for the title *Toute la Lyre* that Schaeffer's gave to his setting of the Orpheus myth—he operated a selection, adding up recordings of intuitively selected materials into larger units. Henry stood by his side and assisted him in the process. Textures of various densities and complexity emerged and

[489] Schaeffer, "Deuxième journal", p. 89. ("Beyond the white face, crowned by black hair and without gender, and mediated by this surprising voice, so uncharacteristic of professional singers, a personal adventure unfolded, at once individual and universal, a solitude, a readiness to flout the world and its socialites. Heroine of the Champs-Elysées, Maria Ferès presented a case of daring, an example of foolhardiness. Facing contra-alto Orpheus, I would want a comedian Eurydice, a Maria Casarès, for example. Uncommon duos: spoken voice and singing, *bel canto* and concrete orchestra. Self-duos: I imaging Orpheus singing with his own voice; as far as Eurydice is concerned, she creates an inferno of words which is her proper hell. Speech encloses a being in its own thinking. The hell of noises is not the worst. In secret everyone guards their hell at the innermost of their existence, with no way out.")
Note that Maria Casarès played the part of the princess in Jean Cocteau's 1949 film *Orphée* and the part of Nathalie in Marcel Carné's 1945 film *Les Enfants du Paradis*.

resulted in ever-larger higher-level structures which, in the last step, were supplied with appropriate texts.

It was Schaeffer's purest effort to realize a composition in reverse, starting from the concrete level and, if one disregards the selection of the Orpheus myth and the specific content Schaeffer aimed to express, without any prior abstract plan. Did Schaeffer hope that the overall intention to adhere to a neo-classical aesthetic might find its way into the final composition, despite following a highly intuitive composition procedure?

The final work showed that selecting sonic objects for their intrinsic perceived value in this particular case had resulted in chaotic structures, coming nowhere close to a neo-classical aesthetic. The work is stylistically in no man's land; it is unlike anything else. Apparently no recording was released until Henry in 1988 produced an 'echo' version, *Écho d'Orphée*. He combined music from *Toute la Lyre* (sometimes also called *Orphée 51*) and *Orphée 53*, the revised version of *Toute la Lyre* that led to the famous 'battle of Donaueschingen' scandal in 1953. *Orphée 53* also included a long final section by Henry, which he later produced separately as *Voile d'Orphée*. This work became rather successful and traveled around the world, in combination with a ballet choreographed by Maurice Béjart. Henry's *Voile d'Orphée* is not included in the 'echo' version. Originally *Orphée* included live singing and cembalo playing on stage. It is hard to imagine how listeners in 1951 could have responded. There are fragments of a neo-classical aesthetic, especially in Schaeffer's vocal or instrumental writing, but these are surrounded, engulfed, dismantled, exploded within a context dominated by unpredictable concrete sonic objects of all kinds. Some of these sonic objects have a purely musical timbre surface; some call up associations to the world outside of music. Certain transformation

techniques point strongly to Schaeffer's roots in experimental radio play. One cannot escape the impression of a brutal stylistic stew which, if anything, is opposed to neo-classical values and aims to destroy it by presenting melodic fragments in this wild world of sonic objects. Some of these objects are of high musical interest, even breath-taking beauty. But their juxtaposition neutralizes and often destroys their features, as they cannot escape the heterogeneous onslaught of the entire world of sound: *Toute la Lyre*. Such is the fascinating, contradictory world of Pierre Schaeffer.

Toute la Lyre was premiered in July 1951 in the vast Empire theatre, on Avenue Wagram in proximity of the Parisian Etoile. This concert was the second big event in the life of concrete music, after the premiere concert of March 1950 in the Ecole Normale de Musique. It included a number of important technical changes. Several tape recorders, two *phonogènes*, and a *morphogène* had arrived in April 1951.[490] Initially these new devices did not work as expected, but gradually the problems were solved and almost four years of disc-based experimental music came to a close.[491] The first concert at the *Ecole Normale* relied completely on discs, turntables, and live DJ performance. The second concert at the *Empire* was already able to make use of the new tape recorders for sound projection. The tape recorders also increased the possibilities in the late realization phase of *Toute la Lyre*, although the sonic objects in that work were still drawn from the shellac disc library. Therefore I would see *Toute la Lyre* as the last major work of the disc-based period of concrete music. Unfortunately there is no definite recording of the

[490] The *phonogène* brought Schaeffer's dream of the 'most general instrument imaginable' closer to realization. This modified tape recorder, operated by a small keyboard, allowed timbre transpositions within a two-octave range, through multiple play-back heads operating at different speeds. Schaeffer patented the machine. See Poullin, Jacques, "Musique Concrète," In *Klangstruktur der Musi*k (Berlin: Verlag für Radio-Foto-Kinotechnik, 1955), p. 121. The *morphogène* allowed independent transformation of the various phases of the sonic object. Tape recorders ran at 76.2 cm/sec.

[491] The technical problems are described in Schaeffer, "Deuxième journal", pp. 96–98.

original work, and we have to be content with the combined format established by Henry in *Echo d'Orphée*.

At the first concert, Schaeffer had become aware of the 'performer problem' in the media-based music and so, in order to provide a comprehensive multi-media experience, he designed a number of visual elements for the concert at the *Empire*. For the concrete opera portion of the concert, singer Ferèz provided her Orpheus part like in any opera, with the only difference that the orchestra was replaced by concrete music on tape. But Schaeffer also envisioned a spatial sound projection system, which had been developed by Jacques Poullin. By 1951 Poullin had built a prototype, based on pioneering stereophony research of French radio engineers Jean-Wilfrid Garrett and José Bernhard.[492] In the first part of the *Empire* concert, Le Roux performed the *Symphonie pour un homme seul* in a revised version, which had been transferred to tape. The music distributed in Darmstadt on 10 July 1951 during the workgroup *Die Klangwelt der elektronischen Musik* must have been the same. But Darmstadt missed the absolute world premiere of the sound spatializer. Performing on stage for the audience, Le Roux determined with his right hand sound location and movement and, with the left hand, the sound projection volume with the controls of the 'sound spatializer' device.[493] By the next year, the prototype had been perfected and included full three-dimensional control, with one loudspeaker above and three around the audience in a tetrahedron configuration. We will return to this important May 1952 concert below.

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[492] See their articles in *Polyphoni*e, 6 (28 February 1950). This issue is an amazing testament to the fact that Paris had two or three years of a head start in electronic music. It is filled with highly relevant material in all branches connected to electronic music, including three articles on sound film.

[493] Schaeffer, "Deuxième journal", pp. 108–9. Still a prototype at that point, according to Schaeffer.

* *

In 1950–51 Schaeffer unofficially founded the *Groupe de recherches musicales concrètes* (GRMC) and, by October 1951, Jean Porché, director of French National Radio, accorded the GRMC official status—and funds. Poullin had long been Schaeffer's assistant in technical matters and, soon, Abraham Moles from Marseille would move to Paris and join the team in 1952. By October 1951 the Schaeffer studios welcomed a first group of students for a training course in concrete music techniques—Jean Barraqué, Boulez, André Hodeir, and Michel Philippot. The switch from disc to tape-based recording technology allowed composers to exert much finer a level of compositional control. New technology, the opening of the concrete music studios to a wider group of younger composers, and the excellent collaboration between artists and path-breaking engineers at the Parisian radio, unique and unrivaled in the world—a situation that had so long been described and hoped-for by Cage—announced the beginning of a third phase in the history of French electroacoustic music in the fall of 1951. We will discuss this phase in chapter seven, but we must first turn to the Parisian student years of Karel Goeyvaerts.

CHAPTER 5: NEO-CLASSICISM OR SERIALISM 1949–50

This chapter introduces the talented neo-classicist Goeyvaerts, who moved to Paris in the fall of 1947 to study composition with Milhaud and analysis with Messiaen. We briefly discuss the neo-classical works written during his three-study in Paris. His first dodecaphonic song dates from late 1949, written only months after his encounter with Cage and near the end of his study period. This encounter is the only acknowledged positive influence that took place prior to his interest in serialism, suggesting that Cage's music and theories spurred Goeyvaerts's turn to serialism.

Barraqué, who joined Messiaen's class, was likely Goeyvaerts's main teacher in all matters of serialism. He had studied Leibowitz's book as early as 1947 and became Goeyvaerts's friend in 1948. The music of Barraqué is shown to be rivaling Boulez's in complexity and artistic sophistication.

Finally Boulez's first appearance as teacher of timbre serialism is dated to March 1951. This dating hypothesis is tentative; the range lies between the fall of 1950 and the spring of 1951. This class signals the reconciliation between Messiaen and Boulez and, depending on the date of these classes, Boulez may have thought both Classic and synthetic timbre serialism. Michel Fano and Jean Barraqué were among his first pupils, applying these new composition techniques and theories ideas in their own ways.

Karel Goeyvaerts

Belgium composer Karel Goeyvaerts (1923–92) started out with a traditional music career.[494] After completing a four-year music program at Antwerp Conservatory,[495] in the fall of 1947 he relocated to Paris in order to study composition. Initially he stayed at the house of the Loriod family and prepared there for the difficult entrance exams in composition. In early 1948 he passed this hurdle, officially becoming a composition student of Darius Milhaud and Jean Rivier. The two teachers taught the composition class in alternate years, because Milhaud kept a second teaching position at Mills College and, for many years, migrated back and forth yearly between California and France. This arrangement was scheduled to begin in 1947–48, but Milhaud fell ill shortly after his return to France in 1947 and so Henri Busser, who had hoped to retire that same year, had to stay one year longer on the job. Due to these unusual circumstances Goeyvaerts ended up with three composition teachers: Busser in 1947–48, Rivier in 1948–49, and finally Milhaud in 1949–50.

Busser, a former pupil of Massenet, filled lesson time with anecdotes from the past and Goeyvaerts was not enthusiastic. He appears to have been closer to Milhaud, at least until he began taking an interest in dodecaphony in late 1949. Jean Rivier—a famous French interbellum composer close to Honegger and Stravinsky in his aesthestics—was

[494] The most extensive information on Goeyvaerts is in Dutch: Karel Goeyvaerts, *Autobiografi*e (Leuven (Belgium): Centrum voor Muziek, 1983). An excerpt was published in English: GOEYVAERTS 1994, pp. 35–54.

[495] While the Flemish Belgians had not a single early dodecaphonic composer, the Wallons were among the leading early dodecaphonists in post-war Europe. The way was led by Souris and Froidebise in Liege and Bruxelles and later, Henry Pousseur was among the most active composers of extended serialism. In this respect Goeyvaerts, who came from the Flemish part of Belgium, started out in an environment that had no connection whatsoever with dodecaphony. See Herman Sabbe, "Het Muzikale Serialisme als Techniek en als Denkmethode: en onderzoek naar de logische en historische samenhang van de onderscheiden toepassingen van het seriëerend beginsel in de muziek van de periode 1950–75 gesteund op een analyse van werk van de Belgische componisten Karel Goeyvaerts, Henri Pousseur en Lucien Gothals" (Gent, Rijksuniversiteit, 1977), p. 21.

also a good teacher and supportive of Goeyvaerts. In addition to composition, he registered for Messiaen's class in musical analysis and aesthetics, which took place for the first time in the academic year 1947–48. Although Messiaen did not discuss student works in these lessons, in some respects these classes functioned as composition courses. Officially, however, they were not composition classes and, we recall, this class had been created specifically to find a place for Messiaen's idiosyncratic teaching within the more rigorous framework of the Conservatory. Boulez's student petition of 1946–47, to give Messiaen the position as composition teacher, had been denied explicitly—due to heavy political interference from high quarters—and Conservatory director Delvincourt came up with an idea to circumvent the political opposition. He invented a new type of class, never taught before, that combined 'analysis' and 'aesthetics' and which was given side by side with regular composition classes. Yvonne Loriod, Messiaen's student in the early 1940s, joined this class, but most incoming students were new, and took Messiaen's class as a complement to their official composition classes. Goeyvaerts attended Messiaen's class until the spring semester of 1950, for the full duration of his three-year studies in Paris.

The works composed during this three-year period have been studied in detail, but the results of this research remain unpublished, and we thus have little data to tell whether Goeyvaerts was leaning more towards Milhaud, Rivier, or Messiaen in his

student compositions.[496] Goeyvaerts provided some information on his stylistic evolution in his autobiography and, for the moment, this will serve our needs. By the end of his first year of study, Goeyvaerts had written a Violin Concerto (1948), dedicated to violinist Marcel Debot. He submitted it for his first exam in June 1948. Milhaud liked the work and suggested Goeyvaerts should see Paul Collaer to find out if he would be willing to arrange a professional performance at the Belgian Radio. At that time Collaer, a musicologist and the biographer of Milhaud, directed the Flemish music service of Belgian Radio.[497] Soon Goeyvaerts First Violin Concerto was broadcast in Belgium. The music, Goeyvaerts remembered in 1983, "floated ethereally and soothingly on the air waves, yet tonally one could not pin it down. Nor was it aggressive. It swayed."[498]

After this impressionistic debut, Goeyvaerts, in his second year studying with Jean Rivier, developed a "rather loose polyphonic style, in which every voice was equally important." The resulting work—*Music* (1948) for violin, contralto, and piano—won the Lili Boulanger Prize of January 1949 and some time later, once more sponsored by Collaer, received its broadcast premieres in Belgium and France. Goeyvaerts had set this chamber music to sonnets of William Shakespeare, and wondered how Nadia Boulanger could have liked his work since it 'went against all her ideas of sobriety'. Again his description suggests a tonal work, since he only comments on the polyphonic and

[496] In a 1990s research project entitled 'The Music of K. Goeyvaerts', organized at the Catholic University of Leuven (Belgium), M. Delaere, D. Verstraete, J. D'hoe, P. Berge, and J. Lysens analyzed all of Goeyvaerts's compositions. See Mark Delaere, "Auf der Suche nach serieller Stimmigkeit : Goeyvaerts' Weg zur Komposition Nr. 2 ," in *Die Anfänge der seriellen Musi*k, ed. Orm Finnendahl (Hofheim: Wolke, 1999), p. 20, fn. 4. This research led to a number of articles, but none focused on the works of the early student period in Paris. Delaere, email to author, 6 August 2003. Sabbe speaks of Goeyvaerts's neo-classical orientation until 1950, but also gives no examples to corroborate his assertion. Sabbe, "Het Muzikale Serialisme als Techniek en als Denkmethode", p. 21.

[497] Paul Collaer, *Darius Milhau*d (Antwerpen: Nederlandsche Boekhandel, 1947).

[498] GOEYVAERTS 1994, p. 36. "[muziek] die ijl en rustig in de ruimte zweefde, zonder ooit enig tonaal houvast te geven. Ze was ook niet agressief. Ze zweefde." GOEYVAERTS 1983, p. 34.

contrapuntal texture of the music, and Nadia Boulanger would not likely have selected any composition that—even remotely—betrayed dodecaphonist aspirations.

In the second half of the academic year, Goeyvaerts attained a "highly complex" musical language with his next work, the *Tre Lieder per sonare a venti-sei*:

> Dat werk in drie delen voor zesentwintig spelers, die ook weer een min of meer autonome partij te spelen hadden, benaderde de klankwereld van sommige post-seriële werken: een uitgebreid slagwerk (één speler) met vibrafoon en allerlei metalen en houten instrumenten, solostrijkers, solo-houten en -kopers, martenot-golfen... Kortom een nooit gehoord instrumentarium, dat later in een kritiek zou beoordeeld worden als '*…al het denkbare dat uit de instrumenten te halen is…*'[499]

The *Tre Lieder* were premiered in July 1949 by the Paris Conservatory orchestra under the direction of Roger Désormière. Pierre Henry took care of the virtuoso percussion part and Pierre Boulez played the Ondes Martenot.

Goeyvaerts recalled later that the Ondes Martenot were at the height of their fashion in 1947 and that Boulez and Grimaud were "were completely sold out on waves." He shared their enthusiasm—and Milhaud's, Honegger's, Messiaen's or Jolivet's—and took weekly lessons with Maurice Martenot. Within its given and intended monophonic limits, the Ondes Martenot combined flexibility with user friendliness. The clue was a volume key, operated with the left hand, which allowed shaping the intensity envelope within a wide dynamic range for each note. A keyboard, equipped with a ring and a sliding mechanism, allowed both discontinuous pitches and accurate glissando pitch controls and, last but not least, the *ondist* could chose between several different timbres.

[499] GOEYVAERTS 1983, p. 37. ("It was a three-part work for twenty six musicians, each of whom had to play a more or less autonomous part. In terms of sound it was very [much] like certain post-serial works: extensive percussion (one player) with vibraphone and a whole range of metal and wooden instruments, solo strings, solo woodwind and brass, Ondes Martenot... In short an ensemble of instruments which was later described in the words of one critic as '*...every imaginable sound an ensemble of instruments can produce...*'") GOEYVAERTS 1994, p. 38.

These options varied with different instrument versions, but timbres included sine waves, white noise, inharmonic timbres, resonance timbres, and their combinations.[500] Martenot constantly sought improvements to his instrument, both to its timbre and user interface.[501] Boulez and Grimaud wrote several works for Ondes Martenot prior to 1948 and leading composers of the day, such as Jolivet, Milhaud, Honegger, and Messiaen, kept building its repertory throughout the 1930s and 1940s. Goeyvaerts and Boulez initially followed in the footsteps of their teachers but, by 1950, the fashion had cooled down. In 1948 Boulez revised his *Quartet for Ondes Martenot* into a Sonata for two pianos. Messiaen did not compose for Ondes Martenot after his *Turangalîla* Symphony, with the exception of the opera *Saint François of Assise* (1983). Aesthetics were changing around 1948.

It is quite difficult to make more detailed assessments about Goeyvaert's *Tre Lieder* without having access to a recording, score, or more extensive verbal descriptions. The instrumentation recalls elements of Messiaen's scoring in *Trois Tâlas*, premiered in Paris during Goeyvaerts's first academic year in early 1948. Likewise, it may show stylistic influences from Jean Rivier. Two remarks may be made on the basis of the scant information given. In the *Tre Lieder*, with twenty-six musicians playing 'more or less autonomously' and producing 'every imaginable sound an ensemble of instruments can produce', Goeyvaerts approached an extreme of disorganization. Secondly, he did not

[500] It is noteworthy that Goeyvaerts, Stockhausen, and Boulez remained unaware that the most primitive version of the Ondes Martenot was based on the beat-frequency oscillator principle. Maurice Martenot would have been able to answer all their questions in that regard, although he may have treated this type of information as a trade secret.

[501] For a history of the different versions of the Ondes Martenot, see Jeanne Loriod, *Technique de l'onde électronique type Martenot*, Vols. 1–3 (Paris: Leduc, 1987, 1993, 1999), pp. vi-x. Maurice Martenot also produced custom-built versions of the instrument. In 1931 the Hindu poet Rabindranath Tagore commissioned Martenot to built an instrument which enabled Hindu musical modes requiring 66 sounds per octave instead of 12 to be reproduced. This complex instrument required a year-and-a-half of work and was shipped to India.

describe any serial construction principle in the *Tre Lieder*. The verbal description makes one wonder how this music sounded. The *Tre Lieder* won a Second Prize in the end-of-year composition competition of July 1949. Nevertheless, it appears that, about one year prior to composing a work of extended serialism, Goeyvaerts had not composed a single dodecaphonic work. The heterogeneous scoring of the *Tre Lieder* suggests, in addition, a closer connection with Messiaen's orgiastic aesthetics of the *Turangalîla* Symphony. In the first half of 1949—before hearing Cage's music in Messiaen's class—Goeyvaerts was exploring the opposite extreme of his later obsession with purity and strict organization.

The first works explicitly described as 'atonal' or 'dodecaphonic'—*Elegiac music* for contralto, piano, and orchestra as well as *La Flûte de Jade*, a song cycle for soprano and piano—date both from his third and last academic year in Paris.[502] The *Flûte de Jade* was written during the fall of 1949 and contains one song, which Goeyvaerts described as "virtually the only dodecaphonic piece I *ever* composed."[503] In other words, he only became interested in serialism after finishing his *Tre Lieder* of July 1949, quite close to the end of his study period in Paris. If Goeyvaerts had felt the need for the dodecaphonic language—Boulez's experience at salon Halphen in February 1945 comes to mind—he would have had ample opportunity to learn about dodecaphony among the many Parisian dodecaphonist activities during the previous two years of his studies. What, then, brought about this change of heart after the summer of 1949?

[502] With a single exception: Goeyvaerts describes the Fugue he player for his entrance exam at Paris Conservatory as having an 'atonal polyphonic' structure, although it ends with a triad. GOEYVAERTS 1994, p. 36.

[503] GOEYVAERTS 1994, p. 42. My emphasis. ("Dat onderdeel was zowat het enige dodekafonische stuk dat ik ooit geschreven heb.") GOEYVAERTS 1983, p. 40.

In 1951, when he was asked about the origins of his new technique of extended serialism, Goeyvaerts pointed out three sources: his apprenticeship with Messiaen, his Paris circles and, above all, his analyses of Webern:

> In Darmstadt stond ik weldra bekend als iemand die veel over Webern wist. Men wilde mijn analyses kennen, maar die had ik nooit duidelijk geformuleerd, zoals een duits komponist dat wel zou gedaan hebben. Ik zat vroeger gewoonlijk met een Webern-partituur op mijn knieën ergens in een hoek of in het gras van de Cité Universitaire en ik schreef mijn aanmerkingen met kleine lettertjes en met allerlei tekens die ik zelf alleen begreep in de partituren. Niemand kon daar wijs uit geraken.[504]

We should first note that, given Goeyvaerts's neo-classical style prior to his *only* dodecaphonic work from late 1949, this interest in Webern is unlikely to have sprung up during the first two years of his study. Moreover, if Goeyvaerts indeed had been unable to articulate his insights about Webern in a methodical way, how can we explain that "everyone wanted to know about [his] analyses"? One explanation might clear up the background for the development of this reputation. A year before the Darmstadt Summer School of 1951, Goeyvaerts had attended the world premiere of Webern's Second Cantata op. 31 (1941–44) at the Brussels ISCM festival. Webern's last composition was still unpublished in 1950 and yet... Goeyvaerts already had a score in hand.[505] This fact

[504]GOEYVAERTS 1983, p. 55. ("In Darmstadt I had the reputation of someone who knew a lot about Webern. Everyone wanted to learn about my analyses, but the problem was I had never clearly formulated them in the methodical way a German composer would have done. In days gone by I just sat tucked away in a corner or on the lawn of the *Cité Universitaire* with a Webern score on my knees and I just jotted down my remarks in glosses and little signs which I alone understood in the score. Nobody else could make sense of it.") GOEYVAERTS 1994, p. 45.

[505] Jean-Louis Martinet told Jean Boivin that 'not long' after the liberation of France, he traveled to Vienna and consulted the manuscripts in the archives of Universal Edition. This 'not long' after the liberation of France was five years later, in 1949; see Jean-Louis Martinet, "Notes autobiographiques," (<http://musicaetmemoria.ovh.org/martinet-autobio.htm> accessed on 20 June 2003), original document from 1982. He remembers that he corrected the proofs for the Second Cantata, op. 31, and copied a number of Webern scores by hand. BOIVIN 1995, p. 57 fn. 25. Goeyvaerts probably obtained his copy directly from Martinet; in his autobiography he reported that Jean-Louis Martenot [recte: Martinet] helped him with the shipping of the Ondes Martenot instrument to the Belgium ISCM festival of 1950. GOEYVAERTS 1994, p. 39.

must have qualified him as a Webern specialist in the eyes of Herbert Eimert, who sat next to Goeyvaerts during that world premiere and who, himself, was not a Webern specialist. Eimert may have shared the anecdote with others and, thus, some Darmstadt participants may have approached Goeyvaerts to learn more about that famous last work of Webern, his Second Cantata. But this alone can hardly qualify Goeyvaerts as Webern specialist; neither can his inability to express his analytic thoughts 'in the methodical way a German composer would have done.' This remark appears to be aimed at Stockhausen's characteristic lucidity and clarity of expression and is overlooking a number of non-German composers—such as Boulez, Cage, Pousseur, Nono, and many more—who also wrote perceptive articles on Webern. At heart, Goeyvaerts's two extant statements on Webern, both dating from 1953,[506] are not at variance with Leibowitz's insights in the Webern chapters of *Schoenberg and his School*; the only minor difference, perhaps, is that Goeyvaerts—in a philosophical sense—placed a stronger emphasis on the need for objectivity and purity of musical 'structure'. While it is unmistakable and plain that Webern provided the decisive aesthetic model for Goeyvaerts's Sonata for Two Pianos, op. 1, this does not tell us how or when Goeyvaerts found his way to Webern in the first place. Unfortunately Goeyvaerts did not provide this information in his autobiography, at least not in direct terms. It is clear that neither Messiaen nor his composition teacher Milhaud, who taught Goeyvaerts in his last academic year, were the source of this infatuation with Webern. Rather, the answer must lie with his Paris circles of friends. So we must return to the summer of 1949.

[506] Cf. Gianmario Borio and Herman Danuser, eds., *Im Zenit der Moderne* (Freiburg: Rombach, 1997), Vol. 3, pp. 61–63.

Cage and Goeyvaerts's Turn to Webern

Cage's genuine call for a spiritual function of music must have been as patently obvious to Goeyvaerts as it had been to Messiaen. At this point Cage listened *into* the timbre and lacked any notion of aggressiveness. He had cultivated his mental approach to music for some time: acting as master of ceremonies, his performance of the *Sonatas and Interludes* in Messiaen's class had left a deep impression on Goeyvaerts:

> The well-determined sounds of his gamelan piano and the precise rhythm of the sonatas kept us spellbound. [507]

Goeyvaerts's use of the adjective 'well-determined' in this context shows his awareness that Cage's preparation of the piano timbres in fact constituted artisanal work with inner acoustic dimensions of timbre. This prepared piano performance was the only 1949 event that Goeyvaerts singled out as a positive influence on his compositional development during the late stages of his Parisian studies.

In this respect one should keep in mind that Cage's image was subject to numerous shifts in his public appraisal. For many onlookers, Cage's history in Europe began only in the 1950s—either with his participation in Donaueschingen 1954 or his participation in Darmstadt 1958—and, in the later 1950s, in the eyes of more than a few music critics, he even often lost his status as a musician. He was described polemically as a clown or, occasionally, as a music philosopher, and conservative observers of modern music, such as Antoine Goléa, denied him the title 'composer' altogether. The latter included, in one

[507] "De welbepaalde klanken van zijn gamelan-piano en de precieze ritmiek van de Sonatas hielden ons in de ban." GOEYVAERTS 1983, p. 42. GOEYVAERTS 1994, p. 40 gives the following translation: "The crisp sounds of his gamelan piano and the precise rhythm of the sonatas kept us spellbound." The word 'welbepaalde' was translated as 'crisp', but it literally means 'well-determined'. This takes timbre composition it takes on importance, because it reveals that Goeyvaerts understood that Cage was composing the inner acoustic sound dimensions. The English translation sounds more poetic, but completely looses this distinction. This example shows once more the importance of independent access to original and primary sources.

of his modern music surveys, an appendix with biographical notes on the main composers discussed in the body of the text. All are introduced as "compositeur"—except for Cage, who was characterized as: "John Cage. *Personne* de nationalité americaine, née à Los Angeles en 1912."[508] Goléa wrote after Cage and Tudor had left deep marks on European audiences in 1954 and 1958. They had presented compositions that included ample use of 'sport field whistles' along with piano timbres and silence. Such an iconoclastic anti-art attitude went beyond Goléa's understanding of serious modern music and, one should add, of many of his contemporaries, even among the more open-minded listeners.

Goeyvaerts, on the other hand, experienced a very different Cage in 1949: devoid of any intentional aggression or iconoclasm, he appeared shy, yet imbued with the highest degree of concentration, during his prepared piano recital at the Paris Conservatory. The timbres and rhythms of Cage's *Sonatas and Interludes* offered Goeyvaerts an alternative and unsuspected approach to modern music. If this, then, constituted the artistic impulse that drove Goeyvaerts to consider a drastic style change, we still are at a loss to explain why Goeyvaerts turned to Webern.

One element of the answer is found in Cage's view of his own aesthetic forebears as of 1949—a view that kept changing during the 1950s and only crystallized in a somewhat more stable format with the publication of *Silence* in 1961. In 1949, as seen above, Cage took part in Italian Twelve-Tone Congress and viewed himself as Schoenberg's heir, who had been able to carry the revolution one step further than the German master. Cage had liberated sound from the suffocating grasp of structural harmony, an error introduced by

[508] Antoine Goléa, *Vingt ans de musique contemporaine: De Boulez à l'inconn*u (Paris: Slatkine, 1981), p. 201. ("John Cage. *Person* with American nationality, born in Los Angeles in 1912. [...]") My italics.

the hapless Beethoven. Only Webern and Satie, Cage emphasized in the Black Mountain College lecture we have discussed in detail above, had had a new idea—namely, the shift of structural musical functions from the domain of harmony to the domain of time—and 'every composer ought to agree upon it'. This force of Cage's reasoning and his Catholic belief in it around 1949 are quite easily lost from our remote point of view. Yet this was how Cage saw himself; he thereby profoundly expanded the notion of what dodecaphony could mean, although he never gave a name to his new music theory. The closest term was probably 'structural rhythm'. In later years, Cage's interpretations and theories kept shifting to a considerable degree, but I am only concerned with his position in 1949.

This is what Goeyvaerts saw in 1949: Cage referred to *Webern* as forerunner of modern music—just as Leibowitz and, to a lesser degree at that point, Boulez—but, rather than pitch structures, Cage stressed Webern's use of time structures as well as the measured relation between sound and silence as his major innovations. This important difference with the reigning conceptions of the Parisian dodecaphonists opened an alternative path to Webern for Goeyvaerts—a path inspired by Cage's theory and his *Sonata's and Interludes*. When Cage's universal theory of music was published in the last days of 1949 in the journal *Contrepoints*, Goeyvaerts, Boulez, Grimaud, Martinet, and others were able to cast the dice again: it was the combination of Cage's music and his theory that formed the original impetus behind Goeyvaerts's search for alternatives to traditional dodecaphony.

Goeyvaerts's view of Cage as a leading composer and theorist of modern music is further established when we take note of the reason that drove him to participate for the first time at the Darmstadt Summer School. In early 1951 Goeyvaerts worked on the new

system of composition, which would be demonstrated practically in his Sonata for Two Pianos op. 1:

> Bij het verder uitwerken van de sonate was het me wel duidelijk, dat hiermee een nieuw stadium was bereikt in de ontwikkeling van het serieel denken. Zulks leek me echter zo voor de hand liggend, zo onontkombaar, dat ik me niet kon voorstellen, alleen tot die conclusie te zijn gekomen. […] Het vluchtig contact met Cage liet me vermoeden dat de ontwikkeling van de toonspraak in de Verenigde Staten wel minstens even zo ver zou geraakt zijn.[509]

Goeyvaerts added that he participated in Darmstadt because someone in the United States —perhaps Cage or Schoenberg—might have developed a composition system close to his own synthetic-number serialism.[510] Quite accurately, he suspected Cage—or someone close to Cage—at the vanguard of innovation; conversely, this thought strongly suggests Goeyvaerts had studied Cage's universal theory of modern music in 1950.

Goeyvaerts needed further support, however, to begin his drastic move away from his idiosyncratic neo-classical style. Since no path to a new language appeared possible without taking into account the music of Webern, the most valuable help for Goeyvaerts would have come from a Webern specialist. In his Parisian coterie of friends there was one person predestined to fill that role: Barraqué. The friendship with Barraqué further helped Goeyvaerts consider dodecaphony from a new angle.

Jean Barraqué

In his late adolescence Jean Barraqué (1928–73) aspired to become a priest, but then turned to music instead. His philosophical interests and his abstract aesthetics drove him

[509] GOEYVAERTS 1983, pp 52–53. ("As my work on the sonata developed it began to dawn on me that a new stage in the evolution of serial thinking had been reached. It suddenly seemed so obvious, so unavoidable, that I could not imagine that I was the only one to have reached this conclusion. [...] My brief contact with Cage made me suspect that the development of musical language in the United States had gone at least as far.") GOEYVAERTS 1994, p. 44.

[510] The secret of the synthetic number will be revealed below.

to seek new levels of musical complexity and, for a while, brought him to challenge Boulez as the most radical exponent of the French avant-garde. In 1961 composer and writer André Hodeir heralded Barraqué as the most important French composer since Debussy.[511] Just as Leibowitz had placed Webern at the end of his monograph on the Schoenberg School, Hodeir placed Barraqué at the end of his monograph on contemporary music: first came Stravinsky, Schoenberg, Berg, Webern, and Bartók; then Messiaen, Boulez and, finally, Barraqué.

Goeyvaerts and Barraqué became friends in the fall of 1948, when Barraqué joined the class of Messiaen as auditor for the next three years. Initially they shared an interest in opera. In 1948 they attended a *Tristan and Isolde* performance with Kirsten Flagstad. Goeyvaerts also recalled that he saw his 'beloved' *Rosenkavalier* twice in the space of several days, perhaps accompanied by Barraqué on one of those occasions. Goeyvaerts initially seemed comfortable with this world of romantic and late-romantic operas, which aesthetically are opposites of the anti-expressive aesthetics sought by Cage, Stockhausen, and Goeyvaerts himself, but about two years later. When Goeyvaerts first met Barraqué there was no hint that he took a high interest in the music of the Viennese.

Barraqué, however, was strongly attracted to the dodecaphonic system from the outset. While he did not directly study with Leibowitz, he acknowledged the tremendous

[511] "Jean Barraqué" in André Hodeir, *Since Debussy: A View of Contemporary Musi*c (New York: Da Capo, 1975), pp. 163–209. Originally published in French as: *La musique depuis Debussy* (Paris: Presses universitaires de France, 1961). Composer and writer Hodeir (1921–) studied with Plé-Caussade, Dufourcq, and Messiaen at the Paris Conservatory (1942–48), where he won many premiers prix. His writings about jazz take a particular interest in the relationship between improvisation and composition, and his bold ideas on contemporary art music—such as those expressed in *Since Debussy*—have aroused controversy. He was visiting professor at Harvard University in the 1970s. Hodeir composed numerous film scores, works for Jazz groups, and experimental works in which he combined jazz features with elements of avant-garde music. For more on Hodeir, see Alan Howard Levy, "Cultural Resuscitation: The Political Left and Modern Jazz," in *Radical Aesthetics and Music Criticism in America, 1930-195*0 (Lewiston: Edwin Mellen Press, 1991), pp. 45–59.

impact of Leibowitz's first book when it was published in early 1947—prior to Goeyvaerts's arrival in Paris:

> *Schoenberg et son école* parût en 1947—je l'ai, comme l'on dit d'un roman, 'dévoré.'[512]

Born in 1928, and thus five years younger than Goeyvaerts, Barraqué was 18 years old when the first wave of dodecaphony took the young Parisians by storm in 1946–47. He quickly absorbed Leibowitz's teachings and kept studying the music of the Viennese through the many score excerpts of *Schoenberg and his School*, as well as through the manually produced score copies of certain key works in circulation among Parisian dodecaphonists. He also read related articles such as Boulez's "Propositions" of 1948 and developed his compositional language along those lines. When Barraqué entered Messiaen's class in the fall of 1948 he was already a Webern specialist, and soon earned the nickname 'le petit sériel' for himself.[513] He, too, was present when Cage performed his *Sonatas and Interludes* in late spring of 1949 and, later that year, studied Cage's theory side by side with Boulez's 'Trajectoires'.[514] But Barraqué was not only open to the dialectical thinking of Cage and Boulez; he wanted to outdo them by one step.

Technically, Barraqué's music soon enough competed with Boulez's or Cage's in terms of complexity and vitality of musical ideas, as one can judge from his Piano Sonata or his *Séquence*. Barraqué's *Séquence*, composed mostly in 1950, conveys an impression of his technical and musical level. The work is scored for soprano, piano, harp, violin,

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[512] "*Schoenberg and His School* appeared in 1947 and—as one says of a novel—I devoured it." Jean Barraqué, "Hommage à René Leibowitz," , Unpublished (1972), pp. 185–86, quoted from *Écrit*s (2001), p. 185.

[513] BOIVIN 1995, p. 97 fn. 7. ("the little dodecaphonist")

[514] Cage, "Raison d'être" and Pierre Boulez, "Trajectoires: Ravel, Stravinsky, Schönberg," *Contrepoint*s, no. 6 (December 1949), 122–42, quoted from *Points de repère* 1 (1995). The journal imprints state "last days of December 1949."

violoncello, celesta, glockenspiel, vibraphone, xylophone, and percussion. The poetic text—first by Eluard and Rimbaud, later replaced by Nietzsche—is atomized to phonetic raw materials and assembled with constant changes in register and intensity, resulting in the impression of musical delirium dear to Artaud and Boulez. Its vocal style is disjunct: extremely hard to perform, yet always mindful of the limits of the performer. The instrumental group acts either as a single new synthetic instrument or as a group of soloists. Barraqué's handling of the 'orchestra-as-instrument' evokes the impression of 'perpetual bursting apart within the framework of an absolute unity', and this is combined with his writing for a group of soloists, emerging from or disappearing into the orchestral timbre symphony. Hodeir stated that

> "[n]o other piece of music, I believe, has yet demonstrated better than *Séquence* the extraordinary effective role which the tone-color phenomenon plays in authentic serial music; not only does it establish the work's definitive coloration, as in the classical conception, but is seems to reveal the work's every contour and even its most secret, inner flux."[515]

Furthermore, the work itself is related to a network of other works, which derive from a single 'pre-orchestral' score for piano, thus illustrating Mallarmé's conception of *Le Livre*. It is impossible in this context to discuss how far Barraqué and Boulez developed such ideas independently. In a way, Barraqué was also more conservative than Boulez in his aesthetics, and that is probably also one reason he and Goeyvaerts could get along quite well. Barraqué's thinking may have played a significant role in the development of the synthetic number.

It is clear that, beyond his official teachers, Goeyvaerts exchanged ideas with his circle of friends, which—by the end of his studies in 1950—included Grimaud, Loriod,

[515] Hodeir, *Since Debussy*, p. 180.

Martinet, Barraqué, pianist Helffer, and violinist Marcel Debot among others. All of his friends at one point studied with Leibowitz or, at the very least, had become familiar with his teachings. Grimaud not only premiered works by Boulez; she also composed and studied ethnomusicology with Schaeffner at the Musée de l'Homme. Goeyvaerts was virtually surrounded by people familiar with the music of the Viennese. However, they could not have accepted him as one of their own during the first two years of his study period, when Milhaud and Nadia Boulanger appreciated his compositions. His Lili Boulanger composition prize turned him into something of a maverick within the circles of Parisian dodecaphonists by early 1950.

Barraqué, on the other hand, was a newcomer to the scene and not protective of any previous avant-garde achievements. In his company Goeyvaerts had an opportunity to approach serialism without facing the immediate loss of his neo-classical works which, after all, had brought him considerable success. Goeyvaerts took this radical step only a year later, after composing his Sonata for two pianos and having met Stockhausen at the Darmstadt Summer School of 1951.[516]

In addition, Barraqué was specialized not only in Webern's but also in Boulez's music. In the spring of 1950, during Goeyvaerts's last months in Paris, Barraqué would have discussed Boulez's approaches to new music alongside with his own. Goeyvaerts later recalled that Boulez's Second Piano Sonata "was discussed a lot in our little group ... although nobody had seen the score." Certainly this did not include Grimaud,

[516] Ultimately he did choose to disregard all of his student compositions. This must have occurred not long after he finished his Second Violin Concerto of 1951. He started a new opus numbering with the Sonata for two pianos by the the fall of 1951, as evidenced by a reference in Stockhausen's letter to Goeyvaerts from 10 August 1951. "...was aus Deinem Op. 2 wird, erwarte ich mit Ungeduld." Herman Sabbe, *Die Einheit der Stockhausen-Zei*t (München: Text + Kritik, 1981), p. 80. ("...I await with impatience, how your Op. 2 will turn out.")

who would have been practicing the Sonata tirelessly before its premiere in March 1950 at the Ecole Normale. Prior to this premiere the 'fame' of the Second Piano Sonata rested squarely on Boulez's articles, published as early as 1948, which did contain excerpts of particularly high interest and, considering his close friendship with Barraqué, Goeyvaerts would have needed blinders in order not to take note of Boulez's strategies. This is corroborated, to some extent, in Sabbe's early scholarly work:

> Tenslotte vond hij in zijn jaren van heroriëntiering (1949–51) steun in de gedachtenwisseling met een paar collega's die in die nieuwe richting zoekende waren. Onder hen vallen in de eerste plaats Jean Barraqué en Pierre Boulez te vermelden.[517]

The importance of Boulez's rhythmic theories—"Propositions" of 1948 represented an improvement on Messiaen's rhythmic theories—has not been widely noted thus far in assessing the influences relevant to the development of synthetic-number serialism. Although Goeyvaerts acknowledged the importance of Boulez's Sonata, he never acknowledged a *direct* influence from Boulez's articles or, for that matter, a learning process involving Cage, Leibowitz, or Barraqué. He simply did not elaborate on either of those influences, but he emphatically pointed out that he had *no knowledge* of Messiaen's *Mode de valeurs* and did not even learn about its pre-compositional ordering during the

[517] ("Finally, during his years of re-orientation, he found support in thought exchanges with a few colleagues who were searching in new directions. Among them we would have to mention first Jean Barraqué and Pierre Boulez.") Sabbe, "Het Muzikale Serialisme als Techniek en als Denkmethode", p.21. Sabbe does not give his sources and on the same page he makes other unsubstantiated claims, such as 'Messiaen's *Mode* was a catalyst for Goeyvaerts', which show that he did not base his information on Goeyvaerts. He appears to have speculated and, in the case of Messiaen, he erred. Boulez cannot have been a supporting influence, since Goeyvaerts stated in his autobiography that he only saw Boulez once in his apartment and had always remained quite distant from Boulez—no small wonder, since he composed in a neo-classical style well into 1950, and Boulez had been working on extended serialism since 1945. Boulez was a veteran serialist but in early 1950 he had no teaching ambitions; he was interested in promoting the music of Cage and developing a vastly complex new composition system, far removed from the tender first contacts with dodecaphony of Goeyvaerts and, in that regard, a supportive thought exchange between Boulez and Goeyvaerts seems highly unlikely. The only true support, I would agree with Sabbe, is likely to have come from Barraqué.

Darmstadt Summer School of 1951, when he first was confronted with a recording of *Mode*. The evidence for the situation in Darmstadt will be disclosed below. In this light, then, it appears that Mark Delaere oversimplified the situation when he characterized the influences that led Goeyvaerts to extended serialism as 'general knowledge', and therefore unworthy of closer inspection:

> Daß der Serialismus aus einer Synthese von Webernschen Reihentechniken und von Messiaens parametrischem musikalischem Denken hervorging, braucht, da allgemein bekannt, nicht ausführlich erörtert zu werden. Auch Goeyvaerts' Weg führte über diese zwei Komponisten. [518]

If this notion is indeed entrenched in countless scholarly publications, it remains no less oblivious of the facts: Messiaen's 'parametrical thinking' was *not* involved in the design of Goeyvaerts's new composition system. *Mode* was a dramatic shift within Messiaen's own composition technique, but this shift remained unknown to composers of extended serialism until 1951 and, in many cases, even 1952. The characterization of Messiaen's thinking as 'parametrical' is widespread but, as shown above, 'complex-mode-thinking' or 'gamut-thinking' appears more closely to describe Messiaen's musical thought at the time. Perhaps the early composition date of *Mode* explains the illusion; furthermore, it is mainly the anecdotal evidence of Boulez, whose use of certain elements of *Mode* shaped the debate.

Given the scarcity of scores of the Viennese, it is fair to assume that Goeyvaerts obtained Leibowitz's *Schoenberg and his School* when he began to acquire a serious

[518] ("That serialism sprang forth from the synthesis of Webernian row techniques and the parametrical thinking of Messiaen does not need further elaboration, since it is generally known. Goeyvaerts's path led past those two composers too.") Delaere, "Auf der Suche nach serieller Stimmigkeit", p. 14. Herman Sabbe 'discovered' Goeyvaerts in the early 1970s and Delaere apparently subscribes to Sabbe's conclusions. See, for example, Herman Sabbe, "Das Musikdenken von Karel Goeyvaerts in Bezug auf das Schaffen von Karlheinz Stockhausen. Ein Beitrag zur Geschichte der frühseriellen und elektronischen Musik," *Interface* 2 (1973), p. 107.

interest in dodecaphony. Before returning to Belgium in the summer of 1950, he must also have copied manually the scores of Webern's Piano Variations as well as the second movement of Webern's Symphony.[519] Goeyvaerts's shift from neo-classicism to a new way of composing—along the lines proposed in the models of Cage, Boulez (as a pioneering student of Messiaen) and, finally, Barraqué—may have begun in 1949, but Goeyvaerts continued to compose in his previous idiom well into 1950, gradually adding more dodecaphonic elements. In *Elegische Muziek* (1950) for alto voice and orchestra on texts by Rilke, for example, Goeyvaerts introduced 'atonal violence'. He finished his Second Violin Concerto (1950–51) on 12 January 1951 and, betraying his infatuation with Webern, in a section of the work used a tone row, fragmented into four 3-pitch cells, each of them built around a third and a half-tone interval. The second movement was the 'irrational' variation of the first 'rational' movement and, for the orchestral portion, he employed twelve-tone chords as well as six-tone chords. The Concerto also included a rudimentary form of octave rotation, a principle to be discussed in more detail below, and a very rudimentary use of rhythmic and dynamic 'series'. In short, the Concerto of late 1950 prefigured in multiple ways the path-breaking Sonata for Two Pianos, op. 1.[520]

Boulez's Seminar on Timbre Serialism

Boulez, for his part, had been hard at work for several months to prepare his Second Piano Sonata for publication in late 1949 and early 1950. Judging by remarks made in

[519] "Die annotierten Partitur-Exemplare [von Weberns Klavier-Variationen opus 27 und des Variationenteils seiner Symphonie opus 21] sind in seinem Besitz." Sabbe, "Das Musikdenken von Karel Goeyvaerts", p. 112, fn. 16. ("The annotated scores [of Webern's Piano Variations, op. 27, and the Variations movement from his Symphony, op. 21] are in his possession.")

[520] Delaere, "Auf der Suche nach serieller Stimmigkeit", pp. 20–24.

the Boulez-Cage correspondence, the Sonata was published in late March 1950.[521] Grimaud premiered the work on 29 April 1950, a day after Boulez had embarked for his South American tour with the Barrault Theatre. The circle of friends witnessed the first Boulez premiere in years. The critics' reactions were negative, and some friends reported that Grimaud had been too timid in her interpretation, unable to 'pulverize the sound'. Shortly afterwards, in July 1950, Roger Désormière conducted the premiere of Boulez's revised cantata *Le Soleil des eaux*. At the premiere, Messiaen showed himself enthusiastic about the work of his most talented former student.[522] Boulez was still in South America and again unable to attend. Some time during the academic year 1950–51, Messiaen invited Boulez to analyze his Second Piano Sonata for his Conservatory students:

> Un jour, Olivier Messiaen nous dit: 'pour la prochaine fois, je vous ai ménagé une surprise'! Le cours suivant, tout le monde était bien à l'heure et nous avons vu arriver Pierre Boulez, la partition de la Deuxième Sonate sous le bras. Ce fut un très grand choc, à cause d'abord de la personnalité de Pierre Boulez, puis à cause de l'oeuvre elle-même, qu'il expliquait avec un débit extrêmement rapide. Il exprimait des choses extraordinairement compliquées, des concepts structurels qui nous étaient totalement étrangers et en plus, il jouait à toute vitesse! Il est venu trois ou quatre fois, et nous étions tous là à couvrir nos partitions de griffonages pour conserver le maximum d'informations...[523]

This class represents Boulez's first appearance as teacher of his own music, and it can be dated after the Sonata's publication and its premiere in the spring of 1950. Goeyvaerts

[521] NATTIEZ 1990, p. 93. I believe this letter should be dated March 1950 or, at the very latest, mid-April.

[522] This according to Michel Fano, who was present at the premiere. BOIVIN 1995, p. 95.

[523] Michel Fano, "Les années Messiaen," in *20ème siècle -- Images de la musique français*e, Edited by Jean-Pierre Derrien (Paris: Sacem et Papiers, 1986), p. 138. ("One day Messiaen told us: 'for next time, I arranged a surprise for you'! In the next class everybody was well on time and we watched how Pierre Boulez arrived, carrying the score of the Second Piano Sonata under his arms. That was a huge shock, first because of Pierre Boulez's personality and then because of the work itself, which he explained in extremely rapid fashion. He expressed extraordinarily complicated things, structural concepts that were completely unfamiliar to us and, in addition, he played it at breakneck speed! He came three or four times and we all covered our scores with scribbles to conserve the maximum of information...")

talked at length about the Sonata in his autobiography, but made no mention of this impressive appearance of Boulez in Messiaen's analysis class. Unless Goeyvaerts was guilty of a severe memory lapse, we can establish a *terminus post quem* for this historic event in October 1950, at the beginning of the academic year 1950-51. On the other hand, Barraqué's presence suggests that the classes took place no later than May 1951.[524] On the occasion Barraqué and Michel Fano became friends.[525] They followed Boulez's breakneck analysis as best as possible, and Boulez noted their interest. Soon these second-generation students of Messiaen became friendlier with Boulez, and they would form the initial kernel of a group of neo-serialists centered around Boulez. In October 1951, Boulez, Barraqué, Fano, and others joined the technology training courses hosted by the Schaeffer studios and, in 1952, Barraqué and Boulez worked together on an article called "Rythme et développement", later published by Barraqué.[526] Thus the Boulez analysis classes inaugurated a new era in the history of post-war serialism as, for the first time in his life, Boulez broke out of his isolation and bonded with other young composers in Paris. We have seen already the immense impact of the Second Piano Sonata on Cage and his American composer friends. Without a doubt the same can be said for the impact of this sonata in Paris and, later, in Germany. Barraqué appears to have been more advanced than Fano at the time, to judge by Fano's above-mentioned comments on the

[524] According to *Écrits* editor Laurent Feneyrou, Barraqué joined the class in October 1948 and stayed about three years. Jean Barraqué, *Écrit*s (Paris: Publications de la Sorbonne, 2001), p. 24. Due to missing records at the Conservatory, Boivin lists Barraqué for five years as auditor beginning in 1947. BOIVIN 1995, pp. 409–10 and 412–16.

[525] Boivin quotes Fano as saying: "Personne d'entre nous ne le connaissait." ("Nobody among us knew him [Boulez]") BOIVIN 1995, p. 97. This suggests that Barraqué had not been a friend of Boulez prior to this class.

[526] Jean Barraqué, "Rythme et développement," *Polyphoni*e, 9/10 (1954), 47–73, quoted from *Écrit*s (2001), pp. 87–114. Their collaboration borne out by the use of sketch materials from the fourth movement of Boulez's unpublished string quartet as well as from *Polyphonie X*; in fact, the music examples were written by Boulez. See Thomas Bösche, "A propos du Livre du quatuor," In *Pierre Boulez* (München: Text + Kritik, 1995), p. 95.

technical explanations given by Boulez. Fano's Sonata for Piano was therefore certainly composed in the wake of these Boulez classes.[527]

There are two options to pin down the dates of these classes more closely. Messiaen probably was present at the Grimaud premiere and Boulez, not present at the premiere, may have offered Messiaen a score after it had been published in March. Messiaen's enthusiastic reaction to the *Soleil des eaux* premiere suggests that he was not angry at Boulez and thus, after the latter's return from South America in the summer of 1950, may have asked him to make a presentation in the fall.

We can argue against this assumption if we recall Boulez's deeply critical attitude of Messiaen's thickening-out of the musical structure with unnecessary harmonic chords. Until early 1951, Boulez remained unaware of Messiaen's radical style change in *Mode* and, therefore, must still have been as critical of Messiaen's alleged hedonism as he had been at the time of the *Trois Tâlas* in early 1948. Knowing Boulez's character, Messiaen would have to take quite a risky step. Boulez might well have declined the offer to teach a class on his Sonata, reviving the vexing argument of 1948. This suggests an alternative course of events. Around February 1951 Boulez learned about Messiaen's *Mode*.[528] He was overjoyed and stunned, composed *Structures Ia* over the course of a single night, and presented Messiaen with *Structures Ia* as a token of his renewed trust. In the wake of the reconciliation, Messiaen asked Boulez to present his first published score, the Second Piano Sonata for his analysis class at the Conservatory, and the Boulez class would have taken place around March 1951.

[527] Richard Toop suggests otherwise in TOOP 1974. He dated Fano's Sonata for two pianos to 1950. If true, Fano would have predated Boulez's *Structures Ia*. Fano's comments above make plain that, at least to his own recollection, he was technical not ready to compose a work in extended serialism..

[528] See page 212 for details.

While Goeyvaerts worked on his new system of composition in isolation during this time period, Boulez, for the first time, broke out of his erstwhile isolation after Cage's visit. The process began with the publication of his Second Piano Sonata and the April premiere of the work by Grimaud. Yet, Boulez did not really break out of his isolation in Paris until after the reconciliation with Messiaen. Once this had occurred, as a direct consequence of Boulez's discovery of *Mode*, the dynamics shifted. Messiaen had now come under the influence of Boulez and Cage; he joined the experimental aesthetics and spirit of exploration that characterized the transatlantic school. To the outside world, it appeared as if Messiaen was the leader but, in fact, Boulez and Cage set the tone of this new musical movement. Meanwhile Goeyvaerts felt increasingly isolated in Belgium and, hoping to meet Cage, registered for the Darmstadt Summer School 1951 to present his new system of composition to other composers. Instead of Cage, he would encounter the 22-year old Stockhausen. Before turning to this decisive historic encounter, we will briefly discuss the origins of the Darmstadt Summer School as well as Stockhausen's background and his path to dodecaphony.

CHAPTER 6: TOWARDS POINTILLISM 1951–52

This chapter describes the origins of the Darmstadt Summer School in a bombed-out city, literally among the ruins. Reminiscences portray the musical life under Fascism at a German music school. The rationale of Darmstadt originally was to bring the German musical youth back in contact with international developments.

Stockhausen's youth on the countryside, his religious devotion, his education, and his horrible war experiences are recounted. In Cologne he enrolled in a four-year formation to become a music teacher. In the last student year he attended a Schoenberg piano music recital by famous pianist Else C. Kraus. Stockhausen, impressed, began to write dodecaphonic music. In the spring of 1950 he met Eimert, who encouraged Stockhausen's participation at Darmstadt. There he met Goeyvaerts; we will follow in detail how Stockhausen learned the new serial composition system from the Belgian and trace the path that led, within one year, to the formation of a new style called pointillism.

Origins of Darmstadt

Harvard's musicologist Hugo Leichtentritt summarized the disastrous impact of Fascism and the Second World War on European music in 1947:

> The Hitler regime in Germany and the Second World War have caused not only a catastrophic decline of Germany's musical supremacy, but also more or less a collapse in almost all other European countries.[529]

[529] Hugo Leichtentritt, "Postscript 1947," in *Music, History and Idea*s (Cambridge, Mass.: Harvard University Press, 1958), p. 268. The widely held idea of German musical 'supremacy'—cunningly exploited by Nazi demagogues—had been built-up in the wake of increasing patriotism in Europe since the mid-nineteenth century. It is one thing to be aware of certain achievements by composers in a cultural region, and another to use these achievements in order to claim supremacy for a nation and combine it with Darwinian principles of survival. This political abuse of music—and the discredit it brings to those individuals and institutions who are viewed as elements in this scheme—may go a long way to explain the anti-hierarchical iconoclasm and internationalism of the young generation after the Second World War.

Fascism had favored certain Romantic composers—in Germany one could think of the role played by the music of Richard Wagner, Anton Bruckner, and Richard Strauss under the National-Socialist cultural agenda—and many young post war composers shared a deep aversion to a musical idiom characterized by adjectives like heroic, expressive, emotional, or gigantic. In 1985 Stockhausen related that, during his student years, he often reacted with disgust to certain works by Strauss, Wagner, Mahler, even Schoenberg. This rejection of a politically deformed magnification of the human psyche, a 'lower-body music' ('Unterleibsmusik') led certain composers towards the world of exact sciences and objectivity.[530] Hans Werner Henze, born only two years before Stockhausen, depicted the atmosphere at a music school during the Third Reich in the following terms:

> Man sprach über die Unterdrückung der persönlichen Freiheit, erinnerte einen munkelnd an die Autoren, die nicht aufgeführt werden durften (man wußte selbst auch nicht viel von ihnen), diese wurden als Geheimtip für Aufsässige, vor allem natürlich unser heimlicher Nationalkomponist, Paul Hindemith. Und Strawinsky. Das Zwölftonsystem, das machte die Leute nervös, es hatte etwas Perverses, Dekadentes, das einen mit banger Neugier erfüllte, besonders Schönberg, also die Wiener Schule usw.[531]

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[530] Hans Heinrich Eggebrecht, ed., *Karlheinz Stockhausen im musikwissenschaftlichen Seminar der Universität Freiburg im Breisgau, 3–5 Juni 198*5 (Murrhardt: Musikwissenschaftliche Verlags-Gesellschaft, 1986), p. 34. "Ich habe während des Studiums oft mit Ekel reagiert auf manche Musik von Strauß, von Wagner, von Mahler, von Schönberg, weil sie mir einfach zu vulgär war, zu platt, zu physisch, manchmal auch zu bestialisch." ("During my studies I often reacted with revulsion to certain works by Strauß, Wagner, Mahler, even Schoenberg, because I simply felt them to be too vulgar, flat, physical, sometimes also too beastly.")

[531] Hubert Kolland, "Die Schwierigkeit, ein bundesdeutscher Komponist zu sein: Neue Musik zwischen Isolierung und Engagement. Gespräch mit Hans Werner Henze.," in *Musik 50er Jahr*e, ed. by Hanns-Werner Heister and Dietrich Stern (Berlin: Argument-Verlag, 1980), p. 51. ("People spoke about the suppression of personal freedom, and reminded you in a whisper about the composers who could no longer be performed (you didn't know much about them yourself). For the rebellious, these became names to conjure with; first and foremost, of course, our underground national composer, Paul Hindemith. And Stravinsky. The twelve-note system made people apprehensive; there was something perverse and decadent about it (they said) that filled you with nervous curiosity, especially Schoenberg—in other words, the Viennese School, etc.") Hans Werner Henze, "German Music in the 1940s and 1950s," in *Music and Politic*s (Ithaca, New York: Cornell University Press, 1982), pp. 28–29.

One year after the end of the Second World War, the Darmstadt Summer School for new music were specifically created to fill the need for basic information about the latest musical developments, especially with respect to those composers who had been outlawed by the National-Socialist cultural politics as 'degenerate art' or forced into exile. In post-war Germany the need to catch up intellectually was at least as pronounced as the need to safeguard one's own existence. Germany—and for a short time Europe as a whole—had been deprived of the music of Stravinsky, Hindemith, Bartók, and the Viennese. But beyond those famous names were hidden countless fates of lesser known, but not less valuable composers, some of which we already encountered above and who would never make it to Darmstadt. Reviewing Darmstadt's first five years in 1952, its inaugurator Wolfgang Steinecke wrote:

> Sie [die Arbeit der 'Internationalen Ferienkurse für Neue Musik'] war aus der damaligen geistigen Not Deutschlands erwachsen, dessen Musikleben zwölf Jahre lang von der Welt abgeschnitten gewesen war….es galt die junge Generation der deutschen Musiker mit all dem vertraut zu machen, was in der Welt inzwischen vor sich gegangen …war.[532]

While it is surprising to think that the Darmstadt Summer School started as early as 1946, literally in the midst of the bombed-out city ruins, it is not surprising to find only sparse documentation for the events of the first years. Presentations were given orally, without manuscripts, and the earliest seminars were not yet recorded on tape. Several decisive historic moments cannot be documented.[533]

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[532] Wolfgang Steinecke, "Die Internationalen Ferienkurse für Neue Musik," in *Darmstadt-Dokumente* I, ed. by Heinz-Klaus Metzger and Rainer Riehn (München: Text + Kritik, 1999), p. 49. Originally published in Darmstadt program booklet of 1952. ("It [the work of the 'International Summer School for New Music'] had grown from Germany's spiritual and intellectual need after the war; it's musical life had been cut off from the world for twelve years... the challenge was to familiarize a young generation of German musicians with what had happened in the world during that time period.")

[533] Heinz-Klaus Metzger and Rainer Riehn, "Editorial," In *Darmstadt-Dokumente* I (München: Text + Kritik, 1999), p. 7.

Leibowitz had been invited to lecture in Darmstadt for the first time in 1948, the first year in which the Darmstadt Summer School took on a more international character. According to Steinecke, the erstwhile primary function of the summer courses—to reconnect German composers with the musical developments worldwide—had been fulfilled by 1947 or 1948 and, by 1949, the focus had shifted to the Viennese:

> Denn zu einem Zeitpunkt, zu dem die wichtigen Werke Strawinskys, Bartóks und Hindemiths durch zahlreiche Aufführung als weitgehend bekannt vorausgesetzt werden durften, erschien es von einem pädagogischen Standpunkt aus unerlässlich, auch die in offiziellen Musikleben totgeschwiegenen Werke Arnold Schoenbergs zur Kenntnis zu bringen…[534]

Many of Schoenberg's later works were premiered in Darmstadt: the Piano Concerto in 1948, the Violin Concerto, the String Quartet No. 4 and the String Trio in 1949, *A Survivor from Warsa*w in 1950, and "The Dance Around the Golden Calf" from the opera *Moses and Aron* in 1951.

Steinecke's argument that Schoenberg's music needed to be performed because it was "silenced to death" in official musical life parallels Leibowitz's conclusion in *Schoenberg and His School*:

> Furthermore, the silence which has, up until now—especially in France—surrounded the school of Schoenberg has certainly been responsible for many of the vagaries of musical activity during the last few years. There is no cause for despair, however. Even error can be fruitful—if it is denounced one day, if it is brought face to face with Truth. That, and nothing more, is what this book has tried to do. If it succeeds, the effort which it has cost me, and the breach of silence which it constitutes, will be justified.[535]

Leibowitz's book was never translated into German, so that its actual contents were only noted by those fortunate enough to read French and, while news of the Parisian

[534] Wolfgang Steinecke, "Die Internationalen Ferienkurse für Neue Musik," in *Darmstadt-Dokumente* I, ed. by Heinz-Klaus Metzger and Rainer Riehn (München: Text + Kritik, 1999), p. 50. Originally published in the Darmstadt program booklet of 1952.
[535] LEIBOWITZ 1949, p. 290.

dodecaphonist movement had reached Germany by 1947–48, there was not a single book or publication in German that could have informed in a remotely comparable way about the music of the Schoenberg School. Indeed, one may question when and where exactly a book like Schoenberg's *Harmonielehre* of 1911 was available around 1948—a book which did not contain any information about the twelve-tone method but, at least, had the merit of arguably coming as close as possible to it. Under the Nazi regime, German libraries had been required to remove works by 'degenerate' composers and, although not all of them may have obliged, many of them did. In Vienna, meanwhile, Universal Edition caught up only slowly to the many new tasks at hand and, before 1948, the situation on the ground in Germany was still marred by the rubble and finding living space; practical matters, such as obtaining score paper, were a problem for composers. In other words, Germany as a whole was truly ignorant about the details of Schoenberg's method and, in this situation, the Parisian dodecaphonists led by Leibowitz were often portrayed as a secret sect of fanatics. German musicologists, irritated that the French were better informed about Schoenberg, set out to provide alternative books. The primary effort in this regard was made by Josef Rufer, Schoenberg's former assistant at the Berlin Conservatory who, directly aided by Schoenberg, set out to write a definitive account of Schoenberg's composition method.[536] Soon Rufer charged that Leibowitz was misreading Schoenberg but, until 1952, there was no substantial publication to verify his claims and information remained confined to a few journal articles and radio programs on modern music.

[536] Josef Rufer, *Die Komposition mit zwölf Töne*n (Berlin: Max Hesses, 1952).

By 1948, this lack of basic knowledge about Schoenberg and his school became even more conspicuous, as Schoenberg's theory, repackaged for an uninformed lay readership, appeared in the center of Mann's Nobel Prize-winning novel *Doctor Faustus*. It was a remarkable irony that at the end of his life, Schoenberg, who had suffered greatly for feeling both German *and* Jewish, had to endure fame for something he never was. In a surprisingly insensitive manner, Mann's novel connected the person of Schoenberg intimately with an otherwise perceptive critique of the history and character of the German nation, so that Schoenberg's method was first known in his own country via the fictive person of Adrian Leverkühn. *Doctor Faustus*, rather than Schoenberg himself, became the source of information about dodecaphony in Germany, and while the fame of the novel reached the homes of many, the 74-year old Schoenberg had to make ends meet on a pension of $29.60 a month in a foreign land.[537] In the final twist of real history, only weeks prior to Schoenberg's death on 13 July 1951, Adorno—who had acted as inside informer for the musical portions of Mann's *Doctor Faustus*—took the place of the ill Schoenberg at a Darmstadt composition seminar and located the fictive Leverkühn in the person of a real composer, the Belgian Karel Goeyvaerts. This was not a compliment, as Leverkühn suffered from insanity. We must now turn to the latter's assistant, as Adorno once charged, the German composer Karlheinz Stockhausen.

[537] Schoenberg's German years in the 1930s in Berlin and his American odyssey after 1933 are recounted from the perspective of his eldest daughter Nuria and his son Lawrence, in a testimony to their mother: Nuria Schoenberg-Nono and Lawrence Schoenberg, "Gertrude Kolisch Schoenberg," (<http://www.nuria.freewebsitehosting.com/SPECIAL/GERTRUD%20SCHOENBERG/GERTRUD%20KOLISCH%20SCHOENBERG.htm> accessed on 1 April 2003),.

Karlheinz Stockhausen

Within Germany—where Protestants are more dominant in the North and Catholics in the South—Stockhausen (born 1928) grew up in a rural, quite central area that has traditionally been under the influence of the old Catholic city of Cologne. The first acknowledged bishop of Cologne was Saint Maternus in the fourth century A.D.—legends of earlier bishops date back even further—and this long religious tradition found its architectural expression in the monumental Cologne Cathedral. In his childhood Stockhausen lived in Altenberg, directly across the village square from the Altenberger Dom, which he visited three times a day.[538] He also recalls impressions of some lavish festivities: "two or three-hour long Sunday processions over the countryside—to sanctify fields and fruit, such as the Feast of Corpus Christi—in which we went from altar to altar and we already knew at the first altar: Oh God, this will take long!"[539] Once a week, from 1937 to 1938, he attended Catechism, where students learned about different types of sins —light, heavy, or deadly—and had to pass tests. The process culminated with the First Communion, during which Stockhausen fell into a religious trance:

> [I]ch habe sie mechanisch mitgesagt, weil ich sie schon oft aus tiefstem Herzen gesagt hatte und Gott längst von mir wußte, daß ich es auch wirklich meinte und ich ganz in Ihm war. [...] Diesen reinen Trance-Zustand habe ich nie vergessen.[540]

On the other hand, Stockhausen was aware of the schizophrenic split that occurred in the adult world, as a result of the Nazis' exploitation of government institutions for the

[538] Morning service or mass, afternoon meditation prayer, and Vespers: Karlheinz Stockhausen, "Musik als Prozeß," Gespräch mit Rudolf Frisius in Kürten (25 August 1982). Quoted from: Frisius, ed., *Karlheinz Stockhause*n (1996), p. 403.

[539] Ibid., p. 412.

[540] Karlheinz Stockhausen, "LICHT-Blicke," , Gespräch mit Michael Kurtz in Kürten (24 January 1981), quoted from *Text*e 6 (1989), p. 189. ("I had so often said them [the answers of the ceremony] from the bottom of my heart, and God had long since known that I really meant it and that I was utterly immersed in Him. […] I never forgot this pure state of trance.")

purpose of indoctrination. In 1938 the schoolroom crucifix had to be replaced by a Swastika, and Stockhausen's father, the schoolteacher, had to discourage prayer during the day while he continued to pray at home. Praying and spiritual practice would remain at odds with government institutions until the end of the war.

Stockhausen and his younger sister Katharina grew up under poor circumstances in the village world. Early on their mother fell victim to depression, and in late 1932 had to be taken to a mental hospital. She never returned and, in 1941, was put to death under the Nazi government's euthanasia policies. The father had remarried in 1938, and his new wife brought two daughters into the family. In 1942 Stockhausen entered a school in Xanten. By that time he already had had seven years of piano instruction from the Protestant organist of Altenberg cathedral.[541] After only one year of instruction, Stockhausen already was featured at the 'top part' at village and society festivals. Displaying great facility, he picked up music from the radio after just a single hearing. In the Xanten boarding school he learned oboe and violin, and his piano teacher in Xanten soon admitted he could not teach him further.

In the last six months of the war, sixteen-year-old Stockhausen witnessed thousands of people dying. He was employed as a stretcher-bearer in a hospital 25 kilometers behind the West Front:

> ... die Amerikaner und Engländer warfen zu der Zeit Phosphorbomben. Die Köpfe der meisten waren wie Schaumgummi... [...] Es gab keine Zeit mehr die Toten zu begraben. Sie lagen in einer kleinen, zerschossenen Kapelle, und jeden Tag warfen wir 30 oder 40 Körper einen über den anderen. Einige waren noch lebendig. Es war aber nicht genug Platz auf dem Lazaretthof, und so haben wir

[541] The organist's name was Franz-Josef Kloth. The Altenberger Dom is, by law, a bi-denominational institution—itself an oddity in the Catholic environs of Cologne.

> sie übereinander geschmissen, um Platz zu machen für die anderen, die ständig gebracht wurden. Manchmal kamen 500 an einem Nachmittag.[542]

He narrowly escaped death when he was caught out, in the open hospital court, in a hail of bullets from Hornet fighter planes. Upon hearing of the final Allied break-through, Stockhausen deserted. Returning to Cologne, he would never forget seeing three men executed by hanging—the punishment for desertion—and his fear he might have been one of them. His father did not return from a battlefield on the Eastern front and thus, in the immediate post-war period, Stockhausen helped taking care of his younger sisters in Blecher, a village fifteen minutes walking distance from Altenberg.

Most striking about Stockhausen's youth are those earth-bound images of a closed and remote village world, almost timeless in its activities, in which the most modern influence seems to have been a radio and occasional plane far above in the sky. The world of music appeared as a natural habitat for Stockhausen, who picked up tunes in passing and musically contributed to village festivities without paying it any heed.[543] The ancient traditions of the Catholic Church, on the other hand, seem to have deeply moved Stockhausen, even as he noted the alienation among state politics and these old religious traditions.

In contrast to this pastoral world, but not less striking, are the harrowing experiences during his half-year service as stretcher-bearer in the Bedburg hospital. In the midst of

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[542] Karlheinz Stockhausen, "Die Musik und das Kind," , Interview with Maurice Fleuret in Paris (22 August 1975), quoted from *Texte* 4 (1978), p. 589. ("... the Americans and English were throwing phosphor bombs at that time. The heads of most of the wounded were like balls of foam rubber.... There was not enough time to bury the dead. They were laying in an old, half-destroyed chapel, and every day we threw another 30 or 40 bodies on top of each other. Some were still alive. There was not enough place in the hospital court, so we threw them on top of each other, to make room for the other, who were being brought in constantly. Sometimes 500 arrived on a single afternoon.")

[543] This impression is derived from the most thorough description of Stockhausen's youth in print. See Michael Kurtz, *Stockhausen: A Biography* (London: Faber, 1992), especially "Childhood and Youth, 1928–47", pp. 7–20.

the turmoil of death and suffering, Stockhausen for the first time appreciated the full power of music. The frightened American and English soldiers confided in the sixteen-year old, who had a facility for the language of music:

> …when the soldiers were especially depressed and down at heart, they would always ask me to play for them. There was an old piano in the hospital, and I would play for them. When everything else was gone, music seemed to be of value. There was always food available, they weren't lacking for that, but is was when they felt their lives no longer had any meaning that they liked to have me play for them. I would play for hours, to suit all tastes. One would ask for a Beethoven sonata and another for a very vulgar song, or a sentimental ballad. All kinds…[544]

At this time, Stockhausen was still far from a professional career as a composer, but this hospital experience dramatically showed him the power of transformation in music. One can hardly imagine more anguishing situations than those of phosphor bombing victims or other terrifying wounds. Throughout his mature life, Stockhausen always sought only the highest function for music and promoted its role as an agent of transformation, both for human society and the life of the individual.

During his study period, Stockhausen often fulfilled the role of a musical servant, playing in nightclubs, and later as accompanist to the magician Adrion. After finishing grammar school in Easter 1947, he moved to Cologne and, completely penniless, enrolled in a four-year music teacher education. During his study, he earned extra money in all types of odd jobs to supplement a small orphan's allowance. The paid musical jobs included playing jazz for the occupying forces in Cologne nightclubs and providing the piano accompaniment for the magician Adrion.[545] Sharing a room with other students

[544] Robin Maconie, ed., *Stockhausen on Music* (London: Marion Boyars, 2000), p. 22.

[545] Alexander Adrion, "Zaubern mit Stockhausen," *Frankfurter Zeitung* (10 August 1988). The magician Adrion recalls his 1951 collaboration with Stockhausen. For a contemporary performance review see: "Bunte Märchen auf der Bühne: Alexander Adrion bezaubert das Publikum." *Westfälische Rundschau* of 10 December 1951.

during his study period in the late 1940s, he recalls living on oatmeal with sugar and Care packages from Canadians which mainly consisted of coffee: "coffee, coffee, and more coffee… that was really not good for us". Surprisingly, perhaps, Stockhausen doesn't see the circumstances of his youth as negatively as one might expect: "One was free of adults, who always wanted to dictate us what to do" and, though there was not enough food, "spiritually we had eaten a lot: the first books of Thomas Mann, everything, that arrived from those who had left Germany before or during the war… became very important for us."[546] Indeed, seeing the many musical activities in which Stockhausen was involved during his student years, this rich cultural environment contrasts starkly with the material difficulties.[547]

Although his extraordinary musical facilities clearly predestined Stockhausen for a life as a professional musician, he was initially contemplating a career as a writer. He was deeply moved by Mann's *Doktor Faustus* and Hesse's *The Glass Bead Game* and, in 1948–49, wrote poetry and a novel entitled *Humayun.* Courageous and desperate for orientation, Stockhausen directly wrote to Nobel Prize winner Hesse. He expressed existential anguish after the loss of both parents, dissatisfaction with his teachers, loneliness in the cold post-war world, and a deep longing for spiritual purity and renewal

[546] Freely summarized and quoted after Stockhausen, "Die Musik und das Kind", pp. 589–91.

[547] I can only very briefly sketch the youth and education of Stockhausen in this context. For a very detailed account of Stockhausen's youth, see Kurtz, *Stockhausen*, pp. 7–31.

that had been described by Hesse in his novel *The Glass Bead Game*.[548] In the letter of Boxing Day 1949, Hesse learned of the deep spiritual crisis of the young man:

> I would grow silent, if I knew that only a few cannot pray with me! I cannot compel in myself the basis from which prayer once came, up from which it must come—without fear and threats, as well! We cannot pray any longer!! […] The time however cries out like the children for faith, for premonitory hope, for Christmas Eve [Heilige Nacht], for the night before Christmas [Christnacht]. And I cry out that I want to pray, to believe—I am ready! But conversion does not come from the intellect—and the crucial thing in us humans doesn't give a damn for the intellect, for the will, which let itself wither as it felt fully fledged and sought so much covetousness behind things, until one night before Christmas, in a unique recollection it stood in its own light, sensed a rift in itself and willingly committed an abduction of God! There childhood was swept away from the renewable proximity, into which alone one would be able to escape, in peace.[549]

In response Hesse sent a typewritten Chinese poem, which was also posted at the front door of his house in Switzerland. The poem began: "When a person has grown old and has done his bit, he is entitled to make friends in peace with death." No doubt the Nobel Prize winner clamored for peace. Stockhausen stopped writing for the next nine

[548] Hermann Hesse, "Vom Wesen und von der Herkunft des Glasperlenspiels," in *Materialien zu Hermann Hesses 'Das Glasperlenspiel'*, Edited by Volker Michels (Frankfurt: Suhrkamp, 1973). In its final form Hesse projected the Glass Bead Game as purified essence of the spiritual in man. It represents a contemplative and spiritual synthesis of all religions, sciences, and arts in human history through the use of an abstract language of formulas and symbols. Around 2150 the Game has renewed and healed all human societies from the depressed levels of the twentieth century and it is practiced on a world-wide basis. At that point it coexists side-by-side with world religions—it avoids offending any particular religion in its game structure—and has gained full accepted by governments due to its beneficial influence on all realms of human activity. It is a new form of art played in state-sponsored public festivals.

[549] Christoph von Blumröder, "Orientation to Hermann Hesse," *Perspectives of New Music* 36, 1 (1998), pp. 77–78. The exact sequence of letters is lost in Blumröder's argument. It runs as follows:

Stockhausen, letter to Hesse, 13 August 1949. Long letter, first approach.

Hesse, letter to Stockhausen, late August 1949. Hesse sent a genuine reply, giving his view of positives and negatives on the basis of Stockhausen's letter alone.

Stockhausen, letter to Hesse, 6 September 1949. Stockhausen sent his novel and poems for evaluation. [On p. 9, Blumröder depicts this letter as a 'brief thank-you note', which is misleading. Stockhausen had just received a genuine reply from Hesse and, encouraged, along with the brief thank-you note, sent Hesse a large quantity of his writings for review...]

Hesse, letter to Stockhausen, October 1949. Unable to read the submissions due to weak eye sight.

Stockhausen, letter to Hesse, 26 December 1949. Anguished letter. Excerpt quoted above.

Hesse, letter to Stockhausen. Machine typed note with poem spelling out 'Leave me alone!'.

Nine months interval without correspondence.

Stockhausen, last letter to Hesse, 22 September 1950. A very poetic thank you note: Hesse had helped Stockhausen to find an important inner truth.

months. During that period Stockhausen must have been able to renew his faith. In his last letter to Hesse he apologized for his previous tone of helplessness: "You have thrown [a beautiful crystal grown from tears] to me, and it has blossomed like an eternal rose." Blumröder suggests that, at this point, Stockhausen had overcome his crisis and turned to music in the spirit of the glass bead game. In fact we have evidence to suggest an alternative course of events.

There is much more direct a parallel between Stockhausen's student works and *Doktor Faustus*. Stockhausen composed his first serious student works in late 1949 and 1950, and immediately adopted the dodecaphonic system. *Doktor Faustus* tells the life of fictional German composer Adrian Leverkühn whose compositions involve elements derived from descriptions of the work of Mahler and Schoenberg, among others. Mann linked the fate of Germany to the personal fate of Leverkühn, establishing a relationship between music, ethics, and society. While the two novels are very different, there are also a few remarkable parallels and both attribute a similarly important role to music. Mann's novel, however, established a direct relation to Schoenberg and dodecaphony, therefore paralleling Stockhausen's adoption of that composition technique. The novel was discussed prominently in the German press and media after 1948.[550] Leverkühn's last words in his presentation of the dodecaphonic system and its magic square—"Reason and magic ... may meet and become one ... in belief in the stars, in numbers…."—to Stockhausen's music of the stars: Messiaen's *Mode de valeurs.* But it is not my aim to discuss here the possible repercussions of Thomas Mann's novel in Stockhausen's oeuvre. We may easily overlook today that, due to the Nazi regime's policies,

[550] For the relevant excerpt see p. 197 and fn. Fehler: Verweis nicht gefunden.

Schoenberg's music and his theories were practically rooted out in Germany. One has to wonder if even a book as basic as the *Harmonielehre* by Schoenberg would have available at the Cologne Conservatory music library in the late 1940s. If the availability of scores by the Viennese is any gauge, Schoenberg's *Harmonielehre* would have to wait also until after 1950 to become available again. Stockhausen's composition method is so close in spirit to Schoenberg's that one is led naturally to assume he studied the *Harmonielehre*, yet he never mentioned that he did. Curiously enough, Mann's novel may have served the autodidact Stockhausen as source of information on dodecaphonic theory. It stands to reason, then, that *Doktor Faustus* stimulated Stockhausen's interest in composing his first dodecaphonic works in 1950. Hesse's *Glass Bead Game* was clearly influential in different ways, and it led Stockhausen to *write*. Remnants of the fascination with Hesse are still expressed in certain titles of Stockhausen's early compositions like 'Kreuzspiel' and, most prominently, 'Spiel'. The biographical data, however, underlines the extraordinary musical talent of Stockhausen and, in this light, his inclination to become a writer seems no more than the short-lived fad of an adolescent. In a letter from October 1951 to his friend Goeyvaerts, Stockhausen compared the novels of Mann and Hesse and Schoenberg's "Dance around the Golden Calf" as last paving-stones of a development just left behind; Heidegger's *Holzwege* and Messiaen's *Mode de valeur et d'intensités*, on the contrary, appeared as promising new beginnings.[551]

Stockhausen's first encountered dodecaphonic music when he attended a concert by Else C. Kraus in December 1949. She played the entire Schoenberg oeuvre for solo

[551] See facsimile letter printed in SABBE 1981, pp. 81–83.

piano at the Cologne Musikhochschule.[552] Stockhausen was fascinated by the recital and went in search of scores in the music library. He found only a single item that apparently had escaped the repression: *Herzgewächse* op. 20, for voice, celesta, and harmonium.[553] Furthermore, Stockhausen attended two presentations on twelve-tone music by Herman Heiß and Josef Rufer and, in his last year of studies, read Eimert's *Lehrbuch der Zwölftontechnik* of 1950.[554] He later described himself as a self-taught twelve-tone composer, but in his earlier biographic notes Stockhausen sometimes mentioned his first composition teacher, Swiss composer Frank Martin.[555] He may have done so for formal reasons, but it is fair to mention that Martin was familiar with dodecaphony and, unlike many contemporaries, at least did not object to it on principle.[556] Likely Hermann Schroeder was Stockhausen's most important music teacher at the Cologne Conservatory; he taught Stockhausen harmony and counterpoint since 1947, recognized his talent and, in 1950, recommended he study composition with Martin.[557] From this

[552] Else C. Kraus, born 1903 in Darmstadt, took seminaries with Schoenberg in Vienna (October 1918 to June 1920) and premiered two of Schoenberg's piano compositions: Piano Piece op. 33a on 30 January 1931 in Berlin and Piano Piece op. 33b on 20 September 1949 in Frankfurt.

[553] This score is a surrealistic, proto-electronic work of Schoenberg's so-called free atonal period. Boulez performed the music under Leibowitz in December 1945 in Paris.

[554] Herbert Eimert, *Lehrbuch der Zwölftontechni*k (Wiesbaden: Breitkopf & Härtel, 1950). Stockhausen recalls: "Gegen Ende des Studium fand ich das Büchlein von Herbert Eimert über 12-Ton Musik, und ich befaßte mich viel mit Allintervall-Reihen, Quint und Quart Verwandlungen." ("Towards the end of my studies I found Herbert Eimert's booklet on twelve-tone music and got involved with all-interval rows, as well as quint and quart transformations.") Karlheinz Stockhausen, "Vor und nach SAMSTAG aus LICHT," , Gespräch mit Hermann Conen und Jochen Hennlich in Kürten (11 July 1984), quoted from *Text*e 6 (1989), p. 314.

[555] Karl Heinrich Wörner, *Karlheinz Stockhausen. Werk und Wollen 1950–196*2 (Rodenkirchen: Tonger, 1963), p. 25. English ed. 1973, p. 251. Also see Imke Misch and Markus Bandur, eds., *Karlheinz Stockhausen bei den Internationalen Ferienkursen für Neue Musik in Darmstadt 1951-199*6 (Kürten: Stockhausen-Verlag, 2001), pp. 7, 39, 42.

[556] Frank Martin's article on Schoenberg in a special issue dedicated to dodecaphony makes his open-mindedness very plain. Frank Martin, "Schönberg et nous," *Polyphoni*e, 4 (1949), pp. 68–71. Stockhausen later often pointed out that his composition studies with Martin did not amount too a real study and, on one occassion, even denied having studied with Martin: "I did not study with Martin." Stockhausen, *Texte* 10, p. 465.

[557] See Karl Heinrich Wörner, *Stockhausen: Life and Wor*k (London: Faber and Faber, 1973), p. 28 and Misch and Bandur, eds., *Karlheinz Stockhausen*, p. 7. Stockhausen showed his harmony and counterpoint teacher Schroeder his compositions; see Stockhausen, Texte 4, p. 376.

near-autodidactic basis emerged his first twelve-tone student compositions: *Chöre für Doris* (1950), *Choral* (1950), *Drei Lieder* (alto voice and chamber orchestra, 1950) and *Sonatine* (violin and piano, 1951). These works are remarkable for their musicality—at least to the ears of this author; yet, aesthetically, it is clear why Stockhausen distanced himself from them after learning about Goeyvaerts's method of composition and after hearing the music of Nono, Boulez, and Messiaen during his very first participation at the Darmstadt Summer School in 1951. There was too much lyricism and subjectivity in this music. His student works were only premiered in the early 1970s, when Stockhausen had come to relax his earlier stringent self-criticism. All these works are composed in orthodox twelve-tone technique. The Sonatina for Violin and Piano was the last work Stockhausen composed as a music student in Cologne and before he met Eimert.

Herbert Eimert

Herbert Eimert (1897–1972) had pivotal influence on Stockhausen's early career as a composer. Eimert's biographer and friend Kirchmeyer described him as "schweigsam, verschlossen, menschenscheu, hintergründig, kritisch und gefährlich."[558] Eimert fought in the First World War. In 1919 he narrowly escaped from a Polish prison camp; none of his friends in the camp survived. He settled in Cologne and began studying music. In 1924, still a student at Cologne Conservatory, Eimert published the booklet 'Atonale Musiklehre'. It brought him only trouble. A theory teacher at the Conservatory, Franz Bölsche, demanded he resign from the music school. Next Eimert came in conflict with Hauer and, last but not least, with the Nazis after 1933.

[558] The information in this section is largely based on Helmut Kirchmeyer, *Kleine Monographie über Herbert Eimer*t (Stuttgart: Hirzel, 1998), p. 4. ("reticent, secretive, 'afraid of people', profound, discerning, and dangerous.")

After the debacle of the 'Atonale Musiklehre', Eimert found his way to musicology. Between 1930 and 1933 he composed and experimented building innovative music instruments. Through his friendship with Yefim Golïshev, Eimert learned about early prototypes of extended serialism. Golïshev is alleged to have worked with pitch and rhythm series as early as 1914. Like Stefan Wolpe, Golïshev was a member of the Berlin *Novembergruppe* of avant-garde artists and musicians.[559] By 1933, Yefim Golïshev fled Germany and Eimert had chosen inward emigration. He lived as music critic in Cologne, doing his best to fight the injustices of the times. His record after the war was spotless enough to earn him the trust of the allies and return to him positions and rights he had lost gradually during Hitlerism. He began working at the radio in Cologne, which the English tried to create after the model of the BBC.

Eimert's first achievement after the war was the creation of a radio broadcast series on everything pertaining to contemporary music. The *Musikalisches Nachtprogramm* had an unequaled importance for the spread of new music after the war in Germany. Its bi-weekly programs ran for almost twenty years—from 1948 to 1967—and brought modern music in all its shades and variations into the most remote corners of Germany. The *Musikalisches Nachtprogramm* filled the need for spiritual food which, despite the ongoing difficulties and misery in the destroyed cities of Germany, seemed more urgent than food or clothing. By 1948 Germany had eleven independent radio broadcast stations and most of them were already back under German control.[560] The decentralization fostered broad competition between stations. The *Nachtprogramm*, for a large part

[559] See page 201 for a short summary of the *Novembergruppe*.

[560] Ulrich Dibelius, "Rundfunk und neue Musik," in *Musikkultur in der Bundesrepublik Deutschland: Symposion Leningrad 199*0, Edited by Rudolph Stephan and Wsewolod Saderatzkij (Kassel: Bosse, 1994), p. 224.

resting on Eimert's talents as a musicologist and radio host, was a net winner in this competitive field for the Cologne branch of the NWDR radio.[561]

Eimert's second big achievement was his involvement in the planning, creation, and realization of an electronic studio at the Cologne Radio. On 18 October 1951 director Hanns Hartmann and a number of his colleagues met with Meyer-Eppler, Eimert, Robert Beyer, and Fritz Enkel. The dated conference memo stated that Cologne Radio had a genuine interest in facilitating the creation of 'authentic' radio music—using the full potential of recent technologies—and not only its distribution via the radio.[562]

The underlying idea of the electronic music studio was to offer facilities for music research at all levels, with the ultimate aim that specific music for the radio would be

[561] The British had combined Hamburg and Cologne Radio into the NWDR, with the headquarters located at Hamburg. This combination of radio for North and West German audiences proved to be an ongoing source of frictions, until the two branches became independent on 1 January 1956 (NDR and WDR). Until 1956, however, the finances were controlled in Hamburg, often to the dismay of the Cologne branch.

[562] Memo reprinted in Marietta Morawska-Büngeler, *Schwingende Elektron*en (Köln-Rodenkirchen: Tonger, 1988), p. 8. Meyer-Eppler led the discussion that day, but doubtlessly in the background Eimert held some strings. I do not share the view of several authors, who equate the birth of the electronic music studio with the date of the memo.

In 1951 Cologne Radio was still housed in make-shift buildings—an aerial photo of Cologne in 1945 shows the city in ruins—and Cologne Radio's new home, right next to the Cathedral, was opened on 21 June 1952.

The studio was <u>not</u> opened in 1952, although Eimert, Beyer, Enkel, Meyer-Eppler, Schütz, Boulez, even Stockhausen were at that time already experimenting in the various locations of the WDR building. It took until the spring of 1953 before Meyer-Eppler and Fritz Enkel had finished their work on creating a state-of-the-art electronic studio. The following source documents the sophistication of the technical equipment of this studio, which in the summer of 1953 was absolutely unique in the world: Fritz Enkel, "Die technischen Einrichtungen des 'Studios für elektronische Musik'," *Technische Hausmitteilungen des Nordwestdeutschen Rundfunks* 6, 1/2 (1954), pp. 8–15. The official opening of the Electronic Studio at the NWDR Cologne was not a secret and is well documented as part of the Cologne International Music Festival of May 1953. See for example: Wörner, *Karlheinz Stockhausen. Werk und Wollen*, p. 27 and Wörner, *Stockhausen: Life and Work*, p. 254. The planning of the electronic studio and the execution of the plan are two separate issues and there is not a shred of evidence to support the claim Cologne had an electronic studio by October 1951. I see no urgency to make that claim; it does not impact our knowledge of the pioneering role of Robert Beyer or Herbert Eimert. Their works were produced in the Radio building prior to the opening of the studio. Eimert initially named the Electronic Music Concert of October 1954 (!) as the historic first Electronic Music concert: Herbert Eimert. "Elektronische Musik." LP Vinyl Record and Disc Notes. Germany: Wergo, 1963). Indeed, the concert which is now regarded as the historic first concert of electronic music was a co-production with Schaeffer's *musique concrète*. Historically electronic music had not come into existence separately from *musique concrète*, but in its wake. It was logical for Eimert to claim the first concert had happened *after* the umbilical cord had been cut. The October 1954 concert was Electronic Music *pur sang*.

produced through those facilities. This was not at all uncontroversial. Adversaries argued the radio should function merely as reproducer and had no right to spend public funds on music research or as salary for 'radio composers'. Eimert, supported from the brilliant Meyer-Eppler in Bonn, was instrumental in realizing the utopia of a music research institution such as Cage had tried to establish—with a mixture of anger and despair—earlier that year in America. Eimert's connection to such a research facility was quite personal; he had been engaged in experimental research around in the early 1930s and, for him, it was thus a powerful reminder of twelve lost years of his personal life under the Nazi regime. Radio Cologne's director Hartmann had the vision to back the project and, in the early 1950s, Cologne Radio rose like a phoenix from the ashes and attained worldwide fame for its unique electronic music studio and the unique timbre compositions of the early 1950s.

Eimert met Stockhausen in the spring of 1951 and immediately spotted his musical talent. Shortly after their first meeting, Eimert arranged the radio broadcast of the Sonatine for violin and piano. A few months prior to their meeting, Stockhausen had submitted his *Drei Lieder* for the Darmstadt Summer School, but they had not been selected. Eimert had been on the jury and was now able to inform Stockhausen about the reasons for the rejection: his texts had been judged too cruel and the music too old-fashioned. Eimert urged Stockhausen to participate in Darmstadt so he could meet other composers of his generation. Eimert himself planned to lecture on dodecaphony and the challenge of new technologies for music. One gets the impression of a father figure; Eimert was about thirty years older than Stockhausen and very protective of Stockhausen's iconoclasm. It was to become a difficult relation in the future. In the

short term, however, Stockhausen and Eimert had found each other. Both men were very fond of rational organization and abhorred excessive sentimentality. Through his influence at Cologne Radio, Eimert organized an all-important first assistantship for Stockhausen as a 'radio composer' and, in contrast to the impression one may get from a superficial reading of some of Eimert's writings, he was far more open-minded for the ideas of composers than Schaeffer, who held a similar position of authority at Paris Radio. He set up a music laboratory for Stockhausen and a few other brilliant composers, and defended it tooth and nail against all detractors throughout the 1950s. His personal effects document his ongoing and genuine concern to secure small salaries for the young radio composers and, in addition, commissions for specific works.[563] Goeyvaerts, Cage, Boulez, and other composers were far less lucky than Stockhausen in gaining access to the new technologies. Eimert occasionally composed works himself, but his life had been too accidented to allow him to turn back the clock.

Darmstadt Summer School of 1951

The 1951 Darmstadt Summer School lasted from 22 June to 10 July. Concurrently, the ISCM's twenty-fifth festival in Frankfurt (22 June to 1 July) was followed on its heels by the Second Twelve-Tone Congress (2 to 4 July), which also included a number of concerts with twelve-tone music. Busses commuted between Darmstadt and Frankfurt to

[563] Kirchmeyer describes some of the fierce attacks by reactionary Cologne critics, who were portraying the activities of the studio as an outrageous waste of public funds. Eimert also fought for small salaries for certain contributors of *Die Reihe*: "In den Verhandlungen mit der Universal-Edition hatte er ein wachsames Auge für die schlimme Lage, in der sich viele der Mitarbeiter der Reihe befanden. Das Periodikum sollte sich selbst tragen, Honorare wurden nicht gezahlt. Die Briefe im Nachlaß beweisen aber, daß er in einigen wenigen Fällen für Mitarbeiter, denen es besonders schlecht ging, eine kleine Vergütung verlangte." Kirchmeyer, *Kleine Monographie*, p. 27. ("In his negotiations with Universal Edition he was mindful of the dire financial situation of many *Die Reihe* contributors. The journal was designed to be self-supporting, and contributors received no compensation for their work. The letters in his estate prove, however, that in a few cases, where contributors were living in particularly poor conditions, he insisted on a small fee.")

facilitate transportation between the various events of this joint festival. By 1951 the quota of international participants had risen to 33%, compared to a lone international participant during the first two years of Darmstadt's operation (1946–47). During the three weeks of the summer school, Stockhausen established first contacts with a number of his future colleagues, including Luigi Nono, Gottfried Michael Koenig, Bruno Maderna, Goeyvaerts, as well as festival organizer Wolfgang Steinecke. All in all, ninety-eight participants took part in the lessons, concerts, and social gatherings at and around the Marienhöhe. There was a genuine atmosphere of exchange and communication in these early post-war years: composers shared their ideas freely and profusely.

Eimert had become acquainted with Goeyvaerts at the world premiere of Webern's Second Cantata at the Brussels ISCM festival of 1950. At that time Eimert had also heard Goeyvaerts's music and was enthusiastic about the Belgian composer. In May 1951 Eimert produced a *Nachtprogramm* in which Goeyvaerts's *Tre Lieder* were presented—next to music by Nono, Jolivet, Boulez, Webern, and Varèse—as an example of relevant tendencies in contemporary music. For Goeyvaerts, it was also a first participation. His *Music* for violin, contralto, and piano—an earlier neo-classical work dating from 1948—had been selected by the Darmstadt jury and was performed on 8 July 1951.

On the last day of the summer school Goeyvaerts's music was heard yet again when Eimert offered course participants a replay of a *Nachtprogramm* discussion, occupying the last time slot of the workshop 'Sound World of Electronic Music'. The topic of the scripted *Nachtprogramm* discussion was outlined as: 'Is Music Finished? An Optimistic

Perspective on Music at the Crossroads.'[564] Eimert's and Steinecke's talk covered excerpts from Varèse's *Intégrales* and *Ionisation*, Webern's Piano Variations op. 27, Boulez's *Le Soleil des eaux*, Jolivet's *Psyché*, Goeyvaerts's *Tre Lieder*, and Nono's *Variazioni canoniche sulla serie dell'op. 41 di Arnold Schoenberg*. Steinecke and Eimert began by reviewing the signs of cultural pessimism, which had appeared in increasing number since the late nineteenth century. Steinecke cited Pfitzner's *Palestrina* as a work that very consciously captured an end-of-period atmosphere.[565]

Eimert agreed and added that it would be helpful to specify which type of music had come to a dead end. No doubt, Eimert asserted, Nietzsche had Wagner's music in mind when he spoke of a 'finis musicae'—an end at which music is degraded to function merely for hedonistic purposes—but, today, one could see this end-game repeat for historicizing music, such as neo-classicism. Such tendencies had come to their end as well and, recently, signs of a new 'non-historicizing' trend, unnamed as of yet, had appeared on the horizon. Steinecke warned Eimert that the term 'non-historicizing' could only serve as a crude makeshift to differentiate the new style from neo-classical or neo-baroque tendencies. He believed, on the contrary, that the new style had deeper and older historic roots than the neo-classical styles of the day:

> [...]; im Gegenteil, sie [diese Musik] scheint mir die durch den bisherigen Verlauf der Musikgeschichte bedingten Konsequenzen viel klarer und eindeutiger zu ziehen, d.h. ohne Ausweichen und ohne Umwege. Insofern scheint mir diese Neue Musik, so ungewöhnlich neuartig und befremdlich sie

[564] Wolfgang Steinecke and Herbert Eimert, "Ist die Musik am Ende? Eine optimistische Betrachtung über musikalische Grenzsituationen," Vol. 3 (10 July 1951), quoted from Borio and Danuser, eds. *Im Zenit der Moderne*, Vol. 3 (1997), pp. 340–53. First presented on 24 May 1951 as *Musikalisches Nachtprogramm* at the NWDR Cologne Radio.

[565] He calls it a "Schlußstein." Cf. Stockhausen's letter to Goeyvaerts of 10 August 1951, where he uses the same expression in exactly the same sense to characterize the importance of Thomas Mann, Hermann Hesse, and Arnold Schoenberg. SABBE 1981, p. 82.

> auch klingen mag, von der Konsequenz des historischen Verlaufs aus viel stärker begründet zu sein.[566]

At this point, Eimert proposed to listen to excerpts of this new as-of-yet-unnamed style. *Intégrales* was followed by Varèse's *Ionisation*, which prompted Eimert to wonder why the public had hissed at this percussion music on the occasion of its European premiere last year: Eimert did not find it revolutionary; Steinecke begged to disagree. From the noise symphony of Varèse, the analyst duo Eimert-Steinecke took the audience to the abstract world of Webern's Piano Variations. This work represented a different type of borderline situation, a type of 'end' which Mann had described as *Zurücknahme* (cancellation)—a music, moreover, from which all historical remnants had been cleansed. Steinecke remarked that although Webern's music was not heard often, and then only by few, its existence was far more real than entertainment drizzling from the radio for eighty million people.

Eimert cut short this bypath of more politically oriented reasoning, and the audience then heard an excerpt of Boulez's *Le Soleil des eaux*. Steinecke remarked on Messiaen's role as a leader for the young French—'composer and rhythmician as he calls himself'—and his advanced rhythmic theories. After having projected portions of André Jolivet's *Psyché* and Goeyvaerts's *Tre Lieder*—both of which included the Ondes Martenot—Eimert summed up these compositions from the Parisian confluence as 'Klangfarben-Bilder' (Timbre-paintings). Steinecke added that the presence of the Ondes Martenot in those works prefigured that our current pitch systems and music instruments might soon

[566] ("[...]; on the contrary, it [this music] draws its conclusions from history in much more lucid and univocal a manner, that is, without evasions and detours. In this sense I believe that this New Music—as new and strange as it sounds—is much more firmly grounded in historic events [than historizing, i.e. neo-classical music].") Steinecke and Eimert, "Ist die Musik am Ende?", p. 344.

prove themselves too limited to accommodate further musical developments. Finally Steinecke asked rhetorically if a work like Nono's *Variazioni canoniche* did not display far too modern an aesthetics to be held prisoner of traditional instruments. Later that night, the premiere of that last composer's *Polifonica—Monodia—Ritmica* ended the Darmstadt Summer School session of 1951 in style.

This synopsis of the *Nachtprogramm* tape projection at Darmstadt—probably lasting about ninety minutes within a day's worth of workshop devoted to electronic music[567]—provided a snapshot of the wealth of ideas and thoughts generated during the Darmstadt Summer School. Stockhausen learned more in a few days in Darmstadt than in months at the *Musikhochschule*. The ideas about music, which had been expressed in this lecture by Eimert and Steinecke, profoundly influenced Stockhausen. His early theoretical texts retrace the exact same reasoning; they sketch the historic root of the unnamed new style in Varèse and Webern, and point out traditional limitations in music instruments and their standard tunings systems.

[567] In 1951 and 1952 the term electronic music included *musique concrète*. Prior to the discussion between Steinecke and Eimert, Schaeffer and Pierre Henry had presented the German premiere of *Symphonie pour un homme seul* and *Orphée 51*. Both works were naturally included under the workshop heading of 'The Sound World of Electronic Music'. The divisive use of the terms 'electronic music' and '*musique concrète'* developed on the heels of increasing criticism of Schaeffer's approach by Boulez and other French composers in 1952. Schaeffer reacted by becoming exclusive. After Stockhausen's return to Paris in January 1953, Schaeffer forbade him to continue his alleged 'personal' experiments. He suggested Stockhausen should engage in systematic sound cataloging: "What I'm working on here is nothing much: when I got back, Schaeffer declared that he was no longer prepared to accept my 'personal' experiments, and that I should begin a systematization of sounds for the archives. So I'm doing nothing but looking at technically perfect recordings of relatively simple sounds of various types amongst the material recorded up to now." Stockhausen, letter to Goeyvaerts, 8 February 1953. Quoted from Richard Toop, "Stockhausen and the Sine-Wave: The Story of an Ambiguous Relationship," *Musical Quarterly* 65 (1979), p. 389.

The Promised Land

Much of the three weeks at Darmstadt was spent socializing and discussing matters of personal importance. It is the most often overlooked subtext of all conferences and festivals. Stockhausen and Nono became friends. They kept writing to each other in the months and years to come. More important for Stockhausen's most immediate future as a composer became his friendship with Goeyvaerts, who introduced him to a new musical language of unprecedented elegance. In the spring Goeyvaerts had completed his Sonata for Two Pianos, also entitled 'No. 1' or 'Opus 1' in order to offset it from his past work.[568] His turn to serialism in 1949 possibly had been caused by the encounter with Cage and his fascination with mirror structures in Webern's late works.[569] He followed closely Webern's model of realizing 'pure abstract structure' by splitting the pitch materials into complementary sets and recombining them to create multiple symmetries around chosen pivot points.

The aesthetic ideal of pure structure is the cross-form, with its simultaneous symmetry in the horizontal and vertical dimension. Goeyvaerts realized the cross-form at the largest formal level of his sonata. The last two of its four parts were retrogrades of the initial two movements. Philosophically, Goeyvaerts sought to portray a move from indeterminacy to determinacy and back to indeterminacy. The first part of the music was set in a relatively freer style than the second and, in the last half of the sonata, this

[568] Several work analyses are available: Sabbe, "Das Musikdenken von Karel Goeyvaerts in Bezug auf das Schaffen von Karlheinz Stockhausen" (1973), pp. 101–3; TOOP 1974, pp. 152–58; Sabbe, "Het Muzikale Serialisme als Techniek en als Denkmethode" (1977), pp. 43–55; SABBE 1981, pp. 7–11, containing the score of part 2 of the Sonata on pp. 86–87; Sabbe, "Goeyvaerts and the Beginnings of 'Punctual' Serialism and Electronic Music" (1994), pp. 55–94.

[569] See Cage's use of Webernesque mirror structures in his String Quartet (1949–50). David W. Bernstein, "Music To the Late 1940s," in *The Cambridge Companion to John Cag*e, ed David Nicholls (Cambridge: Cambridge University Press, 2002), pp. 78–79.

progression retrograded. Goeyvaerts and Stockhausen performed the second, strict part of the sonata in Adorno's composition seminar during the Darmstadt Summer School and my discussion will focus on this part. Nevertheless one should not forget—as too often happens in relation with Boulez's *Structures I*—that the second movement of the sonata is only one side of a work conceived in a broader framework of dialectical thought.

Stockhausen was eager to learn more when he heard about a new way of composing and, over the next few weeks, Goeyvaerts explained him his system in great detail. In the two inner movements of the sonata he articulated a fourteen-tone complex in twenty successive phases. Each phase states fourteen tones once and only once. Initially the pitches are set within an ambitus of about 5½ octaves. This ambitus shrinks in each successive phase, reaching the point of highest concentration at 2½ octaves in the tenth and last phase of the second movement. The third movement retrogrades the slow pitch space concentration into a faster pitch space expansion through doubling the speed and, after ten phases, restores the initial ambitus of 5½ octaves.

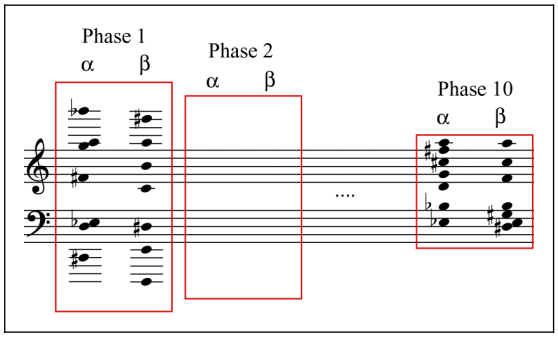

Figure 11: Registral Planning of Goeyvaerts's Opus 1, Part 2

The gradual compression and expansion of the pitch space is realized systematically by rotating pitches through octave spaces. The *law of rotation* mandates that the highest pitch will be 'humbled' to become the lowest; other pitches ascend one octave per phase.

The highest note in the first phase, for example, will drop five octaves in phase two. Then it ascends one octave over the next four phases, reaching again the highest point within the half-compressed fourteen-tone complex in the sixth phase. The next phase sees the pitch drop again, this time only by three octaves. The pitch migration through the octave spaces added an abstract level of crossing not seen in Webern's Piano Variations, and it impressed Stockhausen immensely. The rotation to the center can be called 'complete' after ten phases, because two notes do not rotate. The pivot notes a^2 and d# are represented twice in each fourteen-tone complex and remain immobile throughout. They are at the center of two heptatonic pitch class sets α and β (see Figure 12), demonstrating, again and on a different level, the overriding concern for the symmetry of the cross-form. As a dialectical mode of thought, however, these immobile pitches oppose the rotating pitches in a metaphor of law and freedom.

Clearly Goeyvaerts went beyond the models found in the music of Webern. He even extended Webern's thinking to the musical dimensions of the inner sound. The attempt to create symmetries within the inner sound world is evident in the 'synthetic number' concept. Goeyvaerts set up separate scales for pitch, rhythm, intensity, and articulation and assigned 'valencies' to the scale degrees of each dimension (see Figure 12). For example a C# is assigned a valency of 2, a *forte* has a valency of 4, a *staccato* articulation equals 2, and a quarter note duration correlates with a valency of 1.

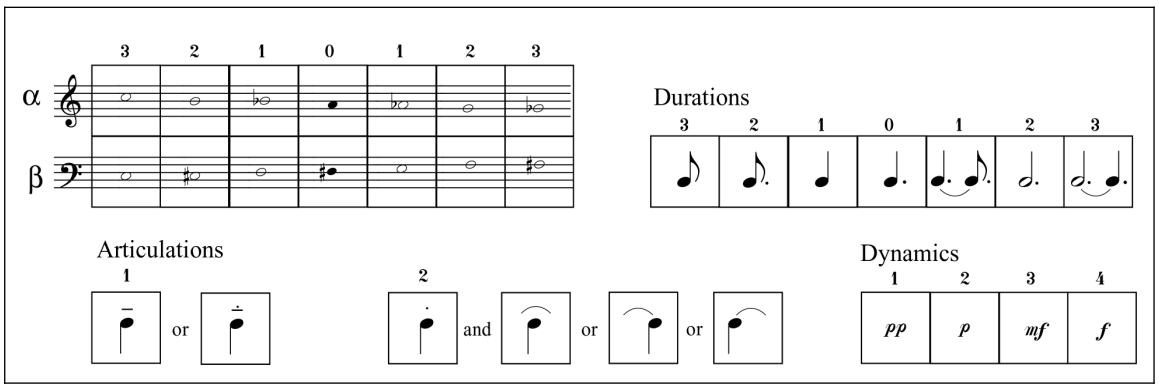

Figure 12: Valency Charts for Goeyvaerts's Opus 1

The synthetic number of each note in the score is found by adding up its four constituent valencies. Inspired by Le Corbusier's Modulor principle, Goeyvaerts sought to bind the musical notes through a single proportion. In the two inner movements of the sonata, his *law of the synthetic number* mandates all notes should have the synthetic number seven. The number seven creates a link uniting the notes of the two inner movements of the sonata on an abstract level, beyond any perceptual changes in pitch, duration, register, or intensity. The constant link becomes a cross, however, if one examines the effect of this imperative on the parameters that make up the inner sound dimensions.

With his Opus 1, Goeyvaerts had reached a completely new world in terms of composition theory. Richard Toop and Herman Sabbe point out some interactions between valency charts and musical structure.[570] They try to fathom the relation between this rotation-synthesis system and the resulting music—no doubt, Stockhausen would have had similar questions. How does this system interact with the music that results? Since pivot notes have a valency of 0, these notes will tend to become associated with high-valency durations—in other words, the shortest or longest durations. The concern is

[570] TOOP 1974, pp. 161–62; SABBE 1981, pp. 9–10

with balance: a central pitch gets an extreme duration. High-valency pitches are located at the extremes of the heptatonic set of pitch classes. Extreme pitches are assembled with central durations. The interaction between the four dimensions of each note is also characterized by the way in which the Belgian set up the valency charts. Pitches and durations are implicitly characterized as major dimensions, because both are created as analogs with a center and extremes to both sides. Articulation and dynamics have no center. Furthermore, articulation is limited to a valency of 1 or 2, thus lessening its overall weight in the synthetic number and freeing the dimension from the dictate of the synthetic number. The opposite is true for dynamics, as they outstrip even the extreme values of the pitch and duration valency charts. In the context of the present study, we have to forego a deeper investigation of the thought-provoking complexities between music and this elegant composition system of the inner sound, a system which one could characterize as 'essentially experimental'.

Stockhausen assisted Goeyvaerts in the performance of the second movement in the composition class of Adorno, who later compared the duo to 'Adrian Leverkühn and his famulus', the protagonists from *Doktor Faustus*. In fact it was famulus Stockhausen who explained and defended the composition system and its music; the Belgian's German was not good enough for the occasion. Goeyvaerts had hoped to meet Cage; instead he met Adorno—himself no stranger to dialectical thinking—who questioned Goeyvaerts's new composition system with the full power of his abrasive intellect. Meanwhile, twenty-two-year-old Stockhausen was five years Goeyvaerts's junior, but the latter had furnished him with the needed information in the past two weeks. A recording of the Sonata's performance by Stockhausen and Goeyvaerts during the Adorno seminar is extant, but I

am not aware of a recording of Stockhausen's word-by-word analysis in that seminar. Perhaps we are entitled to infer, from Stockhausen's later texts, that he was able to give a rather lucid and convincing presentation of the new system. Adorno made his composition seminar laugh by asking why the Sonata had been written for two pianos. He wanted to know about the antecedents, consequents, and motives in this sonata. Stockhausen, undeterred, replied 'Professor, you are looking for a chicken in an abstract painting.' This priceless moment of wit earned Stockhausen Goeyvaerts's friendship—and the potentially dangerous hostility of Adorno, who did not forget the affront and soon unleashed a polemic against the new abstract art of concrete sound.[571] The dispute continued over several years and symbolized the clash between the young and the old generation. Musicologist Heinz-Klaus Metzger took the side of the young composers in this debate and, by the later 1950s, Adorno had the magnanimity to admit to his inappropriate response.[572]

The Serial System

The increased attractiveness of comprehensive composition systems—as shown in the examples by Messiaen, Cage, Boulez, and Goeyvaerts—correlated with the increasing desire to leave corrupted traditions behind and start with a clean slate. In the grand scheme of music history, the Romantic era did not finish with Schoenberg but

[571] The polemic began in form of a 1954 Adorno lecture, broadcast by the Süddeutscher Rundfunk in 1954. Adorno described the above-mentioned scene and defended his criticism: "The critic cannot be reproached for not understanding these recent products of rampant rationalism, since according to their own program they are not to be understood but only to be demonstrated. Ask what is the function of some phenomenon within a work's total context of meaning, and the answer is a further exposition of the system." Theodor W. Adorno, "Das Altern der Neuen Musik," in *Dissonanzen: Musik in der verwalteten Welt* (Göttingen: Vandenhoeck & Ruprecht, 1956), p. 119.

[572] Adorno's caught up with the new aesthetic of post-war serialism. See Adorno, "Vers une musique informelle", in *Darmstädter Beiträge zur Neuen Musik* 4 (Mainz: Schott, 1962), expanded reprint in *Quasi una fantasia*, Musikalische Schriften II (Frankfurt: 1963), pp. 365–437.

rather with Webern. Its final collapse came in the post-war period with works in which composers attempted to minimize or, in extreme cases, remove their subjectivity from the creative process by devising systems meant to compose for them or, at a minimum, function as protection from too much irrational subjectivity. In this regard Cage worked tirelessly, but the desire is also apparent in works by Boulez, Goeyvaerts, Stockhausen, and others. They aimed to purify music and art from the excesses of late Romanticism. The aesthetics of numbers, pure geometric structures, and star constellations in the nocturnal sky were the answer to Wagner's aesthetics of the erotic drive in *Tannhäuser* or *Tristan and Isolde*. The music of the mind, well understood, freed the heart from the debris of traditions, associated with the worst of all imaginable worlds. Individual composers worked out quite different implementations of this general trend towards an *Ars Nova* of the twentieth century and the trend, therefore, does not suggest a lack of differences between Webern, Cage, Messiaen, Boulez, Stockhausen, Xenakis, and Ligeti.

On 26 June 1951 Goléa gave a presentation on 'The Situation of New Music in France' during which he also played recordings of Honegger's Fifth Symphony, Jolivet's Concerto for Piano and Orchestra, and Messiaen's *Quatre études de rythme.*[573] In the days following the lecture, Goeyvaerts and Stockhausen approached Goléa, asking for his permission to listen to the Messiaen recording:

> Karlheinz en ik beluisterden die plaat ergens in een hoekje, samen met Goléa. Zowel voor hem als voor mij was het de eerste kennismaking met dat zeer recente Messiaen-werk. Ik was immers reeds een jaar uit Parijs weg en Messiaen had er in zijn cursus nooit over gesproken. Wat ons geweldig trof was

[573] Andreas Meyer and Wilhelm Schlüter, "Chronik der Ferienkurse," in *Im Zenit der Moderne* (Freiburg: Rombach, 1997), pp. 513–638. Further references to dated Darmstadt concerts or lectures in the following pages are based on this work, the only authoritative source for comprehensive chronological information on the events at Darmstadt. Schlüter, a long term IMD collaborator with in-depth knowledge of the Darmstadt archives, reviewed the chronology compiled by Meyer. The information on Goléa's seminar is on p. 546.

> de “punctuele” stijl van *Mode de valeurs et d’intensités*. Er was onmiskenbaar een gelijkenis tussen dat stuk en mijn Sonate.[574]

This testimony directly contradicts the common assumption that Goeyvaerts knew *Mode* and was influenced by it when he composed his Sonata. Goeyvaerts’s first acquaintance with the work was in Darmstadt in 1951. Moreover, their discussion on the pointillism in Messiaen’s *Mode* and Goeyvaerts’s Sonata constituted the true origin of the term ‘punktuelle Musik’ which shook the German musical press one year later, in the summer of 1952, after a lecture by Herbert Eimert. Goléa contributes another important piece of historic information:

> ... je fis tourner la première fois, en présence de plusieurs jeunes élèves, parmi lesquels se trouvait Stockhausen, ..., le disque du *Mode de valeurs et d’intensités* que j’avais apporté avec moi de Paris. Je n’avais pas la partition, qui n’était pas encore sortie, ...[575]

Stockhausen and Goeyvaerts did *not* see a score of *Mode* while they were in Darmstadt in 1951. While Goléa is often known to be less than accurate in his historic data, his ability to recall whether he provided a score to Stockhausen and Goeyvaerts on that memorable occasion can hardly be doubted.[576] It stands to reason, moreover, that the two composers would not have listened to the recording twenty times in succession had they been able to study the score in all its details. They lacked information on the pre-compositional setup

[574] GOEVAERTS 1994, pp. 45–46. (“Karlheinz and myself listened to the record tucked away in some cubby-hole. Goléa was with us. For both Karlheinz and myself it was our first acquaintance with Messiaen’s most recent work. I had left Paris twelve months now, and Messiaen had never spoken about his work in his lectures. What struck us particularly was the ‘punctual’ style of the *Mode de valeurs et d’intensités*. There was an unmistakable similarity between that work and my Sonata.”) GOEYVAERTS 1983, pp. 55–56.

[575] GOLÉA 1960, p. 247. (“I played, for the first time, in the presence of several young students among which Stockhausen,..., the record *Mode de valeurs et d’intensités* which I had brought with me from Paris. I did not have the score, which had not been published yet, ...”)

[576] Christoph von Blumröder may have had access to other information. He writes: “Er ... leiht sich von Goléa die Partitur, ...” (“He ... borrows the score from Goléa, ...”) BLUMRÖDER 1993, p. 34. I cannot recall finding a single reference to this effect in a wide variety of primary and secondary source, but I may have overlooked something. I note, however, that Blumröder does not discuss the contradiction with the statement from Goléa, who after all was well placed to know about this alleged borrowing of a score.

of the piece, and were fascinated by its music alone. The Belgian must have been pleased with Messiaen's stylistic turnaround from his recent orgiastic style, because it would have confirmed his own change of mind towards Webern. Here he was confronted with a serial sounding piece, but its title indicated only a mode of durations and intensities, and did not mention pitch at all. Had Messiaen turned to pitch serialism? Goeyvaerts felt that *Mode* displayed a direct relationship with the pointillist style of his Sonata and noted "what became immediately clear [in Darmstadt 1951] was that serial thinking had caught on."[577] No doubt the issue of Messiaen's serialism became a fascinating discussion topic.

The episode of Stockhausen's encounter with Messiaen's *Mode* began its path to fame—almost attaining mythological qualities today—through its promotion in early texts of Goléa. Writing as early as 1954 Goléa elevated this encounter to a revelation of prophetic proportions.

> Je le vois encore, devant moi, à Darmstadt, en 1951: jeune terriblement, grand, blond, les yeux très bleus, penché, tendu sur un disque en train de tourner, écoutant la musique avec une attention sans défaillance, remettant dix fois, vingt fois au cours d'une journée la cire sur le pick-up. [...] Pour Stockhausen, cette étude ... eut ... l'importance d'une révélation. Elle lui montra la voie de cette exploration intégrale de l'univers sonore...[578]

The monolithic myth of *Mode* as the sole inspiration that drove Stockhausen to study with Messiaen in Paris is too simple a version of history in light of current knowledge,

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[577] GOEYVAERTS 1994, p. 45. Actually some musicologists, who did have the score of *Mode*, still spoke of the work as serial. This error is easily made if one fails to distinguish between scales, series, and modes. The fact that the pitch scale in *Mode* employs the full chromatic total suggests a serial work. It would be very hard to tell that *Mode* is not serial without a score.

[578] Antoine Goléa, "Deux portraits: I. Luigi Nono, II. Karlheinz Stockhausen," *Cahiers Renaud-Barrault* 2, 3 (1954), p. 113. "I still see him there, in Darmstadt 1951: awfully young, tall, blond, with very blue eyes, inclined, tensed over a turning record, listening with unfailing attention, putting the needle back on the record ten times, even twenty times, over the course of the day. [...] For Stockhausen this etude ... had... the importance of a revelation. It showed him the pathway to an integral exploration of the sounding universe."

and there is sufficient data in primary source materials to suggest a rather different course of events.

Goeyvaerts's autobiography occupies a unique position in this respect because—unlike our preferred source materials dating from the 1950s—his account was written in the 1983, and this may imply a certain distortion or a failure to recall important events. On the other hand, at present the letters of Goeyvaerts to Stockhausen from the early 1950s, which would have made information from the autobiography only of secondary interests, are missing. They may be found on some dusty attic in the future. These primary resources would surely make the relationship between Stockhausen and Goeyvaerts during these crucial forming years quite transparent. Since Goeyvaerts did not write much—and not much was written about him—the inclusion of the material from his autobiography is warranted despite its late redaction. Stockhausen's letters to Goeyvaerts are extant, and complete this review of their Darmstadt encounter and their ensuing relationship.[579]

Goeyvaerts gives a valuable hint about the time frame of their acquaintance. He and Stockhausen went to see Carl Orff's *Catulli Carmina*:

[579] The original letters are available at the Catholic University of Leuven, Belgium. See Mark Delaere and Diederik Verstraete, "The Artistic Legacy of Karel Goeyvaerts ," at *Universiteitsarchief Katholieke Universiteit Leuven, Belgiu*m, (<http://www.kuleuven.ac.be/archief/inv/Goeyvaerts/index.htm> accessed on August 2003), original document from July 2001. Copies are available at the Paul Sacher Foundation in Basel, Switzerland and at the Stockhausen Archives in Kürten, Germany. The letters have not been published, but many excerpts are scattered throughout Toop's articles, listed in my bibliography. Extensive portions were first quoted by SABBE 1981 and later by BLUMRÖDER 1993. Blumröder alleges Sabbe's transcriptions were so poor, that he was forced to work from the originals (and not quote from Sabbe's work). I found no significant differences between the texts; both have less than a handful errors. Sabbe's dating errors—and there are very few—occurred without support from any prior scholarly work, all the more embarrassing if one finds that Blumröder introduces his own dating errors (a letter from the Feast of Corpus Christi 1953 is dated as May 1953, when it should have been 4 June 1953). All of this is shadow boxing; both sources deliver reliable transcriptions. Kurtz's Stockhausen biography contains further excerpts. Toop and Kurtz quote in English, Sabbe and Blumröder in the original. Sabbe, Toop, Blumröder, and Decroupet have received their own copies of these letters.

> ... Karlheinz was niet te spreken over de liederlijke teksten en nog minder over Orffs realistische wijze om een orgasme te verklanken.[580]

Orff's work was performed on 22 June 1951, as a special concert of the IGNM festival.[581] It was the opening day of the Darmstadt Summer School. Participants probably arrived a day or two before the first day of activities and, apparently, Stockhausen and Goeyvaerts were friends from day one. Goeyvaerts recalled the communicative atmosphere of sharing in which "right from the first day we showed one another our manuscripts". Most people did not react enthusiastically to his ideas, except

> ... one young man who saw something in it [the synthetic number] and asked me more about it: Karlheinz Stockhausen. I can well recall how he tried to explain the 'geistliche Gründe' of my novel techniques to the others over lunch.[582]

Goeyvaerts recalled that Stockhausen knew the piece 'inside out' before he produced a 'penetrating analysis of part two' in Adorno's composition seminar. Adorno's impression of the relation between Stockhausen and the five-year older Goeyvaerts is crystallized in his metaphor, 'Leverkühn and his famulus'. Goeyvaerts confirmed the observation: "In his customary exuberance Stockhausen declared that henceforth, whenever asked with whom he had studied, he would mention only my name."[583]

A week after the end of the 1951 Summer School, Stockhausen voiced profound thanks to Goeyvaerts: "Du sollst… nicht denken, ich vergäße auch nur einen Tag, was in

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[580] GOEYVAERTS 1983, p. 57. ("...Karlheinz dismissed the obscene texts out of hand, while being ever firmer in his disapproval of Orff's lascivious musical portrayal of orgasm.") GOEYVAERTS 1994, p. 46

[581] GOEYVAERTS 1994, p. 46 and Gianmario Borio and Herman Danuser, eds., *Im Zenit der Moderne* (Freiburg: Rombach, 1997), vol. 3, p. 544.

[582] GOEYVAERTS 1994, p. 45. 'Geistliche Gründe' are metaphysical reasons. ("Slechts een jongeman zag er wat in en vroeg me dan ook verder uit: Karlheinz Stockhausen. Ik herinner me nog, hoe hij bij het middagmaal de "geistliche Gründe" van mijn nieuwsoortige technieken aan anderen wilde duidelijk maken.") GOEYVAERTS 1983, p. 54.

[583] GOEYVAERTS 1994, p. 45. ("In zijn voortvarendheid beweerde Stockhausen dat hij voortaan alleen mij zou vernoemen, wanneer iemand zou vragen bij wie hij gestudeerd had.") GOEYVAERTS 1983, p. 54.

den letzten Wochen in mir gewachsen ist—und warum es so werden konnte."[584] There is no mention of a *single* revelatory moment here; rather, Stockhausen referred to *weeks* during which Goeyvaerts discussed all types of musical issues with him—not merely his own Sonata for Two Pianos or Messiaen's latest piano etudes. They communicated in a mix of German and English. So what were their topics of discussion?

After Stockhausen finished his thesis on Bartók's Sonata for Two Pianos and Percussion (1937), he followed up on his first letter of acknowledgment to Goeyvaerts, and included an important clue: "Sie [die Arbeit] ist jetzt fertig, und alles, was ich nach Darmstadt schrieb, gehört zum guten Teil Dir…"[585] He referred to a thesis chapter on rhythm inserted after Darmstadt in which the concept 'interval of entry' is defined for the first time. (Here Stockhausen still uses 'duration' to designate the time interval between two successive notes—with or without intervening silence—and 'length' to designate the actual sounding portion of a note.) This concept, fundamental to pointillism, provides the intellectual tool to coordinate sound and silence within an isolated unit of rhythmic construction.[586] How did Goeyvaerts come to teach Stockhausen about this concept? This goes to the heart of the true significance of their Darmstadt encounter. We enter the world that allowed Goeyvaerts to break free from his own stylistic endorsement of neo-classicism: his friendship with Barraqué and other members of his Parisian circles as well

[584] Stockhausen, letter to Goeyvaerts, 17 July 1951. Quoted from BLUMRÖDER 1993, p. 39. ("Do not think that even for one day I forget what has grown in me over the past few weeks—and why this could come about."); my translation. A variant translation is offered in Toop, "Stockhausen and the Sine-Wave", p. 381: "(But you shouldn't think that I have forgotten, even for one day, what is being re-opened within me—and how it came to be so.)" The word 're-opened' suggests Stockhausen rediscovered something. I cannot detect this meaning in the German text. Toop saw the complete letter and the passage in context.

[585] Stockhausen, letter to Goeyvaerts, 30 July 1951. Quoted from BLUMRÖDER 1993, p. 40. "It [the thesis] is now finished and everything I wrote after Darmstadt belongs for a good part to you."

[586] Note that Messiaen's *Mode* does not make use of silences at all. Its pointillism is achieved through the desire to avoid all chord formation by maintaining a strict linear writing as well as its gamut, which emphasizes maximal timbre differentiation.

as his encounter with Cage, his study of Webern, and his knowledge of Messiaen's theories. Two ultimate sources for the new concept of 'interval of entry' can be determined. While thinking in additive rhythm was Messiaen's most revolutionary innovation in rhythmic theory, Cage had posited the equality of sound and silence within his rational square-root form. Pointillism telescopes Messiaen's and Cage's ways of thinking into the new concept 'interval of entry': it is a small time container, thought prior to sound or silence. This thinking opened a wide arena for speculation and experimentation.

The Paris circle of friends—which comprised members of Messiaen's *flèches* and certain newcomers, such as Barraqué, Goeyvaerts, Fano, Hodeir, and Philippot—was most certainly aware of Boulez's intense friendship with Cage. The friends discussed many issues and, in those days, many new musical ideas circulated between them, not least Schaeffer's latest experiments in concrete music, which had been presented in March 1950. About the same time, the publication of Cage's universal theory of music was studied closely by everyone in the group, including Goeyvaerts who had been deeply impressed by the performance of his *Sonatas and Interludes*. Cage communicated directly with Parisian musicians, intellectuals, and poets, such as Gatti, Grimaud, and Souvtchinsky, while Boulez communicated directly with Copland, Feldman, Wolff, and other Americans from the New York circles. This is symptomatic of the sprawling transatlantic contacts.

Right after the end of the Darmstadt Summer School, Goeyvaerts traveled to Paris, where Grimaud and Helffer had been practicing his Sonata for Two Pianos for several weeks. Above we have pinpointed the composition of *Structures Ia* and Boulez's first

class on his Second Sonata to the spring of 1951. Due to Boulez's class, Barraqué and Fano became his friends and it would have been absolutely natural for Boulez to show them his *Structures Ia* or his work on *Polyphonie X*. Grimaud likely always was informed about Goeyvaerts's and Boulez's projects. A wide arena of speculations may open about who had influenced whom in what aspect. The line of influence extends from Cage, Messiaen, Boulez, and Goeyvaerts to Stockhausen, who for the first time became exposed to these combined worlds of musical thinking through his three week encounter with Goeyvaerts at Darmstadt in 1951.

Stockhausen did not know where Goeyvaerts had collected all these brilliant theories about music and the latter certainly introduced his idiosyncratic reading and personal synthesis into all of them, but here lies the key to understand Stockhausen's decision to go to Paris, which was made right during the summer school. Goeyvaerts introduced Stockhausen to more than his own Sonata with its elegant composition system or Messiaen's musical language. He let Stockhausen know about his friends Barraqué, Grimaud, Loriod, the enigmatic Boulez in his hideout attic, the American Cage and his prepared piano, as well as his teachers Milhaud, Messiaen, and Rivier. Later he recalled "I probably waxed too enthusiastic about my Paris circle, because Karlheinz became convinced that all salvation came from that quarter."[587] Before his encounter with Goeyvaerts, Stockhausen had been isolated in Cologne; now, for the first time, he had come in contact with the center of the musical avant-gardes, the Parisian confluence.

[587] GOEYVAERTS 1994, p. 45. ("Waarschijnlijk had ik met al te veel enthousiasme over mijn Parijse kring gesproken, want Karlheinz stelde zich voor dat alleen van daar alle heil te verwachten was.") GOEYVAERTS 1983, p. 55.

No doubt Messiaen's *Mode* had a powerful and lasting effect on Stockhausen. It inspired in him the pure music of the spheres and featured a 'Zen' quality, from which all subjective impurities had been cleansed. This became an aesthetic ideal for pointillist timbre music: each sound exists in its original genuine beauty, but behind the surface one senses a basic force that holds together the disparate phenomena. It was impossible, however, to understand Messiaen's composition system merely by listening; likewise, the composition system was of prime importance for Stockhausen. Goeyvaerts, on the other hand, opened his workshop and taught him a composition system that set out from a single idea and realized music through a series of small and logical steps. Once idea and preparations were set up, the realization unfolded without needing further input from human emotion. Moving to the extreme opposite of Romanticism, human emotion had became disgusting and abject. The lesson of Goeyvaerts could not have been more important to Stockhausen's path as a composer, as close reading of the following testimony from a letter to Luigi Nono will reveal:

> Bei ihm [Goeyvaerts] ist es mir zum ersten Mal begegnet, daß wirklich *eine* Idee, *eine* totale Vorstellung alle Materialdimensionen *notwendig* auswählt, bestimmt, einsetzt, aushört—daß der Schreibende nur noch die Funktion des Ausführens, des Dienens hat und vollkommen unprometheisch, unfaustisch, unpersönlich wird—wenn Du willst: unmenschlich, so, wie seine Musik immer unmenschlicher, immer reiner wird, immer effektloser, toter, künstlicher, transzendenter. Wirkliche Schönheit findet sich da ein; wenn man bereit ist, sie anzunehmen, wird man ihr begegnen.[588]

[588] Stockhausen, letter to Nono, 20 March 1952. (Archivio Luigi Nono Venezia). Quoted from Borio and Danuser, eds., *Im Zenit*, vol. 1, p. 304. ("With him [Goeyvaerts] I encountered for the first time, that *one* idea, a *single* total concept really selects all dimensions of the material by *necessity*, determines, places, listens-to-the-end—that the writer merely retains the function of executioner, of serving, that he turns completely un-promethean, un-faustian, impersonal—if you like: inhuman, just as his music becomes ever more inhuman, purer, more stripped of effects, more dead, artificial, transcendental. There, true beauty comes to exist; if one is ready to receive, one will encounter her.")

Hence, at one point around 1951, the aesthetics of Cage, Boulez, Goeyvaerts, and Stockhausen converged. While Stockhausen received the same 'message' from the music of *Mode*, Messiaen's own aesthetics, when he wrote the music, were distinctly under the influence of Cage. Messiaen reacted to hearing Cage's music, an experience he had likened to the moment when he first discovered Hindu rhythms and Carngadeva's rhythmic theory. Originally, *La Jeune France* had sought to bring back the human element to music—occupying the opposite pole of the aim to remove all subjectivity and showing how far Messiaen had come from his origins, to follow the lead of Cage and Boulez.[589] Nevertheless, Stockhausen's letter to Nono unmistakably shows that the spiritual message of importance did *not* come from Messiaen. Neither did it come from Hesse: when Stockhausen suggested a resemblance between Goeyvaerts's composition system and Hesse's *Glass Bead Game*, the Belgian protested, since "Hesse [was] dealing with an image of human knowledge and not with something as intangible as the trace of a mode of existence—without time and space."[590] In the end Stockhausen had conceded that Heidegger's world of philosophical thought better applied to their new music than Hesse's utopia. Nearly one year after they first met, Stockhausen was still very much aware of the momentous change in his life:

> Noch nicht ein Jahr kennen wir uns—und mir ist es doch, als sei es ein ganzes Leben gewesen, so erfüllt war diese Zeit. Manchmal ist es mir, als hätten wir uns in Worten immer weniger zu sagen: so sehr bin ich in Deiner Botschaft oder in Deiner Vermittlung der Botschaft aufgegangen, und sie wohnt mir tief im Herzen.[591]

[589] Later Messiaen remarked that he composed *Mode* for didactic reasons. I suggest he was in fact in a *very* anguished mood when he wrote the work, and did not at all have didactical reasons in mind. This is borne out by the late publication of the work and the fact that Messiaen discussed the work in class for the first time *three years* after its composition. Messiaen ventured far into experimental terrain in 1949.

[590] Karel Goeyvaerts, letter to Michael Kurtz, undated. Quoted from Kurtz, *Stockhausen*, p. 35.

Although Goeyvaerts's letters to Stockhausen are missing, we know that both composers were Christian mystics during this period. Stockhausen received the message that music only can be an image of Divine perfection if it is through-organized in all its dimensions. Human intervention in the composition process was equivalent to seeking gratification for the self and avoiding the truth. The ascetic task, rather, was to break free from the impurities of the subjective and to make oneself ready for a faithful translation of the law of *harmonia mundi*. The spiritual function of new music would bring about a state of meditative hearing:

> Man kann an dem Wesen der jüngsten Musik erkennen, daß sich eine Umorientierung vom Wunsch-Hören zum meditativen Hören vollziehen wird, einbezogen in die allgemein geistige Wandlung vom überspitzt Individualistischen zum Persönlich-Kollektieven.[592]

Philosophically, Stockhausen and Goeyvaerts agreed in their evaluation of the *Zeitgeist*. In July 1952, Goeyvaerts wrote an article on Messiaen that showed his appreciation for the latest Messiaen and, by implication, perhaps also Goeyvaerts's lack of interest his prior works such as the *Turangalîla* Symphony:

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[591] ("We haven't even known each other for a year—and yet, I feel as if it had been a whole life, so fulfilled this period has been. Sometimes I feel as if we needed to speak less and less to each other in words: this much I have grown in your Message, or in your Transmission of the Message, and it lives deep in my heart." Quoted from BLUMRÖDER 1993, p. 73.

[592] ("Music today is consumed in wish-concerts. Listening has become a listening according to wish. A music without substance, towards which human wishes could be directed (of course one does not wish for just any old thing, but rather for something in particular), will remain unheard until wish-listening turns into meditative listening. This is a feasible result of self-discipline.

One can discern in the essence of the newest music that a reorientation from wish-listening to meditative listening will come to pass, incorporated into the general spiritual transformation from the exaggeratedly individualistic to the personal-collective.") Stockhausen, "Situation des Handwerks: Kriterien der punktuellen Musik", p. 17. This text was written in December 1952 for the first issue of a Belgian new music journal planned by Souris and Froidebise. The journal project failed, but Stockhausen's text did circulate in the circles of the avant-garde and caused reactions. Boulez, for example, alludes to Stockhausen and Goeyvaerts when he warns of 'religious respect for numbers' and of 'confusing organization with composition'. Pierre Boulez, "'...Auprès et au loin'," *Cahiers de la compagnie Madeleine Renaud-Jean Louis Barraul*t 2, 3 (1954), 7–27, quoted from *Points de repère 1* (1995), p. 314.

> Der wirkliche Messiaen, wie er sich in seinen letzten Werken zeigt, ..., ist also in die Evolution unserer Zeit eingeschaltet ..., die sich von dem Individuellen in das Kollektivistische, von der aktiven in die passive Geisteshaltung, von dynamischen in statische Strukturen umgewandelt hat.[593]

'Dynamic' music, according to Stockhausen and Goeyvaerts, was associated with the Romantic era, with development, changing emotional states, individualism, exaggerated cult of the person, belief in man rather than God, and the music of Mahler, Wagner, and other Romantics. The Zeitgeist of the 1950s demanded a complete overhaul of the musical language based on a new approach to life, which placed a higher value on the collective than on the personal. The active avoidance of melody, harmony, and development in static music was intended to facilitate the new kind of meditative listening, a Zen-like state of inner silence and an opening towards the beauty of all creation. The most profound truth can only come to the fore when the subjective becomes quiet and lets in the constant flux of pure existence. They perceived parallels to the philosophy of Heidegger and sought to write a 'pure music of existence': "Die Sprache: das ist das Sein selbst, das ist als eine unvorstellende die Wahrheit."[594] A short excerpt from Heidegger's *The Origin of the Work of Art* illustrates what might have fascinated the composers:

> Language, by naming beings for the first time, first brings beings to word and to appearance. Only this naming nominates beings *to* their Being *from out of* their Being. Such saying is a projecting of lighting, in which announcement is made of what it is that beings come into the open *as*. Projecting is the release of a throw by which unconcealedness submits and infuses itself into beings as such.

[593] ("The real Messiaen, as revealed to us in his last work, ..., takes part in our evolution, which transforms the Individual into the Collective, the active to a passive state of mind, and dynamic to static structures.") Karel Goeyvaerts, "Evolution eines Komponisten. Olivier Messiaen — 1952 gesehen", *Darmstädter Echo* (22 July 1952), quoted from Borio and Danuser, eds. *Im Zenit*, vol. 3, p. 473.

[594] Stockhausen, letter to Goeyvaerts, 10 August 1951. Quoted from SABBE 1981, pp. 82–83 "The [our] language: that is existence itself, an *unvorstellende* [non-representational/representing] truth."

> This projective announcement forthwith becomes a renunciation of all the dim confusion in which a being veils and withdraws itself.[595]

Thus, the act of writing music becomes an original creation in the deepest, most absolute sense. Early work introductions by Stockhausen were so philosophical and cryptic that some of them were censured. For *Schlagquartett*, Stockhausen envisioned "[t]wo beings, having set out from a state beyond the physically demonstrable and perceptible" who "reach a temporally and spatially defined field"... at which point the music begins! In the music of *Schlagquartett* Stockhausen shows how those spiritual 'beings' gradually unite to give birth to another being, which carries the mark of both 'parents'. This portray of a process of birth celebrates life and was designed to facilitate a passive, meditative listening experience.[596] Eimert, to Stockhausen's dismay, censured large portions of his introduction to *Kreuzspiel* before its May 1952 broadcast premiere.[597] The purpose of these introductions was, of course, to alert the public to the spiritual function of this new musical language. The hoped-for passivity of a meditative audience, however, did not materialize. Almost each of Stockhausen's early concerts ended in scandals and uproars.

THE FIRST ENCOUNTER WITH ANTON WEBERN

Stockhausen's early encounter with Webern and the level of his familiarity with the music of Webern has long been a contentious issue among scholars. While Stockhausen maintains Webern as his major forerunner, some authors suggested that he might have

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[595] Martin Heidegger, "The Origin of the Work of Art," in *Basic Writings from Being and Time to the Task of Thinkin*g, Edited by David Farrel Krell (New York: Harper & Row, 1977), p. 185.

[596] See Karlheinz Stockhausen, "[Introduction to] Schlagquartett," (1 November 1952), quoted from *Texte* 2 (1964), pp. 13–18. The work was written from early May to early June 1952 and shows Stockhausen closeness to Goeyvaerts in many of its aspects. See also fn. Fehler: Verweis nicht gefunden.

[597] "Daß meine Einführung recht technisch war, lag an Herrn Dr. Eimert. Er hat alles gestrichen, was ich sonst sagen wollte." Quoted from BLUMRÖDER 1993, p. 171. ("The technical character of my introduction is due to Dr. Eimert. He stroke out everything else I intended to say.")

had ‘no significant’ knowledge of Webern by June 1953.[598] Considering the musical environment in Paris and Goeyvaerts’s clear focus on the music of Webern, starting with the introduction to his new composition system *as being based on Webern*, the assertion that Stockhausen had only a ‘vague’ knowledge of Webern is surprising: Blumröder even cites a long list of erroneous, previous Webern chronologies. Their argument may have been based on too hasty an interpretation of Stockhausen’s following remark in a letter to Goeyvaerts:

> Kennst Du das Konzert op. 24? Ich zeige nur den 1. Satz und auch nur das Wesentliche daraus. Es ist ungeheuer, was Webern vorausgeahnt hat. Ich begreife das erst jetzt, wo ich seine Musik *allmählich genau* kennen lerne (alle editierten [sic] Werke besitze ich seit 4 Wochen und bin glücklich, abends darin lesen zu können).[599]

The background to this remark was that Stockhausen had received all of Webern’s works from the publisher—meaning both published *and* unpublished ones—in exchange for signing his first composition *Kontra-Punkte* with Universal Edition. The complete works of Webern arrived at Stockhausen’s home around the end of June 1953. In retrospect one can only express amazement that Alfred Schlee from Universal Edition included hitherto unpublished manuscripts.

At this point in music history, Stockhausen may have been the only person on earth to have access to all works by Webern. It appears that the error was generated by giving a too uninspired, flat interpretation to the words “I’m only understanding that now...”, concluding that therefore Stockhausen must only have had a ‘vague idea’ about Webern

[598] See for example: SABBE 1981, p. 70 and BLUMRÖDER 1993, pp. 76–77.

[599] Stockhausen, letter to Goeyvaerts, 20 July 1953. SABBE 1981, p. 70; BLUMRÖDER 1993, p. 78. (“Do you know the Concerto, op. 24? I show only the first movement and there, only the essential. It’s uncanny what Webern sensed in advance—I’m only understanding that now that I’m gradually getting to know his music in detail (For 4 weeks now, I own all edited scores and I am happy that I can study them in the evenings)”)

prior to June 1953. A more careful interpretation of the letter suggests that Stockhausen referred to new levels of in-depth understanding, which by far would have transcended the understanding gained from an analysis of one or two works. This is why Stockhausen used the words '*allmählich genau*' ('gradually in detail') to describe the progress of his day-by-day Webern study. With Stockhausen's analytic skills and such privileged access to Webern scores, after one month of study, Stockhausen could very well have been the reigning Webern specialist on a global scale by late July 1953.

This interpretation is corroborated by Stockhausen's many documented contacts with Webern's music prior to June 1953. His close contact with Boulez and Goeyvaerts alone would make certain that his idea of Webern advanced very rapidly. How much exposure to Webern's scores or music would Stockhausen have needed to grasp the essentials of Webern's style? The concise summary of Stockhausen's recorded Webern encounters over the period 1951–53—some repetitions with information given above included—will show that the idea that Stockhausen could only have had a 'vague idea' by June 1953 is unrealistic.[600] Here, in short, are the essential facts.

On 22 August 1950, one of his Cologne student friends presented Stockhausen with a miniature score of Webern's Five movements for string quartet, op. 5, as birthday gift, and since 1950 Stockhausen had a 'vague idea' about the music of Webern. When Goeyvaerts introduced Stockhausen to his new composition system in Darmstadt 1951, he also provided him with an introduction to the music of Webern's late period, and in particular Webern's Piano Variations, op. 27. During this Darmstadt Summer School of 1951 Stockhausen come in contact with Webern's music in a comprehensive way: on 4

[600] The chronological data and the relevant citations are included in the appendix "Stockhausen's Webern chronology."

July Adorno lectured on Webern, followed by the German premiere of Webern's Five Canons, op. 16, in the evening, and on 10 July Webern's Piano Variations were heard in the Eimert and Steinecke discussion on new music. By the end of the Darmstadt Summer School of 1951, Stockhausen had already a better idea of Webern's music.

In one of his first letters after returning from Darmstadt, Stockhausen asked Goeyvaerts to send him a copy of Webern's Piano Variations. It is not clear if the Belgian did him the favor. However, traveling from Hamburg to Paris in early January 1952, Stockhausen spend about a week with Goeyvaerts in Belgium. During the week they had ample time to discuss all musical matters, including Webern. They would have discussed Leibowitz's books, Goeyvaerts's manually copied Webern scores, as well as his analysis of some of those works. In Paris, as early as February 1952, Stockhausen and Boulez became friends, talking for hours about 'everything under the sun', including Webern. Their encounters continued through the month of March 1953; Stockhausen is on record returning Webern scores to Boulez prior to his departure from Paris. He is also on record stating that he copied several Webern scores during his time in Paris and in July 1952, Webern's Vier Lieder op. 12 were heard at Darmstadt. Stockhausen wrote his first Webern analysis on the Concerto for Nine Instruments, op. 24, in February 1953, while still living in Paris. In the same month, Messiaen analyzed in his class Webern's Four Pieces for Violin and Piano, op. 7, Stockhausen being present. One month later, he described the Four Pieces in his 'Arbeitsbericht 1952/53'.[601] In the spring, returning to Germany, he promoted Webern at the Cologne radio, and this led to a broadcast of the

[601] See Karlheinz Stockhausen, "Arbeitsbericht 1952/53: Orientierung," (Hamburg) (April 1953), quoted from *Texte* 1 (1963), p. 36 and compare with Magdeleine Martin's account of Messiaen's analysis; BOIVIN 1995, pp. 314–15.

Concerto, op. 24, in April 1953. In May 1953 the 'Saxophone' Quartet, op. 22, was heard at the *Musik der Zeit* concert in Cologne.

In short, given the above-mentioned facts of Stockhausen's *documented* exposure to Webern prior to June 1953, the flat interpretation of Stockhausen's letter, suggesting he only had a vague idea of Webern's music by that time, is highly improbable and should be laid to rest. We must now turn to complete the path to pointillism—a term designed to capture the fascination with Webern and timbre composition, introduced by the summer of 1952.

Upon his return from Darmstadt, Stockhausen finished his thesis and immediately began working on *Kreuzspiel*. Initially he planned it as *Mosaike* for high voice and piano but, a little later, he introduced an additional low voice and, finally, he scored the work for two wind instruments, piano, and percussion. Stockhausen employed Goeyvaerts's new composition system in an idiosyncratic manner. He did not use the pivot note system and thus worked with twelve rather than fourteen pitch classes. Goeyvaerts rotated only five notes from each heptatonic set, because his pivot notes remained fixed in their register. In *Kreuzspiel* all twelve notes participated in the rotation, necessitating twelve phases before one register rotation is complete. The first movement is in X timbre form, just as Goeyvaerts's Sonata. The pitches enter from the extreme registers, high and low, in the first phase. Gradually they rotate their way towards the middle registers of the piano, which they reach by the sixth phase. The timbre form is more transparent to the listener, because the wind instruments can't reach the extreme registers of the piano so they don't participate in the beginning and end phases. In addition, Stockhausen employed a percussion layer, which results in a dialectical opposition between pitch and

noise. This is Stockhausen's particular input, as this opposition is not present in the models of Goeyvaerts or Messiaen. Stockhausen used the synthetic number in a slightly different way. Timbres are fixed in their dimensions by pitch class. Occurrences of timbres with pitch class *g*, for example, are associated with an eighth note duration and a *forte* dynamic throughout. This brought Stockhausen's piece closer to Messiaen's *Mode* than to Goeyvaerts's Sonata.[602] It is not clear whether Stockhausen also chose seven as his synthetic number. Clearly he omitted the pitch dimension from the calculation:

> Mir ist noch nicht ganz klar, ob ich die Tonhöhe mit in die synthetische Zahl einbeziehe, da sie durch das Formprinzip schon vollständig erfasst ist und kein Zentralton da ist; sodaß also auch die jeweilige Tonhöhe keine dynamische Grösse ist, weil sie sich nicht auf ein Tonzentrum bezieht.[603]

The law of the synthetic number for *Kreuzspiel* can be formulated as follows: the shorter a note, the louder it will be and vice versa. As in Goeyvaerts's Sonata, articulation plays only a secondary role. *Kreuzspiel* has been discussed fairly often, so I do not need to go into more detail here.[604] I merely wish to point out that Stockhausen's way of applying

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[602] Goeyvaerts traveled to Paris right from Darmstadt. There he participated in the premiere of his Sonata by Helffer and Grimaud. Stockhausen had asked Goeyvaerts to find out what was needed for him to study with Messiaen and Milhaud. Goeyvaerts might have spoken about *Mode* to Messiaen on that occasion about Stockhausen's fascination with the music. It thus would not be impossible that, in his next letter to Stockhausen, he communicated the pre-compositional ordering of *Mode*, well in time to influence the composition technique of *Kreuzspiel*. The return letters of Stockhausen to Goeyvaerts, however, contain no hint about such a revelation. I therefore would discount this course of events: any apparent direct influence of *Mode* on *Kreuzspiel* is based on Stockhausen's auditory analysis.

[603] "I am not entirely decided if I will include pitch in the synthetic number, because pitch is already completely integrated through the form principle and there is no pivot tone; and therefore pitch is also not a dynamic magnitude, because unrelated to a tonal center." Stockhausen, letter to Goeyvaerts, 10 August 1951. Quoted from SABBE 1981, pp. 80–81.

[604] Philip K. Bracanin, "The Abstract System as Compositional Matrix: An Examination of Some Applications by Nono, Boulez, and Stockhausen," *Studies in Music* 5 (1971): 90–114; Max Eugen Keller, "Gehörte und komponierte Struktur in Stockhausens 'Kreuzspiel'," *Melos* 39 (1972): 10–18; Jürgen Stenzl, "Karlheinz Stockhausens Kreuzspiel (1951)," *Zeitschrift für Musiktheorie* 3, 1 (1972): 35–42; TOOP 1974; Jonathan Harvey, *The Music of Stockhausen* (London: Faber, 1975); BLUMRÖDER 1993, pp. 44–69; and Hartmuth Kinzler, "Viereinhalb Marginalien zum ersten Stadium von Stockhausens 'Kreuzspiel'," *Musiktheorie* 12, 1 (1997): 71–86 discuss the first stage of the work; the second stage is discussed briefly in Jerome Kohl, "Serial and Non-Serial Techniques in the Music of Karlheinz Stockhausen from 1962-1968" (Ph.D. diss., University of Washington, 1981), pp. 18–19; as far as I am aware, the third stage has never been discussed in print.

the principles of Goeyvaerts's composition system showed already the underlying, essentially experimental spirit of extended serialism: Stockhausen did not use the system as a technique; rather, he applied its spirit. This became an integral part of the composition; each composition had a need to generate its own system.

The original name of the composition, *Mosaike*, suggests that Stockhausen's aesthetic was already singularly focused on timbre composition. Prior to his Darmstadt encounter with Goeyvaerts, Stockhausen followed Schoenberg's method of composition. In the closing paragraphs of his *Harmonielehre*, Schoenberg had expressed the hope that one day one might discover ways to formulate logical sequences in other dimensions of timbre than pitch.[605] Alternatively Stockhausen may have become aware of the new trend in serial timbre composition through Eimert. Above I gave the synopsis of a *Musikalisches Nachtprogramm* which Stockhausen must have attended and in which Eimert described the latest music of Boulez, Nono, Jolivet, and Goeyvaerts as 'timbre-paintings'.[606] In *Kreuzspiel*—a radical stylistic change from his previous works—Stockhausen already conceived of his music in this new way. Timbre assumed a primary function and all remnants of the old musical syntax—we recall Adorno's question about motives and antecedents—are blown away. In this context, the originally chosen title *Mosaike* forms an aesthetic program, characteristic of the first works of pointillist music.

[605] "Die Klanghöhe ist also nichts anderes als Klangfarbe, gemessen in einer Richtung. Ist es nun möglich, aus Klangfarben, die sich der Höhe nach unterscheiden, Gebilde entstehen zu lassen, die wir Melodien nennen, ... , dann muß es auch möglich sein, aus den Klangfarben der anderen Dimensionen, aus dem, was wir schlechtweg Klangfarbe nennen, solche Folgen herzustellen, deren Beziehung untereinander mit einer Art Logik wirkt..." Arnold Schoenberg, *Harmonielehr*e (Wien: Universal-Edition, 1922), pp. 507–8.

[606] See page 333. In 1960 Stockhausen recalled that Boulez's *Le Soleil des eaux* was one of the most lasting impressions on him during the Darmstadt 1951 Summer School. Wörner, *Stockhausen: Life and Work*, p. 252. *Le Soleil des eaux* was one of the examples given during the scripted discussion between Eimert and Steinecke. In addition, three *Nachtprogramm* broadcasts between October and December 1951 may have become important in this phase: 'Die Klangwelt der elektronischen Musik', 'Neue Synthese in der Zwölfton Musik', and 'Zur Situation jüngerer deutscher Komponisten'.

The composer's attention is directed to the microscopic level of sound-points, combined with a global idea about a macrostructural timbre process. Stockhausen later confirmed that *Kreuzspiel* for him was a key work:

> J'y suis allé [à Paris], au début de 1952, juste après avoir écrit ma première composition, *Kreuzspiel*, qu'aujourd'hui je ne joue plus et que je n'ai pas publiée, mais [qui demeure] la source de mon travail [actuel].[607]

Kreuzspiel remained Stockhausen's 'No. 1' until 1953. He distanced himself from the work after its Darmstadt 1952 premiere caused a terrible scandal. The quotation above, from 1958, shows him having made his peace with *Kreuzspiel*. It comes just one year prior to the final release of the score in 1959.

Pointillism

A musical style in which notes predominantly are kept in isolation from each other is called 'pointillism'. Pointillist effects can be reached in a variety of ways and, in general, it does not relate to any one method of composition. However, for a brief but significant historic period during the early 1950s, pointillism became associated with post-war extended serialism. At that time, the music of Webern's late period—which had been eloquently described by Leibowitz in *Schoenberg and His School*—was adopted as the aesthetic ideal by a number of composers. The term pointillism, however, goes back to the world premiere of Webern's Symphony on 18 December 1929 in New York. The League of Composers had commissioned the work. Their program note for the world premiere introduced the new work as 'a sort of tonal pointilism [*sic*]', which had been

[607] ("I did go [to Paris], just after having written my first composition, *Kreuzspiel*, which I do not perform now and which is not published, but [which remains] the source of my [current] work.")
Remarks collected by Maryvonne Kendergi for the broadcast Festivals européens broadcast on 15 December 1958 (archives sonores de la radio française de Radio-Canada); quoted from BOIVIN 1995, pp. 360–61.

composed of 'differentials' and 'tonal fractions'. A critic reminds us of the scandal one of the finest works of abstract musical art caused in 1929:

> 'The Ultimate Significance of Nothing'—this would be the proper title of the piece. The audience laughed it out of court, ... [t]he yells of laughter that came from all over the hall nearly drowned the sounds of Webern's whimpering orchestra.[608]

Twenty years later the situation had changed dramatically. The 'whimpering orchestra' became the reigning aesthetic ideal of the post-war period. By the summer of 1951, Steinecke posited that "the existence of Webern's oeuvre is more real that that of film music, which is listened to by 80 million people".[609] Discussing the latest trends in new music, Eimert and Steinecke had mentioned a new, still nameless musical style, which resulted in music that Eimert characterized as 'timbre-paintings'. It would take one more year before the terms 'pointillism' and 'pointillist music' spread like wildfire through the German press in the summer of 1952.

Leibowitz, writing in the early 1940s, had described Webern's pointillism in comprehensive and conscious terms (see page 58), but did not propose to use the term pointillism. The critic who compared Cage's music for the prepared piano with the music of Webern in 1944 did not have the term pointillism at his disposal either. *Mode de valeurs et d'intensités* was first recorded in North Africa in late 1950, and I have no knowledge of a review that describes this music as pointillism.[610] Thus the recorded history of term coinage begins in Darmstadt 1951 and Goeyvaerts's report of a discussion between Stockhausen and himself about the 'punctual' style of *Mode* and its similarity

[608] Olin Downes writing in the New York Times of 19 December 1929. Quoted from Nicolas Slonimsky, *Lexicon of Musical Invective: Critical Assaults on Composers since Beethoven's Tim*e (Seattle: University of Washington Press, 1965), p. 250.

[609] "...die Existenz des Webernschen Werkes [ist] realer als diejenige der Filmmusik, die von 80 Millionen Menschen gehört [wird], ..." Steinecke and Eimert, "Ist die Musik am Ende?", p. 350.

[610] I could not locate exact information on the recording date; some authors suggest 1951.

with Goeyvaerts's Sonata.[611] Stockhausen in 1960 recalled a conversation with Eimert in the fall of 1951, after they had listened to a recording of Messiaen's *Mode.* During the summer school Stockhausen had likened *Mode* to the 'fantastic music of the stars', and now Eimert called it pointillist music.[612] By 1960 Stockhausen had repressed some of the memories concerning his earliest encounters with Goeyvaerts, because their friendship became more distant in 1953 and 1954. On the other hand, we saw that Eimert and Goeyvaerts had a good relationship early on, and it is thus not at all unlikely that the Belgian discussed with Eimert the 'punctual style' of *Mode* in Darmstadt 1951. Nor did Eimert leave behind very distinct memories of the term's coinage which, in my eyes, makes Goeyvaerts its ever more likely source. Stockhausen provided another alternative in 1967, when he recalled that Eimert first used the term when Stockhausen showed him the score of *Kreuzspiel*.[613] This should not be misread as a reproach to Stockhausen of doctoring history. It is not the composer's task to do musicological research or to recall every anecdote in its exact historical sequence, often many decades after the events. The differing versions of term coinage simply illustrate the necessity of researching primary sources wherever available. In Stockhausen's published texts and interviews, his memories tend to displace the importance of the Darmstadt learning experience with his

[611] See page 342. His recollections were made at a late stage in his life, but they are a record of history.

[612] The episode is reported in Wörner, *Karlheinz Stockhausen*, p. 49 and Wörner, *Stockhausen: Life and Work*, pp. 80–81. Wörner's monograph, based on his taped 1960 interviews with the composer, contains Stockhausen earliest published account of term coinage.

[613] Ursula Stürzbecher, *Werkstattgespräche mit Komponisten* (Köln: Gerig, 1971), p. 58. Based on Stockhausen's letters to Goeyvaerts this particular meeting can be dated between 5 and 23 November of 1951. On 5 November Stockhausen reported the completion of his *Kreuzspiel* score: "Es ist getan seit ein paar Stunden." Quoted from SABBE 1981, p. 19. ("It has been completed a couple of hours ago.") On 23 November he reported on Eimert's negative reaction to *Kreuzspiel*: "Ich müßte 20 Jahre Geduld haben, wenn ich solche Musik machte, wie ich sie machen muß." Quoted from BLUMRÖDER 1993, p. 72 ("I would have to wait 20 years [for a performance], making such music as I feel I must.") Note that within a week or two after 23 November, Strobel offered Stockhausen his first comission for an orchestral work [*Spiel*, Donaueschingen 1952]. Eimert, perhaps impressed by Strobel's immediate recognition of Stockhausen's genius, changed his mind very quickly and arranged a recording of *Kreuzspiel* at the WDR.

Belgian composer colleague Goeyvaerts towards either his own work, *Kreuzspiel*, or Messiaen's work, *Mode de valeurs et d'intensités*, as a 'music of the stars'. The term 'Sternenmusik' was probably Stockhausen's invention, but 'punctual music'—suggested by Goeyvaerts in those discussions at the Marienhöhe—struck Eimert as the more serious and appropriate term. He then used these same words during the fall in his talks with Stockhausen.

It is likely that Goeyvaerts and Stockhausen kept using the term 'pointillist music' during their encounters in late 1951 and early 1952. There first opportunity to talk in person was at the end of 1951. On 29 December 1951 Goeyvaerts and magician Adrion witnessed Stockhausen's and Doris Andreae's marriage in Hamburg, and in January 1952 Stockhausen, on his way to Paris, stopped by Goeyvaerts in Antwerp for several days. Especially the latter visit must have been full of intense musical and metaphysical debate.[614] In mid-March 1952 Goeyvaerts visited Stockhausen in Paris, providing another opportunity to discuss all-important issues.[615]

Stockhausen's contribution to a seventieth birthday homage for Stravinsky, written in late March or early April 1952, is a definite first record of term coinage, which is backed by primary source materials.[616] It also contains first-hand evidence of Boulez's

[614] Goeyvaerts provided a few reminiscences from this January visit in his autobiography, for example: "Karlheinz came along to my classes in the Music Academy as well as to my lectures in the Academy. On that particular day my subject was Josquin and the 'game' of note series, derived from names and proverbs, on which his mass settings were based. Karlheinz swore that he missed not a word. He claimed that no public school in Germany had anything of that standard. The one thing that stuck in his mind was the idea of the 'game'. GOEYVAERTS 1994, pp. 48–49.

[615] GOEYVAERTS 1994, p. 49 and SABBE 1981, p. 24.

[616] Karlheinz Stockhausen, "Beitrag zum 70. Geburtstag Strawinskys," (March 1952), quoted from *Texte* 4 (1978), pp. 662–63. This is Stockhausen's third text of interest for the emerging theory of extended serialism. It is only preceded by his Bartók thesis of August 1951 and a corresponding *Musikalisches Nachtprogramm*, broadcast on 24 January 1952. See: Karlheinz Stockhausen, "Bela Bartók: Bela Bartók's Sonate für 2 Klaviere und Schlagzeug," (December 1951), quoted from *Text*e 2 (1964), pp. 136–39; here the date of writing is given as October 1951, but according to information from Stockhausen's letter of 15 December 1951 to Strobel (Heinrich Strobel, *'Verehrter Meister, lieber Freund...' Begegnungen mit*

and, indirectly, Cage's influence on Stockhausen. Boulez and Stockhausen met for the first time in the last days of February 1952:[617]

> "I recall the first meeting very well," Boulez says. "I knew no German. Stockhausen knew no French. A friend, Louis Sauger [*sic*], translated. We gesticulated wildly. I knew immediately that here was someone exceptional. I was right. I came to trust his music more than anything else. We talked about music all the time—in a way I've never talked about it with anyone else."[618]

Heinrich Strobel looms large in the background of their first meeting.[619] In charge of organizing the annual Donaueschingen festival for contemporary music, he had been told to look up Boulez in Paris. Strobel's visit in late 1950 led to Boulez's first commission for orchestra, *Polyphonie X*, and its premiere in October 1951 resulted in a scandal that put Boulez's name on the map in Europe. Barely a month later, Strobel, always on the

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*Komponisten unserer Zei*t (Stuttgart: Belser, 1977), p. 85) and his letters to Goeyvaerts, Stockhausen produced the program in late November or early December 1951. The long-lost Stravinsky birthday homage text was discovered in 1974 by Richard Toop. Stockhausen sent the article with his letter of 4 April 1952 to Goeyvaerts and requested his critical comments.

[617] For the dating of the visit, see fn. Fehler: Verweis nicht gefunden.

[618] PEYSER 1976, p. 76. Boulez had invited not just any interpreter for this first meeting with Stockhausen. Composer, conductor, and pianist Louis Saguer (Berlin 1907–Paris 1991) was a pupil of Milhaud, Honegger, Hindemith, and Kurt Sachs. Favoring the left of the political spectrum, he assisted Hanns Eisler at the Worker's University in Berlin before emigrating to Paris in 1933. He joined Leibowitz's circles around 1946 and during the late 1940s championed the French contemporary music of Boulez, Dutilleux, Jolivet, Martinet, Messiaen, and Nigg, as pianist and through his contributions at German, French, and Belgian radios.

Saguer's paper on the crisis in contemporary music, read at Darmstadt in 1949, is closely related to our topic. His description of the crisis forms the backdrop for the discussion between Steinecke and Eimert on 'The End of Music'. He spoke about the increasing divorce of mass media in capitalist consumer societies from the work of avant-garde composers, which increasingly had been confined to small specialist circles, working in almost total isolation. See Louis Saguer, "Die Krise in gegenwärtigen Musikschaffen," , paper read at Darmstadt (22 June 1949), quoted from Borio and Danuser, eds. *Im Zenit der Moderne*, Vol. 3 (Freiburg: Rombach, 1997), pp. 306–40. During the 1949 Darmstadt Summer School, he also gave an introduction to contemporary French music.

[619] Strobel (1898–1970) was a student of Paul Klee at the Bauhaus. During the Second World War, he was expatriate in France and, after the war, this connection with France led to his appointment as director of the South-German Radio (SWF) in Baden-Baden (which was in the French sector of occupation). He was the chief force behind the revival of the Donaueschingen New Music Festival and his influence on the new music scene in post-war Germany was seminal. Already involved in the pre-war *Melos*, he became its main editor after the war. In addition, he was the IGNM president for twelve years. Strobel and Boulez became very close friends and Boulez actually moved to Baden-Baden in the later 1950s. Aesthetically Strobel originally was closer to Stravinsky and Hindemith than to the Schoenberg School. For an excellent snapshot portrait of Strobel, see the foreword to Strobel, *'Verehrter Meister, lieber Freund...'*.

lookout for emerging young talents, found the score of *Kreuzspiel* at Eimert's house in Cologne. He demanded to see Stockhausen and, after looking at the latter's latest sketches, commissioned him with a work for big orchestra, knowing well that the 23-year old Stockhausen never before had composed for the medium. Strobel dared; Stockhausen took up the challenge. After struggling for half a year, Stockhausen finished writing his *Spiel* for orchestra in early May 1952. During Strobel's January visit in Paris, Boulez heard about the German talent, who was studying with Messiaen. He wanted to meet this fellow and arranged a meeting. On 3 March 1952 Stockhausen reported to Goeyvaerts:

> The 4th Étude [Messiaen's *Mode*] is still the best! That's also the opinion of Boulez (!), who sent me an invitation this week!! (He'd heard of me through Strobel, and asked me to visit him!). I spent a whole day with him. He was extremely polite, even kind and hospitable, and had very interesting things to tell me about his experiments at the radio studios (Schaeffer's group, but he has 4 evenings a week to himself in the studio, and is trying out his "Séries", with endlessly complex tape-cuts and projections). In the evening I spent four hours there with him, listened to tapes with him, and watched him at work (till 12 at night). We discussed everything under the sun…"[620]

Stockhausen studied French daily, but he was just in his second month in Paris when he met Boulez. The discussion about 'everything under the sun' between them must have been a spectacular event to witness! Louis Saguer, fluent in German and French, might soon have been out of work with the enthusiasm that Boulez and Stockhausen felt when they first met. Boulez not only immediately introduced Stockhausen to his cutting-edge *experiments* in serial timbre composition at the Schaeffer studios, but also to the music of Cage and his New York composer friends. This encounter in February 1952—more than any previous exposure to the ideas of Meyer-Eppler, Beyer, or Eimert in Cologne—

[620] Quoted from Toop, "Stockhausen and the Sine-Wave", pp. 381–82. Published only in English in this complete form. Stockhausen wrote this letter on *Monday*, 3 March 1952. He referred to the *previous* week when he wrote: "Boulez … sent me an invitation this week!!" Assuming they didn't meet during the weekend, their first encounter occurred between 25 and 29 February 1952.

convinced Stockhausen of the role electronic music needed to play in any further development of the new musical language.

His understanding is reflected in the brief article on Stravinsky which, in addition to its character as a homage, is also a commentary on the current situation of contemporary music and in this context the term 'pointillist' appears for the first time. Stockhausen portrayed Stravinsky as innovator equal in importance to Schönberg. Both men had opened doors; Stravinsky had moved away from metrical music ('Taktmusik') and Schoenberg from tonal music ('Tonmusik'). Comparing the musical dimensions pitch, rhythm, intensity, and density in regard to their relative contribution to the new musical language, Stockhausen accorded a special place to rhythm. Here, an almost infinite number of rhythmical values were available, whereas choices in the dimensions pitch and intensity were very limited. Mechanical and electronic sound generation would soon make available new aspects in all dimensions and

> So ist die musikalische Sprache der bisherigen abendländischen Musik als eine primär melodische, *lineare*, und harmonische, *homophone*, im Zustand grundsätzlicher Wandlung zur tönigen, punktualen, und rhythmisch polyphonen.[621]

He added that, of all composers, so far only Webern had succeeded in integrating all musical dimensions into the new language.

[621] "[t]hus the musical language of occidental music up to the present as primarily melodic, *linear*, and harmonic, *homophonic* is in a fundamental transition to a tone-timbral, *pointillist*, and rhythmically *polyphonic* one." Stockhausen, "Beitrag zum 70. Geburtstag Strawinskys", p. 663. A note on my translation of this difficult passage is in order: While the known adjective *tonlich* can be found in standard dictionaries, the term *tönig* appears to be Stockhausen's ad hoc creation. Its derivation from the substantive *Ton* can be understood by German readers in two mutually compatible ways. From the macrostructural perspective *tönig* suggests the single tone as central idiom of a new musical language. From the microstructural perspective *tönig* addresses the overall tone character that results from attention to its inner characteristics and their evolution. I chose the term 'tone-timbral' to express this double perspective.

The article, a mere two pages, includes the major elements of the new pointillist style. It is not difficult to see the input of Boulez in the attention given to rhythm, and the references to the 'Danse Sacrale' and the Ars Nova period would convince the hardiest skeptic that Stockhausen had been given a personal introduction to Boulez's world of musical thought, during those hours of discussing 'everything under the sun.' I think the inclusion of new 'mechanical' devices for sound generation reveals Boulez had presented Stockhausen enthusiastically with Cage's music for prepared piano and his innovative *Construction in metal*. The 'electronic' devices were added almost as an 'afterthought' in Stockhausen's listing, and that was no accident. Cage, Messiaen, Goeyvaerts, Boulez, and Stockhausen realized sound synthesis in the realms of traditional music: they composed the inner dimensions of sound before employing technology to the same end. Schaeffer, on the other hand, made an accidental discovery in the studio, which led him to explore ways in which to define a new kind of music. For the moment, these two different approaches coexisted, as Boulez and his circle of friends were welcome with their 'monotonic' experimentations in the Schaeffer studios. Stockhausen became a frequent guest there during the winter and spring of 1952, and struck up friendships with Fano, Philippot, and Barraqué.

On 4 April Stockhausen sent his Stravinsky article to Goeyvaerts, asking him for his critical comments. Goeyvaerts must have been familiar with terms like 'punktual' or 'tönig' from their discussions, because Stockhausen did not deem any further explanations necessary in his letter. Stockhausen had submitted Goeyvaerts's *Sonata* to the NWDR for recording and broadcast before March 1952. This resulted in its recording

by Astrid and Hansotto Schmidt-Neuhaus during the spring of 1952.[622] The broadcast premiere of pointillist music occurred in a *Musikalisches Nachtprogramm* entitled 'Junge Komponisten' on 29 May 1952. Eimert presented Goeyvaerts's *Sonata for two pianos*, Nono's *Polifonica–Monodia–Ritmica,* and Stockhausen's *Kreuzspiel*. Pointillism was first used in this broadcast and then, only weeks later, at the Darmstadt Summer School of 1952.[623]

[622] GOEYVAERTS 1994, p. 49

[623] Nono's role in the emergence of pointillism took place outside of the Parisian confluence; Nono evolved with a group of Venetian composers, first and foremost Bruno Maderna; he was guided and influenced by conductor Herman Scherchen, a seminal figure for modern music in Europe. Scherchen premiered *Pierrot Lunaire* before the First World War and later created an experimental studio in Gravesano, Switzerland.

CONCLUSION

In the preceding pages we have shown the historic continuities that link the origins of synthetic timbre serialism in Europe after 1950 to forerunners in the earlier part of the twentieth century. The fate of modern music was linked to political developments in Europe and in the world. Right-wing reactionaries, opposed to the internationalism, anti-capitalism, and the utopian ideals of the mostly left-wing modernists, violently repressed liberal and forward-looking tendencies. Modern art was branded 'degenerate'; artists who promoted it lost their jobs and were forbidden to show their work in public. In the 1930s and early 1940s modernism was 'silenced' in several European countries, and many artists and intellectuals were driven to seek refuge in Switzerland, France, the United States, and other countries. When the Axis powers' claim to world domination ended, the brutal repression was lifted and modernist aesthetics returned to the forefront with enhanced energy and force.

Cage's seminal role in introducing the repressed Bauhaus aesthetics in Paris and in Europe in 1949 opens a new perspective on modern music after the Second World War. His study with Cowell in the mid-1930s was followed by direct and indirect contact with leading modernists (among others, Josef and Anni Albers, Marcel Duchamp, Oskar Fischinger, Philip Johnson, Paul Klee, László Moholy-Nagy, and Arnold Schoenberg). Between 1935 and 1950, Cage cultivated a musical Bauhaus aesthetics in his works and activities. His interest in the East was not direct, but mediated by similar forerunners in Europe. Seeking spiritual renewal from the religion and wisdom of Eastern cultures, this was in part a reaction to the brutal first phase of capitalism in the late nineteenth century. Right after the Second World War, author Hermann Hesse, a famous promoter of Eastern

spirituality, won the Nobel Prize for his merits in literature in general and, in particular, his utopian *The Glass Bead Game*. Hesse is only one of many artists who had turned to the East for inspiration in the earlier part of the twentieth century.

Messiaen's role in the origin of post-war serialism was presented as limited to a core period around 1945. Rather than *Mode de valeurs* (1949), Cage's *Sonatas and Interludes* (1946–48) and Cage's works for percussion ensemble—such as *Construction in Metal*—had a tremendous influence on the European avant-garde in 1949–52. Cage brought back the modernist aesthetics of the Bauhaus, banned in Europe in the 1930s and 1940s. He promoted the universalist, spiritual, and utopian ideas of the Bauhaus in his works and theories.

Questioning the material used for creative work had been a basic Bauhaus tenet. At its root was a new vision of society, in which technology was not used to exploit the masses and to enrich a privileged minority, but to enhance the quality of life for all. In seeking contact with new materials, human beings could develop their abilities and special individual talents. For Cage and many other artists, the seemingly 'materialistic' concern for the material reflected their desire to reshape the world into a utopian society in which each individual might become a creative contributor to a common ideal.

Modernist aesthetics had some of its roots in science—from Helmholtz's early path-breaking work in musical acoustics to early electronic music instruments, such as Cahill's Dynamophone. Cowell's *New Musical Resources* and his sine-tone based Rhythmicon instrument, Fischinger's sound synthesis experiments with film media, Ruttmann's acoustic film *Weekend*, the color-sound experiments of Moholy-Nagy, and Schillinger's new music theory based on the latest scientific advances were among the forerunners of

post-war synthetic timbre serialism. In the late 1940s, Cage's position was central in regard to most trends in the vanguard of modernist art. He learned about the exciting possibilities of new technologies from Cowell and Fischinger. His call for experimental music research centers in the late 1930s and 1940s upheld earlier calls by modernists in the late 1920s and early 1930s. Cage understood, however, that new materials were found not only in the latest technology, but also in the mechanical world of noise and noise-pitch instruments. Waiting for access to technology, he realized 'new materials' composition in his percussion music and his prepared piano.

The suppression of Leibowitz's pioneering role in breaking the 'silence' about the Schoenberg School's music is a curious phenomenon. He wrote the very first monograph on the Viennese School—a world premiere that left its traces in countless music histories and compositions. His advocacy of Webern as 'composer of the future' began as early as 1938 and reached its highest pitch in the period 1944–47. Introducing the international participants at the Darmstadt Summer School to the music of the Viennese School in 1948 and 1949, Leibowitz's influence declined in the 1950s as a hyper-energized young generation of composers claimed their authoritative place and, in general, rejected all leadership by the older generation.

The speed and force of musical developments in post-war Europe may account partly for the historic distortion that Leibowitz's role, as a transmitter and originator of ideas, was minimal, or that Webern was discovered only in Darmstadt 1953 when, on the occasion of the composer's seventieth birthday, a true Webern fashion became manifest. We have shown that the main exponents of synthetic timbre serialism discovered Webern in the mid-1940s, almost ten years before his public recognition. While Cowell and

Wolpe, among others, had known Webern's music prior to Leibowitz's book, it is not certain in how far their understanding of Webern reached the level of Leibowitz's advocacy. In addition, Leibowitz's role in connecting Webern's music with the idea that silence could be "the ultimate possibility of speech" may have been Cage's crucial inspiration when he formulated his universal theory of music in 1948.[624] While this hypothesis has yet to be proven conclusively, the link is highly probable and, at this point, has not been challenged by alternative suggestions.

The fifteen years of Cage's career prior to 1950 are obscured by his later world-wide fame, which has been built around Cage's discovery of musical silence and his radical anti-art stance, well-known from Cage's first book on music: *Silence*. It was published in 1961 and Stockhausen, two years later, followed with a collected volume of his own texts on music: *Texte* 1. Five years after Cage, Boulez joined by publishing his articles in a book under the title *Stocktakings of an Apprenticeship*. The triangle of Cage, Boulez, and Stockhausen had its origin in the Transatlantic School, but by the 1960s the pathways had diverged and Cage had chosen the position of the repressed: silence. It would be an exercise in futility to seek a single interpretation of Cage's silence.

Leibowitz wrote his book on the three composers of the Viennese School as "breach of silence"; in doing so, he may have been the first to describe Webern's creative use of silence, leading Cage to discover "silence" as material and, on that basis, formulate a theory of music applicable to all musics, past and future. Despite the strong impact of Cage's ideas on Schaeffer, Boulez, Goeyvaerts, and other composers in 1949 and 1950, Cage's importance was not fully acknowledged and, in some cases, even denied. Most

[624] John Cage, "Forerunners", *Tiger's Eye* (New York, March 1949).

principles from Cage's universal music theory reappeared in Stockhausen's "...wie die Zeit vergeht...", about seven years after Cage had jumpstarted European modernist music in 1949. Among many other parallels, Stockhausen's theory also called for the radical novelty of each musical work, a micro-macrocosmic ideal of composition based on a unifying principle, and the equivalence of sound and silence. By 1956 Stockhausen had perfected Cage's early ideas, without losing its essential openness and balance. Cage, on the other hand, became increasingly more infatuated with chance and silence during the 1950s and, one may argue, went one step too far in his election of silence as the 'ultimate possibility of music'. Boulez, initially unsettled by Cage's aesthetics in 1949, remained most closely tied to traditional musical thinking by electing to focus on sound. Stockhausen kept the balance between the different elements of musical thought in a dialectical suspension—a balance that Cage had reached only after fifteen years of research into the aesthetic and spiritual foundations of the Bauhaus.

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APPENDIX: STOCKHAUSEN'S WEBERN CHRONOLOGY

1950

22 August 1950
Op. 5 Score of Five movements for string quartet, op. 5 (1909)
Detmar Seuthe[625] gave Stockhausen a Webern score as birthday present.

"Im Jahre 1950, in seinem letzten Kölner Studienjahr, lernte Stockhausen zum ersten Mal ein Werk Weberns kennen, die Fünf Sätze für Streichquartet op. 5 von 1909. [Wörner 1963, p. 47, 1976, p. 78]

"At this time [Cologne study period 1950] Stockhausen was familiar with almost every work of Schoenberg, Stravinsky, and Bartók, but of Webern he knew only the Five Movements for string quartet, op. 5, of which he had a miniature score." [Wörner 1963, p. 25, 1976, p. 252]

"Ich habe eine Webern-Partitur von einem Schulkollegen geschenkt bekommen, als ich mich so außerordentlich für Schönberg interessierte und forschte, wo es denn sonst noch neue Partituren in der Kölner Hochschule gab. Es gab keine einzige Partitur von Webern mit Ausnahme von op. 5, die mein Freund in einem Antiquariat in Köln gefunden und mir zum Geburtstag geschenkt hatte (das muß 1951 [recte: 1950] gewesen sein). Das war die einzige Webern-Paritur die ich kannte; aber es war nicht diejenige, die diese Ergriffenheit in mir hervorgerufen hat. Ich hatte das Werk auch gar nicht gehört." [Texte 9, p. 530; Blumröder 1993, p. 77] [Texte 9 conflicts with Wörner in dating of '1951'. It is an internal contradiction too. The period of high interest in Schönberg dates back to 1950, so this is a slip of memory. Stockhausen probably was in Hamburg for his birthday in 1951. See letter 18 August 1951 to Goeyvaerts.]

1951

26 June–10 July 1951
Op. 27 Piano Variations (and other works by Webern)
Introduction During the two weeks of the Darmstadt Summer School, Goeyvaerts gave Stockhausen an introduction to Webern. The Variations, op. 27 were of major importance: they formed the basis for Goeyvaerts's Sonata. [Stockhausen 1989, p. 35; Sabbe 1981, p. 16; 1973, pp. 107 and 109]
Goeyvaerts recalled:
"As for the Webern scores we discussed in '51, there was especially op. 27, the Piano Variations, to which I had devoted much study during the

[625] Detmar Seuthe was a friend from Stockhausen's Cologne music student period. Seuthe, Klaus Weiler, and Stockhausen co-composed music for the play *Burlesca* in 1950. See: Kurtz 1992, pp. 29–31.

winter ‘49–’50. I did not show the score to Stockhausen. I only told him about the learning it represented for me.”
[Goeyvaerts, letter to Richard Toop, 25 April 1972, quoted from Toop, “Last Sketches of Eternity”, (1991), p. 23.]

4 July 1951 — Adorno lectured on Webern (during Darmstadt Summer School)
All works — Adorno spoke on the music of Webern, in general.
[Borio 1997, vol. 1, pp. 183–87]

4 July 1951 — Webern Concert, German premiere
Op. 16 — Five Canons on Latin texts, 1v, cl, b cl, 1923–24 (1928)
Christus factus est (Maundy Thursday gradual),
Dormi Jesu (Des Knaben Wunderhorn)
Crux fidelis (Good Friday hymn)
Asperges me (Ordinary antiphon)
Crucem tuam adoramus (Good Friday antiphon)
[Concert Info: Borio 1997, vol. 3, p. 549–49, Texte 9, p. 692]
“Ich habe 1951 bei den Internationalen Ferienkursen für Neue Musik in Darmstadt von Weben einige Lieder mit dem Titel *Fünf Kanons nach lateinischen Texten* gehört.” [*Texte* 9, p. 691]

10 July 1951 — Webern’s Piano Variations. Excerpt played at Eimert/Steinecke presentation.
Op. 27 — Scripted *Nachtprogramm* was presented at Darmstadt within the workshop on ‘Die Klangwelt der elektronischen Musik’. *Nachtprogramm* originally broadcast on 24 May 1951 under the title: “Ist die Musik am Ende? Eine optimistische Betrachtung über musikalische Grenzsituationen [1951].”
[Borio 1997, vol. 3, p. 344]

30 July 1951 — Stockhausen requested a Webern’s Piano Variations from Goeyvaerts.
Op. 27 — Three weeks after returning from the Darmstadt Summer School 1951,
Score — Stockhausen wrote to Goeyvaerts : “hätte schrecklich gern A. v. Webern: Klaviervariationen” (“I’d love to get A. v. Webern: Piano Variations”)
[Blumröder 1993, p. 77]

1952

1952 — Paris
Various — Stockhausen made copies of Schoenberg, Berg, and especially Webern by hand. [Interview 1971, Stockhausen-Maconie 2000, p. 35]

Feb/Jun 1952 — Boulez showed Stockhausen op. 21, Stockhausen made Webern copies
Op. 21 — “Ich muß allerding sagen, daß ich 1952 in Paris—durch die Freundschaft mit Boulez—über Webern als das Nonplusultra gehört hatte, und ich habe

in Paris aus der Symphonie von Webern ein paar Seiten kopiert und gesehen, daß das eine ganz andere Konzeption von Musik und Art von Notenschrift war."
["Interview with Gisela Gronemeyer on Deutschlandfunk radio, 18 October 1989", quoted from *Texte* 9, p. 628]
"Während dieser Zeit habe ich eine handschriftliche Kopie von Weberns Symphonie gelesen." ("During this time, I read a manuscript score of Webern's Symphony")
["Ein Geist, der sich in Zeit und Raum frei bewegen kann" (Interview with Marina Tschaplygina, 17 March 1991), quoted from *Texte* 9, p. 691]

June 1952 ? Stockhausen stated that he had not yet analyzed a work by Webern, only heard a few Webern pieces, once, when he wrote *Klavierstück* I within two days, in 1952
"…wie ich denn auch zu der Zeit [when he wrote *Klavierstück* I, that is June 1952, or earlier] noch nicht eine einzige Webernanalyse gemacht hatte und erst wenige Werke Weberns in Darmstadt nur einmal gehört hatte." ["Gruppenkomposition: *Klavierstück* I", Texte 1 , p. 74]

16 July 1952 Webern's music performed at Darmstadt Summer School 1952.
Op. 12 Vier Lieder, 1v, pf, 1915–17 (1925): Der Tag ist vergangen (P. Rosegger), Die geheimnisvolle Flöte (Li Tai Po, trans. H. Bethge), Schien mir's, als ich sah die Sonne (A. Strindberg), Gleich und gleich (Goethe)
"Ich glaube, es waren ein paar Webern-Lieder, die 1952 in Darmstadt aufgeführt wurden." [*Texte* 9, p. 530]
"In Darmstadt hörte ich 1952 de *Vier Lieder* op. 12 von Webern."
[*Texte* 9, p. 691; Plakat, *Texte* 9, p. 693]

1953

Feb 1953 Stockhausen wrote his first Webern analysis in Paris.
Op. 24i Concerto, fl, ob, cl, hn, tpt, trbn, pf, vn, va, 1931–4 (1948) [*Texte* 1, p. 24]
[Paper for Darmstadt, publ. *Melos* Dec. 1953, reprinted in *Texte* 1, p. 24]

In his analysis he mentioned: Ostinato Modelle der Frühwerke
Zwei 6-Ton Akkorde, 1. Satz der 2. Kantate
Kreisende Tonordnung

1952/1953 Messiaen analyzed Webern in class (Acad. year: Oct 1952–May 1953)
Op. 7 Four pieces, vn, pf, 1910, definitive version 1914 (published 1922)
[Goléa 1977, p. 800]
Magdeleine Martin, auditor of Messiaen's class of 1952-53:
"Messiaen nous a parlé avec admiration des petites pièces pour piano et violon [op. 7], don't certaines ne durent que quelques mesures. Il voulait

surtout nous démontrer que le son et le silence sont, des événements musicaux équivalents: il y a de petites notes de temps en temps. Messiaen remarquait: 'Ici, Webern a fait une doublure.' Ou encore: 'Ici, on a l'impression d'une quarte et sixte.' Ou il nous faisait remarquer deux septièmes de suite, pas à cause des dissonances, mais bien parce qu'il trouvait que ce n'était pas du tout caractéristique de Webern d'écrire deux choses analogues de suite." [Boivin 1995, p. 314–15]

March-April 1953

Op. 7 Four pieces, vn, pf, 1910, definitive version 1914 (published 1922)
Stockhausen described Webern's op. 7 in his Arbeitsbericht 1952/53. The dating of the article is tentative. In this essay Stockhausen summarized the experiences of the Paris period.

26 March 1953 In a letter of 26 March 1953, Stockhausen mentioned returning Webern
Op. 30 scores to Boulez, but wished to keep op. 30 for a couple of days more [he left the next day, so it he took the Variations op. 30 with him to Hamburg. [Decroupet, "First sketches of reality", 1999, p. 110]

March 1953 Stockhausen promoted Webern at Cologne Radio. He talked to Eimert and Kruttge in 1953 upon return from Paris.
"1953 im Mai [recte: März] bin ich aus Paris zurück nach Köln gekommen und habe eine große Aktivität entwickelt, um Dr. Eimert und Dr. Kruttge, also die Verantwortlichen der Abteilung für Neue Musik, für Webern zu interessieren. Ich habe dann die Aufführung von Weberns Saxophon-quartett in einem Rundfunkkonzert mit meinem ehemaligen Lehrer Hans Schmidt-Neuhaus als Pianist veranlaßt und auch eine Aufführung des Konzertes op. 24. Und dadurch wurde dann Webern sehr viel wichtiger (auch im Rundfunk hatte man bis dahin nichts über Webern gesagt). [*Texte* 9, p. 530–31]
"On his return to Paris Stockhausen had once more advocated Webern's music to Eimert and Kruttge at the WDR." [Kurtz 1992, pp. 60–61]

April 1953 Radio broadcast of Webern's Concerto, op. 24
Op. 24 "Ich habe dann die Aufführung von Weberns Saxophonquartett in einem Rundfunkkonzert mit meinem ehemaligen Lehrer Hans Schmidt-Neuhaus als Pianist veranlaßt und auch eine Aufführung des Konzertes op. 24. Und dadurch wurde dann Webern sehr viel wichtiger (auch im Rundfunk hatte man bis dahin nichts über Webern gesagt)." [*Texte* 9, p. 530–31]

May 1953 *Musik der Zeit Festival* Concert in Cologne
Op. 22 Quartet, cl, t sax, vn, pf, 1928–30 (1932) [Coeuroy, Festival 1953]
"After the New Music Festival he had written to Goeyvaerts that there might be some sounds in Beyer's and Eimert's tape pieces that indicated possible paths forward, but all in all they had nothing musically significant. Only one piece at the New Music Festival had been

significant: Webern's Quartet op. 22, which had been particularly beautiful." [Kurtz 1992, p. 60-61]
Report on that music festival, including the Webern performance. [André Coeuroy. "Le 'Nouveau Festival 1953.'" *Les Cahiers d'Information musicale, no. 9–10* (1953): 5–10. Followed by Entretiens et débats à l'occasion du 'Nouveau Festival 1953'", ibid., pp. 11–29.]

20 June 1953
All UE

Stockhausen obtained all published Webern scores from Universal Edition
20 July 1953: Letter to Goeyvaerts (had scores for about four weeks)
"Es ist ungeheuer, was Webern vorausgeahnt hat. Ich begreife das erst jetzt, wo ich seine Musik allmählich genau kennen lerne (alle editierten [*sic*] Werke besitze ich seit 4 Wochen und bin glücklich, abends darin lesen zu können)." [Sabbe 1981, p. 70; Blumröder 1993, p. 78]
"It's uncanny what Webern sensed in advance—I'm only understanding that now that I'm gradually getting to know his music (I've had all the published scores for 4 weeks…)" [Toop 1991, p. 4]

"Ja, dann habe ich mir alle verfügbaren Webern-Partituren von der Universal-Editon schicken lassen. Seit der Uraufführung meines *Spiel für Orcheseter* in Donaueschingen 1952 war ich in Kontakt mit der Universal Edition, weil man das Kreuzspiel und vor allem das Spiel für Orchester drucken wollte. Ich hatte den Direktor der Universal Edition kennengelernt, und er hat mir alles, was zugänglich war—zum Teil Weberns Manuskript, die nicht einmal photokopiert waren—geschickt. Ich habe auch Weberns originale Skizzenbücher geschickt bekommen und hatte so die Möglichkeit, die Partituren zu studieren. In den folgenden Jahren habe ich so viele Aufnahmen wie überhaupt nur möglich im Archiv des Studios für Elektronische Musik gesammelt; diese Tonbänder stehen noch heute in dem alten Archiv." [*Texte* 9, p. 531]

1953 habe ich mir zum ersten Mal von der Universal Edition Skizzenbücher von Webern, sogar Originalmanuskripte schicken lassen, weil mich '52 Direktor Schlee in Donaueschingen nach der Uraufführung von Spiel für Orchester ansprach und sagte: "Sie müssen unbedingt zu uns kommen." So kamen wir in Kontakt. Meine Bitte war: "Ich habe so viel über Webern gehört, aber ich weiß nichts darüber. Schicken Sie mir doch, was Sie haben." Er sagte: "Ja, das kann ich Ihnen gerne schicken, das meiste ist nicht gedruckt, wir schicken es Ihnen gerne im Manuskript." Und dann habe ich die ersten Stücke von Webern kennengelernt. [*Texte* 9, p. 628]

19 July 1953

Darmstadt: Festliches Kammerkonzert
Op. 3, Fünf Lieder aus 'Der siebente Ring' (George), 1v, pf, 1908–9 (1919): [Dies ist ein Lied, Im Windesweben, An Bachesranft, Im Morgentaun, Kahl reckt der Baum]

20 July 1953 Letter to Goeyvaerts on Webern's Concerto, op. 24
"Kennst Du das Konzert op. 24? Ich zeige nur den ersten Satz und auch nur das Wesentliche daraus. Es ist ungeheuer, was Webern vorausgeahnt hat. Ich begreife das erst jetzt, wo ich seine Musik allmählich genau kennen lerne (alle editierten Werke besitze ich seit 4 Wochen und bin glücklich, abends darin lesen zu können)."
("[Do you know the Concerto, op. 24? I'm only showing the first movement the most essential.] It's uncanny what Webern sensed in advance—I'm only understanding that now that I'm gradually getting to know his music (I've had all the published scores for 4 weeks…)
[Sabbe 1981, p. 70; Blumröder 1993, p. 78, Toop 1991, p. 4]

23 July 1953 Stockhausen gave Darmstadt paper on Webern's Concerto, op. 24
KS recalls reaction of audience: In English [Kurtz 1993, p. 61]
"Und deshalb ist so ein Artikel wie meine Analyse des Konzertes von Webern damals auch so angegriffen worden, weil man sagte: aber das ist gar nicht Webern, der wollte doch etwas ganz anderes, der hat doch motivisch gedacht; und all die Webernschüler wurden Gott weiß wie wütend über diese Analyse und meine Analyse von Weberns Streichquartett unter dem Titel Struktur und Erlebniszeit. Sie verstanden nicht, daß das natürlich eine einseitige Interpretation sein mußte, weil ich selber etwas Bestimmtes wollte und sagte: das steckt doch schon in manchen Werken der Tradition darin. Vielleicht sieht man überhaupt nur das in Werke hinein, was man selber für wichtig empfindet, und deshalb kann man die traditionelle Musik immer wieder neu interpretieren, weil man ständig neue Ideen hat, wie man etwas machen will; und so kann man eine Komposition, die allgemein als nicht so wichtig empfunden wird, oder den ganzen Stil einer Epoche modernisieren." [*Texte* 9, p. 529 and pp. 547–51]

Also see Armin Schibler's polemical reaction to that evening, an open letter published the next day. He accuses Boulez, Goeyvaerts, and Stockhausen of wanting to elevate the 'Kaputt' of the post-war ruins in Germany to a permanent situation. Cites Adorno as support. Calls experiments dangerous, destabilizing.
[Armin Schibler. "Rundschreiben" in: Borio 1993, vol. 3, pp. 66–68]

24 July 1953 Darmstadt: Seventieth birthday concert Anton Webern
Op. 9, Sechs Bagatellen, str qt, 1911, 1913 (1924)
Op. 11, Drei kleine Stücke, vc, pf, 1914 (1924)
Op. 23, Drei Gesänge aus 'Viae inviae' (Jone), 1v, pf, 1933–34 (1936)
[Das dunkle Herz, Es stürzt aus Höhen Frische, Herr Jesus mein]
Op. 7, Vier Stücke, vn, pf, 1910, definitive version 1914 (1922)
Op. 5, Fünf Sätze, str qt, 1909 (1922); arr, str orch, 1928, rev. 1929 (1961)

12 Nov 1953 Musikalisches Nachtprogramm NWDR
"Junge Komponisten bekennen sich zu Anton Webern"
mit Beiträgen von Pierre Boulez, Karel Goeyvaerts, Luigi Nono und Stockhausen. Host: Herbert Eimert. [Borio 1993, vol. 3, pp. 58–65]

1954

15 May 1954 Stockhausen often listens to first of Four Pieces, op. 7 (1910), fascinated by *Klangfarbenmelodie* aspect.
"...über allem steht uns das Vorbild der Einfachheit, eines Minimums an Mitteln, das so unsagbar schwer ist, wenn die Musik nicht dumm sein soll. Wie unsagbar groß ist da Webern! Wir haben in der letzten Zeit immer und immer wieder das 1. der Stücke für Violine und Klavier gehört." [Blumröder 1993, p. 78]

Dec 1954 *Musikalisches Nachtprogramm* "Von Webern bis Debussy."
Op. 7 [*Texte* 1, pp. 75–85]
In *Musikalisches Nachtprogramm* the analysis of Debussy's *Jeux* was preceded by the [unpublished] analysis of Webern's op. 7—used as an introduction to the concept of 'group composition'.
[Decroupet, "Last Sketches of Reality", 1999, pp. 111–12]

1955

Jun 1955 Stockhausen writes a second Webern analysis "Struktur und Erlebniszeit"
Op. 28 [*Texte* 1, pp. 86–98]

Sep 1955 "Anton Webern." *Die Reihe* 2. [Special issue on the occasion of the tenth anniversary of Webern's death.]

Information on Webern in Publications of the 1940s

1947 René Leibowitz. *Schoenberg et son école: l'étape contemporaine du language musical*. La flute de Pan. Paris: Janin, 1947.

1948 René Leibowitz. *Qu'est-ce que la musique de douze sons? Le concerto pour neuf instruments, op. 24*. Liège: Editions Dynamo, 1948.

1949 René Leibowitz. *Schoenberg and His School: The Contemporary Stage of the Language of Music*. Translated by Dika Newlin. New York: Philosophical Library, 1949.

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