THE SAXOPHONE WORKS OF KARLHEINZ STOCKHAUSEN

by

Elizabeth Bunt

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SIGNED: Elizabeth Bunt
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ABSTRACT

Karlheinz Stockhausen (1928–2007) was one of the most influential composers of the second half of the twentieth century. Although his music has been written about extensively, there is little scholarship focusing directly on his saxophone music. This document is a study of Karlheinz Stockhausen’s saxophone works. It introduces saxophonists, and others, to Stockhausen’s idiomatic stylistic traits and techniques in the context of his saxophone pieces. Particular aspects of Stockhausen’s creative output are illuminated, including the formal construction of his pieces, the visual component of his pieces, the spatialization of his pieces, and his use of electronic media. Six of Stockhausen’s pieces are discussed in detail: In Freundschaft, Saxophon, Knabenduett, Linker Augentanz, Erwachen, and Edentia.
PREFACE

The saxophone, as a young instrument, is fortunate to have works in its repertoire by a composer of such significance to twentieth-century music as Karlheinz Stockhausen. Little has been published on Stockhausen’s music for the saxophone. It is hoped that this paper will complement the otherwise extensive body of literature on the composer’s music by providing an in-depth study of his saxophone pieces.

Many dedicated individuals have invested their time in studying, performing, and writing about Stockhausen’s music. Stuart Gerber’s dissertation, “Karlheinz Stockhausen’s Solo Percussion Music: A Comprehensive Study” is an articulate study on Stockhausen’s music from a performer’s perspective. Jerome Kohl, an American expert on the music of Stockhausen, presents analyses with a detailed view of his music. Robin Maconie, described as Stockhausen’s “most assiduous chronicler,” has written copiously on the personal, spiritual, musical, and cultural influences on Stockhausen’s music.¹ Musicologist Richard Toop has written numerous articles and lectures on Stockhausen’s music. Authoritative German Stockhausen scholars, Christoph von Blumröder and Rudolph Frisius, have published extensively on his music. Theologian Thomas Ulrich addresses the spirituality in Stockhausen’s music. All of these individuals knew Stockhausen personally.

¹ Alex Ross, The Rest is Noise (New York: Farrar, Straus and Giroux, 2007), 394.
Stockhausen’s own writing about his music clearly illuminates the construction of his compositions and his beliefs on music. Stockhausen himself wrote much about his music. His ten volumes of *Texte zur Musik* detail many of his compositions from the years of 1952 to 1991. Also, the publication of many interviews and lectures provide an invaluable resource in learning about his music.

For the last decades of Stockhausen’s career, two instrumentalists collaborated with Stockhausen: Suzanne Stephens, clarinet, for more than thirty years and Kathinka Pasveer, flute, for twenty-five years. These collaborations fostered the creation of a substantial body of works for their respective wind instruments, music that translates well to the saxophone. Also, these two women offer unique insight into the mind and music of Stockhausen which is expressed in their interpretations/performances, master classes, writings, and spoken word.

Stockhausen preferred that musicians wishing to perform or record his music study directly with him. Those wishing to learn his music now study with Ms. Stephens or Ms. Pasveer, or one of the interpreters (instrumentalists and vocalists) who studied with Stockhausen. His distinctive musical language and performance practice is thus passed on by those who learned it directly from its source.
CHAPTER 1
CHRONOLOGICAL OVERVIEW OF CAREER & WORKS

Stockhausen’s musical output can be described via a virtual twentieth-century glossary of musical terms: serialism, point music, electronic music, live electronic music, space music, statistical music, aleatoric music, musical theater, process composition, intuitive music, moment composition, formula composition, world music, etc.¹ In this myriad of musical explorations, where do Stockhausen’s saxophone pieces lie?

The Early Years (1950–1977)

Stockhausen’s career can be roughly divided into three parts: his early years (1950–1977), the Licht years (1977–2004), and the Klang years (2004–2007). In Stockhausen’s early years he created numerous well-known pieces, including Gesang der Jünglinge (1955–1956), Gruppen (1955–1957), Kontakte (1958–1960), and Hymnen (1966–1967, 1969). Stockhausen, a contemporary of Pierre Boulez, Luciano Berio, and John Cage, was at the heart of musical explorations in the mid-20th century. During these early years Stockhausen experimented with the possibilities of total serialism, sound projection, and the creation of new, previously unheard sounds via the electronic studio.

Stockhausen’s musical choices and performance practice, throughout his career, were informed by explorations made in his early electronic works. In Stockhausen’s early electronic piece, Gesang der Jünglinge, a young boy’s prerecorded voice, singing a biblical text, is combined with electronically created sounds. Stockhausen used his research in phonetics and spectral analysis to electronically create vowel sounds and consonant sounds. The piece is considered a masterpiece, possibly the first electronic masterpiece, for its seamless synthesis of vocal and electronic sounds.3

Early in his career Stockhausen did not prominently make use of the saxophone; there are, however, saxophones in his well-known large ensemble works Gruppen (1957) and Carré (1960). Gruppen, for three orchestras, and Carré, for four choirs and orchestras, surround an audience with music. From this period, Stockhausen also has several pieces for an un-prescribed melody instrument that are performable by saxophonists, such as Solo, In Freundschaft and Tierkreis for melody instrument and chordal instrument. Additionally, Stockhausen made a saxophone version of his early work Amour, which was originally a clarinet solo piece.

The Licht Years (1977–2004)

Licht: Die sieben Tage der Woche
(Light: The Seven Days of the Week)
ca. 29 hours

David Paul: “You tend to work on a colossal scale. You’re an idealist, you have exceptional endurance, and you’re metaphysical in the sense that you want to extend yourself beyond the mundane, the limits of being human.”

Stockhausen: “Right.”

Licht: Die sieben Tage der Woche (Light: The Seven Days of the Week, 1977–2004) is Stockhausen’s massive opera cycle, on the grand scale of Wagner’s Ring cycle, but larger. Stockhausen began Licht in 1977 and continued work on it until 2004, with his entire output from this time going into this opera cycle.


Stockhausen wrote all the music, text, and stage action for the operas.

The saxophone is heard in three of the Licht operas: Donnerstag (Thursday), Samstag (Saturday), and Dienstag (Tuesday). Donnerstag, the first opera of Licht, contains a soprano saxophone duo, Knabenduett (Boys’ Duet).

Samstag’s entire third scene is for a wind band with an extended saxophone

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5 Some sources (i.e., Richard Toop in his Grove Music Online entry on Stockhausen) say Stockhausen completed Licht in 2003, however Stockhausen’s official website, stockhausen.org, cites 2004, thus 2004 will be used throughout this paper.
section: two soprano, two alto, one tenor, one baritone, and one bass saxophone.

The piece *Linker Augentanz* (Left-Eye Dance) for large saxophone section, percussion, and synthesizer was extracted and expanded from this scene. Three soprano saxophones are included in *Dienstag* in the *Jahreslauf* (Course of the Years) scene. *Saxophon* is a soprano saxophone solo with bongo drum that originated from *Jahreslauf*.

Stockhausen used saxophones in *Licht* for a variety of reasons. He wrote *Knabenduett*, in *Donnerstag* (Thursday), for his young son Simon who played the saxophone. In *Jahreslauf*, in *Dienstag* (Tuesday), Stockhausen chose soprano saxophones as a substitute for Japanese *hichiriki*. “Lucifer's Dance,” the third scene of *Samstag* (Saturday), was written for the University of Michigan Symphony Band, which included several saxophones.

Tim Miller, the saxophone section leader of the Michigan band, elaborated that after Stockhausen’s experience with the Michigan band, Stockhausen indicated that, “he had found a baritone/bass voice [the bass saxophone] that he felt was the most flexible and wanted to experiment and write for it.”

So that Stockhausen could explore the possibilities of the bass saxophone, he invited Tim Miller to come to Germany. Possibly the saxophone would have appeared more throughout the later operas if Mr. Miller had gone, however as it stands the saxophone does not play a major role in them.

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6 Tim Miller, email correspondence with author, 13 July 2010.
7 To clarify, Tim Miller was invited, but Matt Levy was actually the bass saxophonist for the Michigan band. Mr. Miller did not accept Stockhausen’s offer, but one might speculate on the saxophone music that may have existed had he collaborated with Stockhausen.
Instrumental music plays a substantial role in the Licht operas, notably in that not only is each of the three main characters represented by a vocalist, but also by an instrumentalist. At times there is only minimal narration while staged instrumental music takes the fore, as in the second and third scenes of Samstag. In Licht, Stockhausen used a “modern orchestra” that included synthesizers and amplified instruments. Electroacoustic music colors the palettes of the operas. Dienstag (Tuesday) requires a hall that can emit octophonic electronic music, in other words, speakers in eight locations around the audience, and Freitag uses a dozen.

The three main characters of the opera cycle are Lucifer (Luzifer), Michael, and Eve (Eva). Each character has a corresponding vocalist, instrumentalist, and in some of the operas a dancer/mime as well, a threefold representation of each character. The role of Eve is comprised of a soprano voice and basset horn. Suzanne Stephens, long-time collaborator of Stockhausen, was the basset hornist. Michael is played by a tenor voice and trumpet. Stockhausen’s son Markus played the trumpet part. Lucifer is a bass voice and trombone. As a note of interest for saxophonists, a sketch of Stockhausen’s from April 1977 shows that he considered having a fourth main character, Adam, who was to be portrayed by a dancer/mime, baritone voice, and baritone saxophone. “Hugo” is in parenthesis in the sketch. Presumably Stockhausen was considering Hugo Read for the part.

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He is the saxophonist who premiered *Knabenduett* with Stockhausen’s son Simon in *Donnerstag* (Thursday) and played saxophone in *Dienstag* (Tuesday).

Stockhausen created the music, libretti, actions and gestures for each opera with a feel far from that of traditional Western opera. *Licht* draws from and is inspired by many philosophical, religious, and cosmological texts, most notably *The Urantia Book*, a mix of traditional theology and fiction. In his *Grove Music Online* entry, Richard Toop cites *The Urantia Book*’s influence on Stockhausen’s *Licht*:

> A more significant influence is that of the Urantia Book, a collection of 196 “papers” supposedly revealed by extraterrestrial superhumans from 1928 to 1935, with which Stockhausen became familiar in 1971. The basic opposition in *Licht* between dissenting intellect, represented by Lucifer, and affirmative spirituality, represented by Michael, is drawn straight from the Urantia Book’s cosmology, as indeed is the cycle’s title: according to the Urantia Book, “Light – spirit luminosity – is a word symbol, a figure of speech, which connotes the personality manifestation characteristic of spirit beings of diverse orders.” However, *Licht* also draws on an enormous range of other myths and religious traditions and rites.

Various musical traditions of the world are influential in *Licht* and aid in creating an atmosphere of “ceremony and ritual” that pervades the operas. For instance, the stylized staging Stockhausen used emulates traditional Japanese Noh theater. The rather mythological plot also fosters the ceremonial atmosphere in *Licht*.

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Additionally, Stockhausen incorporated personal experiences, such as the horror of WWII, into the plot.\(^\text{12}\)

Other facets of the operas are also unconventional. For example, the action of the drama does not only take place onstage, but also around the audience and even outside the hall. In the “Helicopter String Quartet” of *Mittwoch* (Wednesday), four helicopters fly the members of the quartet into the air and sound and video of them are transmitted back to the hall. Perhaps the term *opera* is given to these works only because it is the term that comes closest to describing the pieces, even though it may have connotations not entirely accurate for Stockhausen’s works.

Stockhausen wrote all the text himself for *Licht*, as Wagner did for his own *Ring* cycle. The text is subsidiary to the music. Speaking of *Donnerstag*, Stockhausen said, “Just think that I superimposed most of the texts on to the parts involving the music, which was already finished.”\(^\text{13}\) The music came before the words. Syllables and even just phonemes of words (small sounds severed from whole words) were rearranged to create new words and at other times are

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\(^{12}\) In the intense second scene, “Mondeva,” of the first act of *Donnerstag*, the lethal injection of Stockhausen’s mother in a sanatorium at the hands of the Nazi’s in WWII is reenacted. Stockhausen also lost his father near the end of WWII. Alex Ross cites this time in Stockhausen’s past as, “the weird horror of Stockhausen’s youth...he was orphaned by Nazism and the Second World War: his father, a troubled Nazi, died on the Eastern Front, and his mother, mentally ill, was apparently killed in the Nazi euthanasia program. As a teen-ager, he served as a stretcher-bearer behind the collapsing front...A fan of American pop, he sometimes serenaded dying soldiers with the likes of “Tea for Two” and “Honeysuckle Rose.” During the American occupation, he studied at the Summer Courses for New Music in Darmstadt, which was supported, in part, by “reorientation” dollars. In short, Stockhausen’s mind was shaped and scarred by the historical furies that now haunt the desolate corridors of Tempelhof [airport of the Berlin Airlift]. If, in later years, this composer appeared to have booked himself on one long flight from reality, who can blame him?” Alex Ross, “Supersonic; Stockhausens’s ’Gruppen,’ at Tempelhof Airport, in Berlin,” *The New Yorker* (13 October 2008).

\(^{13}\) Interview from October 1980. Tannenbaum, *Conversations with Stockhausen*, 33.
uttered with no perceptible meaning. Stockhausen’s texts communicate meaning or sentiment as a poet would, rather than as a novelist would communicate.

Symbolism is used throughout the course of Licht. Color, for example, is used symbolically in the operas. Dienstag’s (Tuesday’s) principal color is red, with secondary colors being blue for the character Michael and black for the character Lucifer. Each day of the week and each main character have a symbol. Michael’s symbol, three concentric blue circles with a “Michael’s Cross” on a white background, is strikingly similar to the three concentric blues circles on a white background that is the trademark of The Urantia Foundation. The symbolism is consistent throughout the operas and contributes a sense of continuity.

The Super-Formula

All works from the opera cycle are formula compositions based on a large formula (“super-formula”) conceived in 1977 as the overarching structure for Licht (see Musical Example 1). A formula is a melody or set of counterpointed melodies that is the “kernel” from which a musical composition is created. Each of the three main characters, Lucifer, Michael, and Eve, has a melodic layer that contributes to the super-formula. Stockhausen said that,

If one analyses [sic] all three formulas vertically, the three formulas have three very different characters. One I call the Michael formula, which is a descending melody and has mainly descending and ascending fourths.

Second is the Eve formula, which ascends with a break in the middle and then descends and is predominantly major thirds. The third formula is called the Lucifer formula; it starts with an ascending major seventh very aggressively, descending, ascending and descending again with several tritones (dissonant intervals).  

In addition to particular intervals, each formula also contains repeated notes and rests.

After creating the initial super-formula Stockhausen then elaborated it. Jerome Kohl describes how the initial super-formula sketch or “kernel” was elaborated into the full super-formula. (Musical Example 1 contains both versions for comparison.) According to Kohl,

[The “kernel” was expanded] by adding ornaments (Akzidenzen), by the “coloration” of the rests with soft noises, and by inserting new but related material called “improvisations.” Both forms of the superformula are used in Licht, though the kernel form is less frequent. There are three melodic strands, each called a “formula” by Stockhausen, and each is identified with one of the three archetypal protagonists of Licht: Michael, Eve, and Lucifer. These constituent formulas are not the equivalent of Wagner’s leitmotiven, amongst other reasons because they are all three present—more or less—at all times during the entire cycle. According to Kohl,

The super-formula, in its kernel form and its elaborated form with more colorful sound options, was at the heart of the construction of the operas.

The large-scale form of Licht is organized via a formula. In the sketch of the kernel of the super-formula, Stockhausen drew bar lines separating the music into sections for each day of the week. Each opera’s proportions are based on its section of the formula.

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Musical Example 1. *Licht* Super-Formula: Kernel & Embellished Versions

Kernel Super-Formula of *Licht*

Embellished Super-Formula of Licht
The formulae were used to project the forms the pieces would take and also the timbres and pitches that would be used in compositions. For instance, in regard to what Kohl refers to as “the coloration of the rests with soft noises,” Stockhausen said, “I also use ‘coloured silence’—breathing sounds, whistling, and all sorts of voiceless consonant sounds.”¹⁷ This colored silence (i.e., breathing sounds and kissing noises) is used extensively in the saxophone piece, Linker Augentanz from Samstag (Saturday). All of the musical material for the operas is derived from this super-formula, with the exception of the Jahreslauf (Course of the Years, 1977) scene in Dienstag (Tuesday), which predates the super-formula’s creation.¹⁸

It is meaningful to look at formula composition in contrast to serialism. In discussing the zeitgeist of the 1950s and its influence on musicians and serialism Stockhausen said,

There was similar thinking everywhere: reduction of the process of forming to the smallest possible element. When I use the word “forming,” I mean it in the sense of the crystallized result of the creative act, the form being just an instant in a process, and that what was happening among scientists as well as artists in the early fifties was that attention was increasingly focusing on the process.¹⁹

Stockhausen explained that, “the formulas of Licht contain a lot of musical qualities which the previous series did not have, and with this I have composed over the last twenty-one years day by day, always developing new organisms with

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¹⁸ Maconie, Other Planets, 481.
this nuclei formula." In total, Stockhausen composed for over thirty years using a formula as a seed. Music scholar Richard Toop further clarified that, “Although, in some respects, the formula method seems to hark back to the serialism of the early 1950s, it is essentially a much more flexible method, allowing far more scope for on-the-spot decisions about musical substance.” The seed aided in the conception of a work, it provided the building blocks for a composition, but it did not decide its every twist and turn.

*Licht’s Conception*

The influence from Japan was often visible in Stockhausen’s music. In his review of *Der Jahreslauf*, Paul Griffiths said, “Stockhausen’s creative love-affair with Japan is of long standing, going back to *Telemusik* [realized in the Nippon Hoso Kyokai (NHK) electronic studio in Tokyo] in 1966 and remembered in the no-ritual [or “noh”] and percussion scoring of several works since.” Interviewer Malcolm Ball mentions this early sway of Japan with Stockhausen’s “trip to Tokyo in 1966...Stockhausen has said that he lived in a kind of dream world and was fascinated by all things Japanese and soon became ‘more Japanese than the

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Japanese’. Japan’s musical tradition offered inspiration for Stockhausen’s \textit{Licht} cycle.

Stockhausen said, “I composed the basic formula of \textit{Light} \textit{[Licht]} and the sketch of the entire series of operas in November 1977, on the balcony of a temple in Kyoto,” while in Japan after the \textit{Der Jahreslauf} (The Course of the Years) commission. To Stockhausen, organizing his efforts towards a unified goal was more meaningful and set a “higher standard for mastery” than isolated compositions. Later, Stockhausen used \textit{Der Jahreslauf} as Act 1 of his opera \textit{Dienstag} (Tuesday 1977, 1987–91) and it was delineated as \textit{Course of the Years} (“The” was omitted). In the liner notes for \textit{Dienstag} (Tuesday), Stockhausen said that, “during the composition period in Kyoto, the ideas for the entire cycle \textit{Light: The Seven Days of the Week} came into being. It was then planned that \textit{Course of the Years} would be Act I of \textit{Tuesday} from \textit{Light}.”

Stockhausen’s avant-garde \textit{Licht} operas were all devised using a “super-formula” composed in 1977 when the plan for the opera cycle was conceived. Stockhausen created nearly every aspect of these productions including text, music, and staging. The operas were filled with symbolism and have a ceremonial feel in the spirit of traditional Japanese theater. Instrumental and electronic music are major components in the operas. The saxophone is used in

\begin{itemize}

\end{itemize}
three of the operas: *Donnerstag* (Thursday), *Samstag* (Saturday), and *Dienstag* (Tuesday).

The *Klang* Years (2004–2007)

*Klang: Die 24 Stunden des Tages*  
(Sound: The 24 Hours of the Day)  
Hours 1–21 = ca. 11 hours 28 minutes

Stockhausen completed his *Licht* opera cycle and began his next major project *Klang: Die 24 Stunden des Tages* (Sound: *The 24 Hours of the Day*, 2004–2007). Just as *Licht* has an opera for each day of the week, *Klang* was to have a piece for each hour of the day. Before his passing, he completed Hours 1–21 of the collection. Spirituality permeates *Klang* (sound), which, also like *Licht* (Light), includes references to *The Urantia Book* and Christianity.

The twenty-one pieces are chamber works, including works for one to three acoustic instruments, a piece of electronic music, and pieces of electronic music with acoustic instruments; each piece is to be performed with a sound projectionist. (A chart listing the instrumentation for each piece from *Klang* is included below in Figure 1.) Two pieces from *Klang* make use of the soprano saxophone. Hour 12, *Erwachen*, is for soprano saxophone, trumpet, and cello. Hour 20, *Edentia*, is for soprano saxophone and electronic music. Stockhausen spent less than four years working on *Klang* and almost thirty on *Licht*, yet *Klang* has nearly fifty minutes of music for saxophone, whereas *Licht* has less than thirty minutes.
Figure 1. Stockhausen’s *Klang: The 24 Hours of the Day*

<table>
<thead>
<tr>
<th>Hour No.</th>
<th>Title</th>
<th>Instrumentation</th>
<th>Date</th>
<th>Length</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour 1</td>
<td><em>Himmelfahrt</em> (Ascension)</td>
<td>Organ or synthesizer, soprano, &amp; tenor</td>
<td>2004–2005</td>
<td>36 min.</td>
<td>Deep violet-blue</td>
</tr>
<tr>
<td>Hour 2</td>
<td><em>Freude</em> (Joy)</td>
<td>Two harps</td>
<td>2005</td>
<td>40 min.</td>
<td>Medium blue</td>
</tr>
<tr>
<td>Hour 3</td>
<td>Natürliche Dauern 1–24 (Natural Durations)</td>
<td>Piano</td>
<td>2005–2006</td>
<td>ca. 140 min.</td>
<td>Teal blue</td>
</tr>
<tr>
<td>Hour 4</td>
<td><em>Himmels Tür</em> (Heaven’s Door)</td>
<td>Percussionist &amp; little girl</td>
<td>2005</td>
<td>ca. 28 min.</td>
<td>Hellblau</td>
</tr>
<tr>
<td>Hour 5</td>
<td><em>Harmonien</em> (Harmonies)</td>
<td>Bass clarinet, flute, or trumpet</td>
<td>2006</td>
<td>ca. 15 min.</td>
<td>HKS 50 light, greenish blue</td>
</tr>
<tr>
<td>Hour 6</td>
<td><em>Schönheit</em> (Beauty)</td>
<td>Flute, bass clarinet, &amp; trumpet</td>
<td>2006</td>
<td>ca. 30 min.</td>
<td>HKS 51 turquoise blue</td>
</tr>
<tr>
<td>Hour 7</td>
<td><em>Balance</em></td>
<td>Flute, English horn, &amp; bass clarinet</td>
<td>2007</td>
<td>ca. 30 min.</td>
<td>HKS 54 bluish green [Verkehrsgrün]</td>
</tr>
<tr>
<td>Hour 8</td>
<td><em>Glück</em> (Bliss)</td>
<td>Oboe, English horn, &amp; bassoon</td>
<td>2007</td>
<td>ca. 30 min.</td>
<td>HKS 60 yellowish green</td>
</tr>
<tr>
<td>Hour 9</td>
<td><em>Hoffnung</em> (Hope)</td>
<td>Violin, viola, &amp; cello</td>
<td>2007</td>
<td>ca. 35 min.</td>
<td>HKS 67 yellowish green</td>
</tr>
<tr>
<td>Hour 10</td>
<td><em>Glanz</em> (Brilliance)</td>
<td>Oboe, clarinet, bassoon, trumpet, trombone, tuba, &amp; viola</td>
<td>2007</td>
<td>ca. 40 min.</td>
<td>HKS 69 sulphur green</td>
</tr>
<tr>
<td>Hour 11</td>
<td><em>Treue</em> (Fidelity)</td>
<td>E♭ clarinet, bassett horn, &amp; bass clarinet</td>
<td>2007</td>
<td>ca. 30 min.</td>
<td>HKS 2 zinc yellow</td>
</tr>
<tr>
<td>Hour 12</td>
<td><em>Erwachen</em> (Awakening)</td>
<td>Soprano saxophone, trumpet, &amp; cello</td>
<td>2007</td>
<td>ca. 30 min.</td>
<td>HKS 3 bright yellow [Verkehrs-gelb]</td>
</tr>
<tr>
<td>Hour 13</td>
<td><strong>Cosmic Pulses</strong></td>
<td>Electronic music (8-channel elec., loudspeaker pairs, mixing board, &amp; sound projectionist)</td>
<td>2006–2007</td>
<td>32 min., 5 sec.</td>
<td>HKS 4 yellow</td>
</tr>
<tr>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Hour 14</td>
<td><strong>Havona</strong></td>
<td>Bass &amp; electronic music (layers 24, 23, 22 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>25 min., 10 sec.</td>
<td>HKS 5 melon yellow</td>
</tr>
<tr>
<td>Hour 15</td>
<td><strong>Orvonton</strong></td>
<td>Baritone &amp; electronic music (layers 21, 20, 19 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>24 min.</td>
<td>HKS 6 yellow orange</td>
</tr>
<tr>
<td>Hour 16</td>
<td><strong>Uversa</strong></td>
<td>Bassett horn &amp; electronic music (layers 18, 17, 16 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>22 min., 40 sec.</td>
<td>Orange</td>
</tr>
<tr>
<td>Hour 17</td>
<td><strong>Nebadon</strong></td>
<td>Horn &amp; electronic music (layers 15, 14, 13 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>21 min., 40 sec.</td>
<td>HKS 10 orange</td>
</tr>
<tr>
<td>Hour 18</td>
<td><strong>Jerusem</strong></td>
<td>Tenor &amp; electronic music (layers 12, 11, 10 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>20 min., 40 sec.</td>
<td>HKS 22 blood orange</td>
</tr>
<tr>
<td>Hour 19</td>
<td><strong>Urantia</strong></td>
<td>Soprano (live or prerecorded) &amp; electronic music (layers 9, 8, 7 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>19 min., 40 sec.</td>
<td>HKS 23 fire engine red [Verkehrsrot]</td>
</tr>
<tr>
<td>Hour 20</td>
<td><strong>Edentia</strong></td>
<td>Soprano saxophone &amp; electronic music (layers 6, 5, 4 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>18 min., 40 sec.</td>
<td>HKS 25 raspberry red magenta red [Telemagenta]</td>
</tr>
<tr>
<td>Hour 21</td>
<td><strong>Paradies</strong> (Paradise)</td>
<td>Flute &amp; electronic music (layers 3, 2, 1 from <strong>Cosmic Pulses</strong>)</td>
<td>2007</td>
<td>18 min, 2 sec.</td>
<td>HKS 31 magenta</td>
</tr>
</tbody>
</table>
In comparing the titles of *Licht* (Light) versus *Klang* (Sound), one notes that the former is related to the visual and the latter to the aural. This comparison can be drawn in the works of each cycle; *Licht* is a series of staged works, in which the music was combined with visual actions, and *Klang* is a series of concert pieces though Hour 4, *Himmels-Tür* (Heaven’s Door), does have a theatrical aspect to it.

A deviation from the emphasis on the aural aspect in *Klang* is that Stockhausen assigned a color for each piece, which can be seen on the covers of the scores and CDs. For most of the *Klang* pieces, he suggested the performers wear the corresponding color. For audience members, this can help differentiate the pieces in their minds; days or months later, they can visualize the performance and remember the color the performers wore. For the performer, wearing a particular costume may also be a memory aid. Kathinka Pasveer, in discussing her gowns, mentioned that when she puts on the costume for a particular piece, it focuses her mind for performing that particular piece.²⁷

Within *Klang*, Hours 1–4 are grouped together, 5–12, and 13–21. The music of the solo piece Hour 5, *Harmonien* (Harmonies), was the basis for the trios of Hours 6-12. Layers of electronic music from Hour 13, *Cosmic Pulses*, were used in creating Hours 14–21, each of which is for a soloist with electronic music. When looking at the time of day, the morning hours, Hours 5–12, are grouped together and the afternoon/evening hours, Hours 13–21, are grouped

²⁷ Kathinka Pasveer, master class attended by author, Kürten, Germany, August 2010.
together. It is possible that the unfinished Hours 22–24 were to be grouped with Hours 1–4, to complete the night hours.

Rather than a super-formula as used in Licht, the compositional thread throughout Klang was a 24-note row, for the twenty-four hours of the day, which spans the twenty-four notes of two octaves of the chromatic scale.\footnote{The Klang row is similar to the one Stockhausen used much earlier for his piece Gruppen (1955–1957).} The Klang row is reproduced in Musical Example 2. The numbers above the staff label the pitches in ascending order, thus “1” is the lowest pitch of the twenty-four chromatic notes of the row, and “24” is the highest. The numbers below indicate the intervals between the pitches. The row is based on a single hexachord. If, using theorist Allen Forte's terminology, the first hexachord (E, C, F, D, C#, D#) is the prime form, then the second hexachord is T6R, the third is TOR, and the fourth is T6. In other words, the second twelve-tone row has the same two hexachords as the first, but each is in retrograde. The tone row in its original form was used for Hours 1–4 and 13–21. Hours 5–12 were based on the inverted form of the tone row.

Musical Example 2. Klang Row

Source: Tone row diagram received from Jerome Kohl, email correspondence with author, 10 September 2010.
Stockhausen began *Klang* after completing his *Licht* opera cycle. In *Klang*, *The Urantia Book* continues to be an influence. The twenty-one chamber works from *Klang* are compositions based on a 24-note row. Two of the works include a soprano saxophone: Hour 12, *Erwachen*, and Hour 20, *Edentia*. *Erwachen*, for soprano saxophone, trumpet, and cello, is the final trio based on the music of Hour 5. Hour 20, *Edentia*, is for solo soprano saxophone with layers of electronic music from Hour 13, *Cosmic Pulses*.

**Catalog of Saxophone Works**

Stockhausen’s catalog lists twenty-five works that include saxophone. (For a complete listing, see Appendix A.) In all, there are twenty-one distinct saxophone works, as some are published in multiple formats. These works can be grouped into five categories. First, saxophones are included in Stockhausen’s works for large ensemble, such as *Gruppen* and *Carré*. Saxophonists also play Stockhausen’s pieces for non-specific melody instrument (i.e., *Solo* and *In Freundschaft*). Additionally, some of Stockhausen’s saxophone pieces are instrumental works extracted from his operas. There are three such pieces for saxophone: *Saxophon*, *Knabenduett*, and *Linker Augentanz*. (Stockhausen considerably expanded *Linker Augentanz* as a concert piece.) A fourth category is comprised of transcriptions made by Stockhausen himself (i.e., *Entführung*, translated as “Abduction,” was originally for piccolo, *Amour* was originally for
clarinet, and *Piccolo*, as the title suggests, was originally for piccolo). ²⁹ The fifth and final category is Stockhausen’s saxophone works from *Klang* (Sound). *Klang*, a set of twenty-one chamber works, includes soprano saxophone in two pieces, *Erwachen* and *Edentia*.

Throughout his long, influential career, Stockhausen created a distinctive body of works. His saxophone music is a part of this unique repertoire. The saxophone pieces are varied, yet all sound and are visually characteristic of Stockhausen.

²⁹ These transcriptions, as well as *Saxophon, In Freundschaft*, and *Knabenduett* can be heard on Stockhausen Compete Edition CD 78 recorded by Julien Petit.
CHAPTER 2  
FEATURES OF STOCKHAUSEN’S CREATIVE OUTPUT

Stockhausen’s saxophone pieces can be described in relation to features of Stockhausen’s creative output such as the formal structure of his works, the visual aspects of his pieces, the spatialization of sounds, and the use of electronic media. Stockhausen used formulae in the construction of his music for thirty years and then continued using a tone row to organize his pieces. Each of the saxophone pieces analyzed below is constructed with a formula or simply a tone row. Stockhausen was not only concerned with the aural aspects of his pieces, but also with the visual presentation of them. Often in score notes he included extra-musical items about the production of his pieces, such as instructions on stage set-up, indications for where the performer should position oneself on stage, and lighting guides. He even went so far as to have his performers move around the stage and gesture with their bodies while playing. Stockhausen used directional projection, or spatialization, as a compositional element in some of his works, including one of the saxophone pieces. The electronic music of this piece is projected from eight different locations around the audience. These features—formal structure, visual elements, spatialization, and electronic media—are discussed in more detail below.
Formula Composition

A significant part of Stockhausen’s compositional output was constructed using a formula. As mentioned above, a formula is a melody or set of counterpointed melodies that is the kernel from which a musical composition is created. The formula can serve as the framework for a piece by being continuously, systematically altered. A formula can also project the proportions and form of a piece.

When discussing formula composition, Stockhausen’s piece Mantra (1970) is a useful example. Stockhausen commented on the formula of Mantra:

This formula is repeated all the time in different degrees of expansion and contraction. It’s not varied, only expanded. This procedure differs from those in traditional music where you develop a theme or add or leave something out: it’s expanded in duration—in time—and in space, which means in its intervals. So the first major second, for example, can become a minor third or a major third or a fourth, etc.\textsuperscript{30}

The Mantra formula is always present throughout the piece, but it is always transformed. The title “Mantra” is descriptive. It refers to repetition and avoids connotations of traditional forms such as the theme and variation. (More on Mantra is below in the chapters on Saxophon and Edentia.) Following Mantra, Stockhausen used formulae as the basis of construction for all his pieces through his mammoth opera cycle Licht, which was organized via a “super-formula” or a formula of a higher level of detail and complexity. The “super-formula” included three layers of melody in counterpoint.

\textsuperscript{30} Jonathan Cott, Stockhausen: Conversations With the Composer (New York: Simon and Schuster, 1973), 221–222.
Stockhausen scholar Jerome Kohl cites Hermann Conen’s book *Formel-Komposition: zu Karlheinz Stockhausens Musik der siebziger Jahre* as the most important source on the topic of Stockhausen’s formula compositions.\textsuperscript{31} Additionally, he said, “Conen makes a distinction between works that are formula compositions (such as *Mantra*, *Inori*, *Jubiläum*, and *Licht*), whose forms are projections of their respective formulae, and those that use melodic formulae internally, though their overall designs do not correspond (*Sirius*, *Amour*, and *In Freundschaft*).”\textsuperscript{32} A formula can serve as more than mere melodic material, it can serve as a diagram for the large-scale form of the piece.

Because of the number of options available when composing with a formula, it might be more meaningful to describe what a formula is not. A formula can be continuously cycled throughout a piece, as in *In Freundschaft*, yet it is not varied in the manner of a theme and variations. A formula composition can be a compositional procedure, but not like fugue because there are not particular events that need to happen. A formula is more flexible and gives more freedom of choice to a composer than total serialism. With total serialism, once the parameters are chosen they dictate many aspects of the composition, such as pitch, dynamic level, duration, and register. Stockhausen favored the flexibility afforded by formula construction.

\textsuperscript{32} Jerome Kohl, email correspondence with author, 3 September 2010.
Visual Elements

The visual aspects of Stockhausen’s concert music serve to clarify what is happening musically and to be beautiful. In his scores, Stockhausen often specified motions for the musicians to make while playing. In *In Freundschaft*, the instrumental soloist is instructed to coordinate the angle of her instrument to the pitch range she is playing. For example, when playing a high note she would point her instrument higher in the air than when playing a note in the middle range. Sometimes, however, instructions on how the performer should move are not included and it is understood that a performer should incorporate movement that is graceful and fitting for the music, as is the performance practice for *Edentia*, Hour 20 of *Klang*. The author suspects the idiomatic movements associated with Stockhausen’s music were influenced by the motions of the performers close to him: his long-time collaborators, Suzanne Stephens (clarinet) and Kathinka Pasveer (flute), and others.

A live concert performance is intrinsically a dramatic experience; the visual and the aural dimensions are brought together and the performer on stage adds a human element. In the introduction to his interview with Stockhausen, Malcolm Ball mentioned that, “From 1974 theatre and theatrical elements begin to take a much firmer grip on Stockhausen’s music beginning with *Atmen gibt das Leben...* (Breathing gives life...), *Sternklang* (Star Sound), *Herbstmusik* 33

33 Kathinka Pasveer, master class on *Edentia* with author, Stockhausen Courses and Concerts, Kürten, Germany, August 2010. Many of Stockhausen’s solo and chamber pieces are to be performed from memory, which facilitates the performers’ motions.
(Autumn Music) (1974), Musik im Bauch (Music in the Belly), and Harlekin (1975). In other words, from 1974 onwards, one sees more visual elements, such as costumes, props, performer motion, and staging in Stockhausen’s concerts.

With Stockhausen’s piece Harlekin (ca. 43 min., 1975) for solo clarinet, for example, he blurred the lines between a concert work and theatrical production. In Harlekin, the performer begins playing from off-stage and moves towards the front of the stage by spiraling her way towards the footlights. As she plays, she is to take on the roles of different characters, which she portrays with body gestures and facial expressions, many of which are indicated throughout the score. To finish, she spirals her way back off-stage. In this piece, Stockhausen specified other visual details, including instructions for the spotlight operator to follow the performer, how the theater should be lit before and during the performance, and a description of the Harlequin costume to be worn by the performer. (Additional discussion of Harlekin appears in the chapter on Saxophon.)

Stockhausen’s thoughtful attention to the extra-musical aspects of his pieces is apparent in his detailed score notes about items such as the lighting of the hall and the stage, the arrangement of performers on stage, and the color of the performers’ costumes. Stockhausen included detailed notes in all his saxophone scores. In the score notes for Saxophon Stockhausen said,

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The bongo player is seated on a stool – his profile to the audience – at some distance from the saxophone player and watches him. The saxophonist plays towards him, at a slight diagonal to the audience...Saxophone as a solo piece could be played – in the context of a programme with other compositions – at a completely unexpected place in the audience. In that case, the player should only appear through the fading in of a follower spotlight aimed at him. At the end, he disappears when the light is very slowly faded out.35

This careful attention to detail stems from a pragmatic spirit (rather than a micromanaging one). When one thinks about the level of thoughtfulness and care for detail that go into a performance, one realizes that performers must make countless decisions. Thus Stockhausen’s attention to detail is a sensitivity to a performer’s undertaking in presenting a piece to an audience. He understands that even a performer’s costume, worn for a particular piece, should be carefully planned in advance and be suitable for the music to be performed. Stockhausen’s forethought to note in his scores his choices on the aspects of production, frees performers to put their energy into interpreting the music.

Spatialization and Electronic Media

Stockhausen acted as sound projectionist for all his concerts. He wanted each member of the audience to be able to hear with extreme clarity. As he said, “The goal that I pursue...is that of general diffusion of sound, wherever it is perceptible, as far as the sides and the far end of an environment. I want each

person to hear the music...to hover in flight above the orchestra.”

He wanted a balance of the instruments’ sounds—no one instrument overtaking another. Also, when setting up for a performance, he attempted to attenuate particular acoustical idiosyncrasies of a hall:

I consider it important that at a concert...that there are no acoustic follies resulting from different kinds of walls in an auditorium, which sometimes favour a high frequency, sometimes a low one. Let’s suppose that one part of the public has found seats in the back rows of the stalls, and that the sound of the bass tuba blasts out at them. How can one attenuate the effect? By placing a loudspeaker next to that section of the audience so that the resonance extends from one end of the hall to the other. By proceeding in this fashion, I obtain an authentic musical panorama, although in a necessarily distorted perspective. The effect is a little like that of an enveloping sphere of music, transmitted through headphones.

As sound projectionist, he would listen and adjust for inequalities around the hall resulting from different kinds of walls, in order to create, artificially, a space that did not favor any particular frequencies.

Not only did Stockhausen want an audience to hear sounds clearly and in good balance, he wanted them to be able to hear the direction from which the sounds were projected:

I'm ever more convinced about supplying the public in the hall with the possibility of perceiving the source of the sound-waves within a circuit of 360 degrees. In fact, in my method of composition, the movement and the direction of the sounds are of paramount importance. They count as much as the volume and the timbre, and little less than the sound-frequencies.

“Spatialization,” refers to the directional projection of sound into a space or towards an audience. “Space music” is music that uses spatialization as a

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38 Tannenbaum, *Conversations with Stockhausen*, 38.
compositional parameter, thus the direction from which sounds are projected is an aspect composed into the piece and is a central feature of the piece.

Throughout his career, Stockhausen was intensely interested in how sounds were projected into a space. The sounds were usually projected via electronic means using microphones, speakers, and with Stockhausen listening and adjusting from the sound board in the center of the hall.39

Stockhausen put special care into the spatialization of his pieces, so much so, that his public image was molded accordingly. Often, he was pictured, and remembered by audience members, behind the mixing board running the controls in live time. For example, on a cover of a volume of Texte zur Musik, a several-volume series of texts describing his music, he is pictured at the sound board.

Stockhausen took sound projection to the extreme at the Osaka World’s Fair (1970) for which a special hall was built to his specifications for the playing of his music. It was realized by architect Fritz Bornemann of Berlin and commissioned by the German government. For six months Stockhausen’s music was performed daily at the Word’s Fair, by himself and twenty-one soloists from 2:30pm to 10pm. His entire electronic output and many of his acoustic pieces were performed. The spherical design of the space allowed him to project sounds from speakers set up in specially calculated places around the hall. Stockhausen said, “The public was surrounded by as many as fifty loudspeakers, arranged in

39 In his scores Stockhausen lists the “sound projectionist,” as he called the person at the mixing board, right alongside the other personnel of a piece.
ten concentric circles, from the zenith to the south pole of the spherical space.”

Since historical and modern concert halls are not set up for this kind of spatialization of sound, Stockhausen later used a more limited number of directions of sound projection.

In his concerts, Stockhausen typically used four to eight speaker locations around the audience. Microphones were positioned to pick up all the performers’ sounds, so that they could be put into the mix. It was not necessary for each individual to have a microphone, but a few could use one. Stockhausen would then have a painstaking sound check to check for balance and ensure that no particular sound was overtaking another in any particular part of the hall. When using speakers, it is conceivably possible for one to hear the details of the sounds clearly from anywhere in the space.

One can have sounds projected from a variety of different directions. This makes for a more varied listening experience and has given composers a new parameter when composing music. In Stockhausen’s early electronic piece Gesang der Jünglinge (Song of the Youths, 1956) he placed speakers in all four corners of the auditorium and in the center of the stage. He organized the spatialization of the sounds serially, just as a composer would order the pitches of a piece, using a series established in advance. In other words, he used a

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40 Tannenbaum, Conversations with Stockhausen, 46.
41 Originally there was a fifth speaker on stage, however this did not continue as standard performance practice, so these sounds were projected through one of the other four speakers.
42 This was the first time an electronic piece serially organized the projection of the sound into a space. “Karlheinz Stockhausen’s Gesang der Jünglinge (1956),” Columbia University Computer Music Center,
predetermined plan to decide from what direction in the hall a particular sound would be projected towards the audience. Thus, the speakers were not merely for amplification, but so that one could hear distinct sounds coming from each direction.

Because of the vast possibilities electronic media enables, spatialization is usually thought of in terms of electroacoustic music. One can, however, experiment with the spatialization of acoustic sounds as well, with careful placement of instrumentalists within or around a space. For example, in Donnerstag’s (Thursday’s) “Farewell” five trumpeters played the final music from rooftops around the opera house’s entrance at its premiere in Milan. In Gruppen, the audience is seated in the middle and the orchestra is divided into three groups arranged around the audience.

Electronic media not only makes the spatialization of sound possible in more ways than with acoustic instruments alone, but also greatly enhances the sound palette available to a composer. Additionally, from what is feasible with acoustic instruments, the electronic studio extends musical parameters, such as dynamic contrast, tempo variations, and sound envelope (beginning, middle, and end of sound) possibilities. Electronic media also allows for a degree of accuracy and refinement, exceeding the capability of a human performer. The electronic studio enables one to experiment with sound parameters and recording techniques and any mixture thereof. Stockhausen’s experimentation in the

studio with new sounds, electronic sounds mixed with recorded sounds, and recording techniques drew the attention of the popular music world. The influence of Stockhausen’s pioneering research in the electronic studio is reflected in The Beatles’ “Revolution 9” and other songs. The Beatles also included his image on the cover of their *Sgt. Pepper’s Lonely Hearts Club Band* album. Artists ranging from Miles Davis to Björk list Stockhausen as an influence. Stockhausen continued to use the electronic studio as a resource for his experimentation and creativity throughout his career. At the end of his career, his sound projection experiments for *Cosmic Pulses*, having the sounds “move” around the audience using eight different speaker locations, drew interest from a new generation of electronic musicians.

Of the musical explorations Stockhausen made throughout his career, one can glimpse in the saxophone works the innovations that became common to Stockhausen’s musical language. As a young man he pushed the limits of total serialism and then backed away from such rigorous controls for the freedom formula composition afforded. Several saxophone pieces are constructed via a formula. Later he returned to using simply a tone row; he composed two saxophone pieces during this time. The visual component of composition became a feature of his writing and performer movement became an integral part of wind instrument performance practice of his music. Early in his career, he began researching and creating electronic music. In his later years he was still exploring
the possibilities the studio had to offer, especially in the area of spatialization.

One of his late pieces combines octophonic electronic music with a solo soprano saxophone.
CHAPTER 3

INVESTIGATION OF SIX SAXOPHONE PIECES

Six of Stockhausen’s saxophone pieces will be discussed in more detail in the following chapters. These pieces were selected because they prominently make use of the saxophone, or have often been played by saxophonists, as is the case for *In Freundschaft*, a piece for any melody instrument.\(^\text{43}\) The saxophone works discussed are from 1977 or later, and are presented chronologically:

- *In Freundschaft* (In Friendship 1977)
- *Saxophon* (1977)
- *Knabenduett* (Boys’ Duet 1980)
- *Linker Augentanz* (Left-Eye Dance 1983/90)
- *Erwachen* (Awakening 2006/7)

\(^{43}\) The transcriptions *Entführung* and *Amour* are also often played by saxophonists.
CHAPTER 4

IN FREUNDSCHAFT

In Freundschaft for unspecified melodic instrument, ca. 15 minutes, 1977

Though originally for clarinet, In Freundschaft ("In Friendship") was conceived as a piece for any melodic instrument. It was composed as a birthday gift for clarinetist Suzanne Stephens, and was premiered on that occasion by two flutists, friends of Ms. Stephens, on July 28, 1977. In April 1978, Stockhausen elaborated and lengthened the piece, making it into the work we are familiar with today. It is one of Stockhausen’s most studied works among soloists.

Saxophonist John Sampen approached Stockhausen about creating a version of In Freundschaft for the saxophone. Stockhausen reworked the piece for saxophone and Sampen premiered this version on soprano saxophone in 1982. In 1983, Stockhausen collaborated with saxophonist Hugo Read in preparing the saxophone score for publication.

Stockhausen gave a lecture using In Freundschaft to demonstrate detailed listening, for form and development. The lecture was transcribed and published as “The Art, To Listen.” It includes a complete analysis and discussion of the systematic compositional procedure used in In Freundschaft.

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44 Karlheinz Stockhausen, “Saxophon: (aus Jahreslauf) vom Dienstag aus Licht: für Sopransaxophon und Bongo oder als Solo für Sopransaxophon, 1977, Werk Nr. 2. Ex 47.” (Kürten, Germany: Stockhausen-Verlag, 1999), score notes, IV.

45 Lecture given on October 20, 1980, at the University of Mainz.

Formula and *In Freundschaft*

The formula of *In Freundschaft*, reproduced in Musical Example 3, consists of two melodic lines in counterpoint. Except for two interruptions, the formula is continuously repeated until the end of the work, while each time systematically altered. The formula, or blueprint, of *In Freundschaft* is cycled through seven times over the course of the piece.

**Musical Example 3. *In Freundschaft* Formula (diagram in the key of the clarinet version)**

![Formula of IN FRIENDSHIP](image)


The formula for *In Freundschaft* consists of five pointillistic *limbs* or segments (see the encircled numbers in Musical Example 3). Each limb has one to seven notes. These limbs combine together in prescribed order to form an upper and a lower layer or melody. The upper layer has all five limbs in order; see encircled numbers 1-2-3-4-5 in the top stave of Musical Example 3. The lower layer is the retrograde of the upper layer and is labeled 5-4-3-2-1 in the
bottom stave of Musical Example 3. *In Freundschaft*, in total, has three layers: an upper, middle, and lower. The middle layer is a trill in the middle register that is interjected. These three melodic layers together, along with their corresponding rhythms, constitute the formula. Stockhausen stated in his lecture that the upper layer or line is “gentle,” “high,” and “melancholic” while the lower line is “loud” and “optimistic.” “The two characters are opposites.”

*In Freundschaft* begins with a statement of the upper layer of the formula, seen in the first line of the saxophone score. Next the two pitches of the middle layer are heard. The two pitches of the middle layer are the same as the last two pitches of the fifth limb (in the saxophone score D# & E). The two pitches repeat over and over while gradually accelerating until they become a trill in the sixth staff of the saxophone score. Finally, in lines seven and eight, all of the layers are combined and the formula in its entirety is heard for the first time.

After its initial appearance, the complete formula is presented six more times throughout the piece. Figure 2 lists where each cycle of the formula begins and also where the formulae are interrupted. Twice “explosions,” or cadenzas that embellish the musical material, interrupt the formula. Stockhausen said, “I felt the need for a passage of greater density and more rapid motion, and for a second passage in which the emancipation of the trill could be more fully experienced.”

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48 “Explosions” (Explosionen) is the term that Stockhausen used in “The Art, To Listen,” 15.
<table>
<thead>
<tr>
<th>Formula Cycle/Explosion</th>
<th>Page</th>
<th>Line</th>
<th>Measure (if other than the first measure of the line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula Cycle 1</td>
<td>Page 1</td>
<td>Line 7</td>
<td></td>
</tr>
<tr>
<td>Formula Cycle 2</td>
<td>Page 2</td>
<td>Line 1</td>
<td></td>
</tr>
<tr>
<td>Formula Cycle 3</td>
<td>Page 2</td>
<td>Line 3</td>
<td></td>
</tr>
<tr>
<td>Explosion</td>
<td>Page 2</td>
<td>Line 6</td>
<td></td>
</tr>
<tr>
<td>Formula Cycle 4</td>
<td>Page 3</td>
<td>Line 1</td>
<td>m. 2</td>
</tr>
<tr>
<td>Formula Cycle 5</td>
<td>Page 3</td>
<td>Line 3</td>
<td>m. 3</td>
</tr>
<tr>
<td>Formula Cycle 6</td>
<td>Page 3</td>
<td>Line 5</td>
<td>m. 6 (Last measure of line 5)</td>
</tr>
<tr>
<td>Explosion (Cycle 7 with trill interrupting rhythmic motion)</td>
<td>Page 4</td>
<td>Line 1</td>
<td></td>
</tr>
<tr>
<td>Formula Cycle 7</td>
<td>Page 4</td>
<td>Line 7</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. *In Freundschaft* Formula Cycles. Listed are the locations in the saxophone score of the beginning of each formula cycle and explosion.

The formula, or set of layers, is altered systematically each time it recurs. The upper layer is transposed down a half step each time, while the lower layer is raised a half step. With each transposition they are lessening the gap between themselves. By the end the layers come together. The middle layer is never transposed. In the last hearing of the formula the layers have joined and the middle layer trills no longer need to serve as a “line of orientation and no longer separate the limbs.”\(^{50}\) In this final hearing the trill is placed on various pitches.

At each repeat of the formula, not only do the layers get transposed, but limbs get exchanged between layers. For example, on the third hearing of the formula the fourth limb of the upper layer switches places with the second limb of the lower layer. When the limb takes its new place, it also is transposed

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\(^{50}\) Stockhausen, “The Art, To Listen,” 14.
accordingly, so that, for example, on the third hearing of the formula every limb in the lower layer is up a whole step from its initial pitch level.

Stockhausen also chose to make alterations to the limbs as the piece progressed, especially changing articulations. He discussed the specific irregularities and his reasoning for them in “The Art, To Listen.” In the quotation below, about an irregularity from Cycle 5, he discusses how he highlights and augments a particular note.

The limb that was still played in its original form in the previous (fourth) cycle (lower limb 2) is now “examined under a microscope” musically. The second note of the limb has been expanded to more than 4 times its original length and has 3 decrescendo-crescendo waves as well as as well as accents...Moments like this can be found repeatedly in all of my works: moments in which I stop the structural flow and take one element — a note, a chord, a colour, a manner of playing etc. — put it under a magnifying glass, open, throw light on it, listen to its inner structure in depth. If I use a microphone in this procedure I call it “microphoning.” I go into the particular; the sensual aspect of the sound takes over for a moment; time stands still.51

The changing of the limbs is not a systematic process that is part of the formula; Stockhausen deviated from the plan by following his musical tastes.

In examining the grace note that introduces the second formula statement (page 2, line 1) and the following formula statements, one can see that this grace note is the last note of the preceding formula. It is Limb 1, which is the last limb of the lower layer and this limb has only one note. In the fifth statement, this limb, or grace note, moves to the upper layer range and is correspondingly transposed down a perfect fourth. In the last formula statement the grace note we expect is F#, but it is an F. The “Explosion” section (page 4, line 3) that

precedes this statement, however, does begin with the F♯ grace note to the F quarter note. This “explosion” begins as if it is the seventh statement of the formula, but the middle layer trill “permeates the entire formula...and thereby brings about the dissolution in rhythmic motion.”

After the “explosion,” and at the same transpositional level, the final hearing of the formula (page 4, line 7) is heard with the original rhythmic motion. The formula cycle begins on F and also ends with F. This symmetry is discussed below.

By the last hearing of the formula, beginning on page 4, line 7, the top layer of counterpoint has been transposed downward and the lower layer upward. They have met in the middle of the range. In Musical Example 4, one can see the last formula cycle of the clarinet version. Additionally, when one looks at the layers together as one line, one sees the pitches form a long symmetrical unit. The first pitch of the final formula statement (page 4, line 7) and the last pitch (last measure of piece) are both the same pitch (F in saxophone score). The second pitch and the second-to-last pitch are the same (D♯ in the saxophone score). If one continued to compare the pitches in this manner, one would see that the pitches continue to form a palindrome, with the exception of five notes raised a half step, starting at the accelerando in the last line. The midpoint in the saxophone score is F on the last line, second and third pitches (B in the clarinet version). A diagram, from “The Art, To Listen,” illustrating this palindrome is reproduced in Musical Example 5 (diagram uses the clarinet pitch level, rather than the transposition level used for the saxophone version). In the diagram the

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rhythms and embellishments are omitted so that one may easily see the palindrome of pitches. For comparison, reprinted above it, in Musical Example 4, is the corresponding passage from the clarinet score, the last two lines of the piece.

Musical Example 4. *In Freundschaft* final formula statement (for clarinet)

Musical Example 5. Diagram illuminating the almost complete palindrome of pitches in the last cycle of the formula in the clarinet version of *In Freundschaft*

*Source: Musical Examples 4 & 5 are from Stockhausen, “The Art, To Listen,” 15.*
In 1971 Stockhausen said, “In the future I think we need more layers within compositions which have a strong directional orientation, and clearer developments.” In *In Freundschaft*, the upper layer works its way down and the lower works its way up toward the middle. The systematic changing of register is something *In Freundschaft* and *Kreuzspiel* (1951) have in common. The basic premise for the first movement of *Kreuzspiel* (Cross-play) is that the six notes in the highest register and six notes in the lowest register work towards each other and then pass each other, high moving to low, low moving to high so that by the end they have traded places. With *In Freundschaft*, as well as *Kreuzspiel*, Stockhausen created clear development. Stockhausen said, “Constantly renew and constantly repeat: that has always been at the heart of sequential form...Now, however, the formula is a means of re-introducing development to music, but in a completely new way.” Listening for how a musical idea changes and progresses over time is central to the formula composition *In Freundschaft*. Discussed below are the body movements of the performer that help to make the development even clearer.

**Movement and In Freundschaft**

Stockhausen included indications in the score for the performer to move during the performance:

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54 Quotation from 1971. Maconie, ed., *Stockhausen On Music*, 58. For a demonstration by Stockhausen on his use of sequence, see pages 57–58

From the 7th line on, the 3 musical voices (high melody, low melody, trills in the middle) should be clearly indicated by pointing the instrument to one side, to the other side, and in front of the body respectively, each trill being jerkily placed in a different position within a narrow, quasi circular area. At the same time, the energetic fragments should be played animatedly and markedly, and the quiet fragments motionlessly.

Further, the intervals and melodic lines should be drawn in the air by moving the instrument up and down in proportion to the sizes of the intervals. Avoid any movement during pauses (with the exception of the swaying movement starting with the 2nd line).  

The motions add another level of clarity in following the development of *In Freundschaft*. The performer is to point one’s saxophone to the side when playing a limb from the upper layer, to the other side when playing a limb from the lower layer, and in the middle for the middle layer. Also, the angle of the instrument is to correspond to the pitch level. The movements “should serve to elucidate the composition.”  

Stockhausen focused on the interconnectedness of body movement and music. In an interview with Mya Tannenbaum, a reporter for the Milan newspaper *Corriere della Sera*, Stockhausen said,

> Every gesture of the body must be made consciously, since it connects with a musical layer, articulated rhythmically, which the instruments represent. Nothing to do with a choreography created on the spot; the movements connect directly with the musical adventure. Music and dance are interdependent, and one notices the presence of the latter within the overall perception: while I hear the music, there’s a part that dances continually within me. And I don’t need any visual counterpart for this; in fact, it’s also like this when I compose or conduct an orchestra. The body of the gifted person, besides having all the technique necessary for dancing, is able to “musicalize” the gesture in a visual form that is truly
valid. And this is dance. What I mean is that dance expresses musical structure in a fundamental way. It expresses it for the joy of the eyes. This concept of a musician’s motions continued to be a part of Stockhausen’s vision for a musical performance throughout his lifetime. For instance, *Edentia* is a late piece from the *Klang* cycle that has no mention in the score notes about performer motions, yet they are expected. Performance practice dictates that the performer should show the audience what she is playing.

*In Freundschaft* is a piece that continues to inspire people to study and perform it. It was tightly constructed via its formula and systematic development. It gives a strong flavor of the essence of Stockhausen’s music; it was constructed with a formula, a framework Stockhausen used for more than thirty years. Also, instructions for the motions of the performer are included in the score, providing a scaffold for learning the movements idiosyncratic to Stockhausen’s music. This visual aspect, of the interpreter moving as she plays the music, is one that he continued to incorporate in his instrumental works throughout his career.

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58 Mya Tannenbaum, *Conversations with Stockhausen*, 59.
CHAPTER 5

SAXOPHON

*Saxophon*, ca. 6 minutes, from *Der Jahreslauf* (The Course of the Years), 1977, and included in *Dienstag* (Tuesday) aus *Licht*, Act 1: *Jahreslauf*, 1991

*Saxophon*, for soprano saxophone and bongo or solo soprano saxophone, is a stand-alone piece that was extracted from Stockhausen’s theater piece, *Der Jahreslauf* (The Course of the Years).

*Der Jahreslauf*

*Der Jahreslauf* (The Course of the Years) was the result of a commission by the Japanese National Theater in Tokyo to compose a work for gagaku ensemble and dancers. The instrumentalists and dancers of the Royal Gagaku Orchestra premiered the piece in October 1977. For the Japanese production, the title *Hikari* (fast light) with the subtitle *Jahreslauf* was used. In 1979, a concert version of *Der Jahreslauf* was created for European instruments, which became the more standard instrumentation. Figure 3 lists the original and western instrumentations.

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<table>
<thead>
<tr>
<th>Japanese Instruments</th>
<th>European Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sho</td>
<td>Harmoniums or synthesizers/samplers</td>
</tr>
<tr>
<td>Shoko</td>
<td>Anvil</td>
</tr>
<tr>
<td>Ryuteki</td>
<td>Piccolo flutes</td>
</tr>
<tr>
<td>Kakko</td>
<td>Bongo</td>
</tr>
<tr>
<td>Hichiriki</td>
<td>Soprano saxophones</td>
</tr>
<tr>
<td>Taiko</td>
<td>Bass drum</td>
</tr>
<tr>
<td>Gakuso</td>
<td>Harpsichord (cembalo) or synthesizer/sampler</td>
</tr>
<tr>
<td>Biwa</td>
<td>Electric guitar with plectrum</td>
</tr>
</tbody>
</table>

Figure 3. *Der Jahreslauf* Japanese and European Instrumentation

The soprano saxophone takes the place of the *hichiriki*. The *hichiriki* is a Japanese double reed, cylindrical, melody instrument used in traditional gagaku music. Pitch bending is a common ornament used by *hichiriki* players. In the CD booklet accompanying *Dienstag* (Tuesday), Stockhausen wrote that the soprano saxophone player should “imitate that manner of playing (especially the glissandi) and the timbres” of the *hichiriki*.

*Jahreslauf* stands apart from the style of the opera cycle in that it predates the construction of the super-formula. Besides the slight title change (removal of “Der”), other alterations were made as the original *Der Jahreslauf* was adapted for the opera, such as the accommodations made for the inclusion of commentary by Lucifer and Michael, who were not part of the original *Der Jahreslauf*, but are main characters in the opera. Also, in the opera all players are using the western instrumentation and are amplified.

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61 In the article in *Texte zur Musik*, Vol. 4, 1978 (pages 346 & 347), Stockhausen listed oboes as substitute for *hichiriki*, however soprano saxophones were the eventual choice.
Der Jahreslauf Plot

Der Jahreslauf (The Course of the Years) is a contest involving four runners. The goal is to keep them moving, despite distractions. The numerals of the year of the production are on the floor of the stage in large white lettering with red background. The runners run on these large white numbers, each on one of the digits. Each runner corresponds to a numeral from whichever year the production is staged, for example in 1977 the first runner ran on the number one, the second on the nine, the third on the seven, and the fourth on the seven. Each runner has a group of associated musicians. Using 1977 to demonstrate, the groups are listed below:⁶³

1. Millennium runner (der Jahrtausendeläufer)
   three *sho* (harmoniums or synthesizers/samplers)

2. Century runner (der Jahrhunderteläufer)
   three *ryuteki* (piccolos) and *shoko* (anvil) as a timer

3. Decade runner (der Jahrzehnteläufer)
   three *hichiriki* (soprano saxophones)⁶⁴ and *kakko* (bongo) as a timer

4. Year runner (der Jahresläufer)
   *gakuso* (harpsichord), *biwa* (guitar), and *taiko* (bass drum) as a timer

Throughout the production, a temptation (Versuchung) for the runners to stop, followed by a cheer (Anfeuerung) for them to continue, occurs several times. These interruptions and incitements to keep moving are all aided by prerecorded sounds and voices on a tape part that is played back during the performance.

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⁶³ Groups list from Stockhausen, *Texte zur Musik*, 4:346–347.
⁶⁴ Oboe is listed instead of soprano saxophones on *Texte zur Musik*, 4:347.
For the operatic version, the roles of Lucifer and Michael were added to the action of *Der Jahreslauf*. In this act of the opera (Act 1: Course of the Years, *Dienstag*), Lucifer challenges Michael to a contest, a *Course of the Years*.\(^{65}\) Lucifer will try to stop time and Michael must try to restart it. Michael gets the runners going again each time. The temptations and incitements are presented in the original *Der Jahreslauf* only by the tape part. The words spoken by the male voice on the tape are in the operatic version mostly spoken by Michael and Lucifer along with the recorded sounds.

*Der Jahreslauf* begins with the ringing of Geisha bells from the tape part. The participants of the contest and the musicians parade onto stage, and off at the end, in a ceremonial fashion. Stockhausen described the procession of the participants to their respective stage locations:

> From the left comes a procession wearing festive costumes. One man precedes and goes to the center. The others—some carrying instruments [some musicians are not carrying instruments]—go behind the numbers. The four runners stand at the beginning of the numbers.\(^{66}\) Beside them stand three helpers [three total, the “timers”]. The others [the musicians] sit in four groups behind the numbers. The man in the front announces in a high, drawn-out voice the Dancers and Musicians of the Course of the Years [see above].\(^{67}\)

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\(^{65}\) The challenge is made in an extra section after the geisha bells ring at the beginning of the piece. The bells ring again and the instrumentalists enter. The bass voice then sings a welcome.

\(^{66}\) Think of where you put pencil to paper to start to write the number, as the starting place for the runners. Remember the European “1” is written a bit differently from the American. The “9” is run circle first, as if dialing a rotary phone full circle.

The contest begins. (See Figure 4 for a chart listing the order of events.)

The musicians begin to play. A drone underlies melodic utterances by the piccolos and percussive sounds from the bongo and anvil. The drone emitted from the harmoniums has a similar timbre to the wailing soprano saxophone sounds that enter shortly after.  

The first temptation for the runners to stop is an announcing of flowers for the runners. On the tape part one can hear the sound of footsteps and clothing rustling. A voice, Stockhausen’s, narrates what is happening. Each of the runners will not accept the flowers (“Blumen für den Jahresläufer. Er wollte nicht...” or “Flowers for the year-runner. He does not want them...”). This is followed by the sound of clapping and a little girl’s voice encouraging the audience to applaud so the musicians will keep playing. The musicians respond with a tutti section and then a piccolo solo.

A group solo for the saxophones follows (measure 148 of Der Jahreslauf), laden with glissandi. The ringing of a dinner bell interrupts the action with the temptation of food and a male voice says, “Ein Koch. Exquisiten speisen.” (A cook. Exquisite dining.) A roaring lion gets the runners moving. A harpsichord (or synthesizer/sampler, originally gakuso) and guitar (biwa) duo is played. Then the next section is for the duo with the tutti ensemble.

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68 Harmoniums, instead of sho, traditional Japanese, chordal, wind instruments, are heard on Stockhausen Complete Edition CD 29.
<table>
<thead>
<tr>
<th>Track No.</th>
<th>Temptations to stop/Incitements to keep moving</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Entrance: Geisha Bells</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Tutti</td>
</tr>
<tr>
<td>3</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Temptation</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Temptation: ship’s bell – “Flowers…”</td>
</tr>
<tr>
<td>4</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Incitement</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Incitement: girl “Applause”</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Tutti</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Piccolo solo</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Tutti, <strong>group saxophone solo</strong></td>
</tr>
<tr>
<td>8</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Temptation</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Temptation: trolley - “A cook…”</td>
</tr>
<tr>
<td>9</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Incitement</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Incitement: lion’s roaring</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Duo: harpsichord &amp; guitar</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Tutti with harpsichord &amp; guitar duo</td>
</tr>
<tr>
<td>12</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Temptation</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Temptation: honking, motorcycle</td>
</tr>
<tr>
<td>13</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Incitement</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Incitement: girl – “10,000 Marks”</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>5&lt;sup&gt;th&lt;/sup&gt; Tutti</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Tutti with <strong>group saxophone solo</strong></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>Soprano <strong>saxophone solo</strong>: 1&lt;sup&gt;st&lt;/sup&gt; formula, <em>Harlekin</em></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>Soprano <strong>saxophone solo</strong>: 2&lt;sup&gt;nd&lt;/sup&gt; formula, <em>Inori</em></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>Soprano <strong>saxophone solo</strong>: 3&lt;sup&gt;rd&lt;/sup&gt; formula, <em>Mantra</em></td>
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<tr>
<td>19</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Temptation</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Temptation: blues – “Stark naked!”</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>Entrance of the percussionists</td>
</tr>
<tr>
<td>21</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Incitement</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Incitement: thunderstorm – 6&lt;sup&gt;th&lt;/sup&gt; tutti</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>Calm</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>Beginning of the final crescendo</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>Final chord and silence</td>
</tr>
</tbody>
</table>

The third interruption is by the honking of old-fashioned car horns, the kind with the bulb. (As an aside, these too sound similar in timbre to the soprano saxophone.) A rumbling motorbike speeds onto the stage. Then the girl’s voice is heard. She offers the winner of *The Course of the Years* “10,000 Mark” (Deutschmarks) and asks that they continue to play (“Bitte weiter spielen”). A tutti section begins and the motorbike whirs off stage.

As the tutti continues, a second saxophone group solo begins (measure 277 of *Der Jahreslauf*). A saxophone solo follows (measure 300 in *Der Jahreslauf*, measure 24 of *Saxophon*). The solo, played by the first soprano saxophonist, is in three parts. More on this is to come below in the *Saxophon* discussion.

Following the saxophone solo comes a fourth interruption, where a recording of a jazz band is heard that includes a saxophone solo (Stockhausen found this nightclub music in the Cologne radio collection). The man’s voice, (Stockhausen’s) grunts out a lascivious laugh, “huh, huh, huh, hoh, *Splitternackt* (stark-naked)!" In the opera, this remains and text is added for Michael and Lucifer. The recording continues and the percussionists enter playing a dance rhythm. A thunderstorm, with thunder from the tape part, arouses a great uproarious tutti section. The weakening storm is heard in the music and a calm section follows. The ending of *Der Jahreslauf* is a large crescendo, beginning in measure 412, climaxing in a long-held chord, followed by a minute of silence. The race with time has come to a close.
Saxophon

The concert piece Saxophon, for soprano saxophone and bongo drum or solo soprano saxophone, is a separate publication of the saxophone music from measures (mm.) 277–352 of Der Jahreslauf. It is the identical saxophone music of Der Jahreslauf, minus the two other saxophone parts. Saxophon contains the music from the second group saxophone solo and the saxophone solo in three parts from Der Jahreslauf. Saxophon begins where the second saxophone group solo with tutti begins (measure 277 of Der Jahreslauf) and continues through the saxophone solo with a few extra bars added at the end of Saxophon. The saxophone part is the same in Saxophon as it is in Der Jahreslauf and the opera Dienstag and from here on will simply be referred to as the music of Saxophon. Saxophon’s character is rather sparse compared to the saxophone music in Der Jahreslauf, since it is paired downed to just the saxophone with no other instruments except optional bongo drum. For example, in Der Jahreslauf the flute adds countermelodies and color while the saxophone plays the Inori melody. (The Inori melody is discussed below.)

Saxophon mm. 1–23 is the music originally from the group saxophone solo and mm. 24–end is the original solo music from Der Jahreslauf. The music of the group saxophone solo contains a lot of pitch bending, an idiomatic trait of the

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69 Three or four measures, depending on your viewpoint, are added at the end of Saxophon that are not part of the saxophone solo section of Der Jahreslauf. After the last formula is completed in Saxophon, there are only three extra bars, but according to the Der Jahreslauf (CD 29) recording, the last bar of the formula is the first bar of the next section, thus Saxophon could be said to go four bars into the next section after the saxophone solo of Der Jahreslauf.
Japanese *hichiriki*, for which the part was conceived. The use of pitch bending diminishes with the first part of the saxophone solo music and is not at all present in the last two parts of the solo.

The three parts of the solo section are each a statement of a formula from a previous Stockhausen piece. The formulas of *Harlekin* (1975), *Inori* (1973–74), and *Mantra* (1970) are each played as they were originally written. There is no manipulation of the formulae in these hearings (except the modified restatement of the beginning of the *Harlekin* formula at the end of its section, mm. 37–38 in *Saxophon* and a bar of silence in measure (m.) 39). The formulae are transposed from their original pitch levels for the saxophone solo version. Below each formula section is discussed in more detail.  

First Formula - *Harlekin*

The first formula used in *Saxophon* (beginning in m. 300 in *Der Jahreslauf*, m. 24 of *Saxophon*) is the formula from Stockhausen’s *Harlekin* (1975). *Harlekin*, circa 43 minutes, is for a solo clarinetist, dressed as the character Harlequin, the historic comic character from Italian *Commedia-

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70 As an aside, the three pieces *Harlekin*, *Inori*, and *Mantra* are each early formula compositions of Stockhausen’s and in each composition he used “stretched” scales that he created. He thought of his scales as stretching the chromatic scale; whereas all twelve notes can fit into the span of an octave in the chromatic scale, Stockhausen’s scales still contained all twelve pitches, but did not fit within an octave because the steps of the scales were separated not only by half steps, but also by whole steps, minor thirds, and major thirds. Stockhausen described the scales he created for *Mantra* and his use of them in Jonathan Cott, *Stockhausen: Conversations With the Composer* (New York: Simon and Schuster, 1973), 229–232. Hermann Conen’s diagram for *Mantra* illustrates the ever-widening span of the different scales and also the interval patterns of the modal scales Stockhausen used. Conen’s diagram is in Conen, *Formel-Komposition*, 71.
dell’arte. While playing, the clarinetist must act out various character roles via gestures and facial expression as well as moving about the stage.

The *Harlekin* formula played in *Saxophon* is written up a tritone from the original. Both soprano saxophone and clarinet are B♭ transposing instruments, thus one can compare their transpositions directly. In *Harlekin* the formula starts on D and in *Saxophon* on G♯. The formula of *Harlekin* is stated in the clarinet score in the “Enamoured Lyric [sic]” (*Der verliebte Lyriker*) section on pages 6–7. The *Harlekin* formula is reprinted below in Musical Example 6. For comparison, the first seven measures of the *Harlekin* section from *Saxophon* are reprinted below in Musical Example 7.

Musical Example 6. *Harlekin* Formula

© Stockhausen Foundation for Music, Kürten, Germany (www.stockhausen.org).
Stockhausen made minor adjustments in transcribing *Harlekin* for *Saxophon*. In *Saxophon* he added pitch bends between notes in the opening gesture (mm. 24–25, 37–38). Breaths in *Saxophon* are marked in different places, most likely because in *Harlekin* the tempo is marked $\downarrow = ca. 50$, but in *Saxophon* it is marked $\downarrow = 36$. The much slower tempo would necessitate more breaths. Articulations are similar in both pieces, mostly just altered for new breath places. Some slur markings are changed in *Saxophon* (i.e., in the sixth measure of the formula, *Saxophon* m. 29, the dotted half-note is slurred to the next note, whereas in *Saxophon* the slur begins on the next note). Dynamics remain fairly consistent. In the *Harlekin* formula, the last note is rearticulated.
and held for a half-note length. In *Saxophon* this note is not extended, but instead there is a rest, after which the opening gesture of the *Harlekin* formula is heard again in m. 37. Mm. 37–39 are reprinted below in Musical Example 8 for comparison with m. 24–26 in Musical Example 7. The first three notes of the gesture are now in diminution and the last are augmented and ornamented.

Each time this gesture is spread over two measures and has pitch bends. Following it both times is a three beat measure, but the second time this measure is silent. At the restatement of this gesture (m. 37), there is a tempo change to $\downarrow = 71$, which is the tempo for the next formula, *Inori*. One could view these three measures as a transition to the next section.

Musical Example 8. *Saxophon* mm. 37–39
Second Formula – *Inori*

The second section of the solo, beginning at measure 316 in *Der Jahreslauf* (measure 40 of *Saxophon*), uses the formula from *Inori* (1973-74). *Inori* is a piece for orchestra and one or more dancer/mime soloists who make prayer gestures borrowed from various religions. The *Inori* formula is reproduced in Musical Example 9. Each pitch of the *Inori* formula has an associated tempo, prayer gesture, dynamic level, and timbre. The tempo marking of the *Inori* section of *Saxophon* is \( \frac{}{\text{bpm}} = 71 \), which is the tempo that corresponds with the first note and last note and several notes in-between in the *Inori* formula.

*Saxophon* remained fairly consistent with the original *Inori* formula, with only some minor adjustments. *Saxophon* sounds up a perfect fifth from the formula pitch. Some note lengths, compared to the original formula, are shortened or omitted with added rests to fill the gap and ensure the proportions of the formula remain. For example, m. 43 in *Saxophon* is a dotted half-rest, but in the third measure of the formula it is a dotted quarter-note “A” and a dotted quarter-rest. Several articulations are marked differently and the first three grace notes of the formula are marked as sixteenth notes in *Saxophon*. Three beats of silence at the end of the formula in *Saxophon*, marked *starr* (rigid), precede the beginning of the next formula, marked \( \frac{}{\text{bpm}} = 60 \).
Musical Example 9. Inori Formula

© Stockhausen Foundation for Music, Kürten, Germany (www.stockhausen.org).
Third Formula - *Mantra*

The third formula begins at m. 335 in *Der Jahreslauf* (m. 59 of *Saxophon*). The formula heard is from *Mantra* (1970) for two pianists playing ring-modulated pianos, small cymbals, and wood block, and a radio that emits Morse code or a tape recording of Morse code. The *Mantra* formula’s pitch material consists of a row that has thirteen notes, with the last note repeating the first. The formula is two lines of counterpoint. The upper line states the tone row and the lower states the tone row inverted. The *Mantra* formula is reproduced in Musical Example 10. Similar to the *Inori* formula, each note of the row has associated with it, its own dynamic level, articulation, and characteristics, such as repetition, accent, and tremolo. The formula has thirteen cycles, each cycle featuring a note of the row and its characteristics. In *Saxophon*, the saxophone plays the upper layer and it is written up a major ninth from the formula, thus it sounds an octave above the original formula. Pitches, rhythms, and dynamics remain the same.

The structure of *Saxophon* is unusual and unlike any of the other saxophone pieces. The beginning of *Saxophon* is newly-composed music. It is followed by three formulae. Each formula is presented, one after another, and none is developed. The three formulae used in *Saxophon* were from recent compositions of Stockhausen. Possibly, their appearance in *The Course of the Years* could be seen as a retrospective of his use of formulae. In *Saxophon*, the stringing together of newly composed music and various formulae gives the
Musical Example 10. Mantra Formula

© Stockhausen Foundation for Music, Kürten, Germany (www.stockhausen.org).

impression that pitch material is not the most important aspect of the piece. Rather, the manner in which the pitches are played is more important, so that a ceremonial atmosphere is imparted (i.e., the pitch bends especially recall the sounds of the *hichiriki*).

*Saxophon* comes from the larger staged work, *Der Jahreslauf*, in which electronic media plays a large role. In *Der Jahreslauf*, the electronic interjections, that are the temptations and incitements, add interest and humor. They also contrast to the acoustic sounds that give an atmosphere of traditional Japanese Gagaku music. The electronic sounds have a spatial component. For
instance, the footsteps are panned from one side to the other in the stereo mixture, so that it sounds like they are moving across the stage.

The visual component of the concert work Saxophon is minimal, with only the saxophonist and the bongo player onstage, positioned at a distance from each other. In the staged Der Jahreslauf, however, the visual aspect comes to the fore. Saxophon as part of Der Jahreslauf is the only saxophone piece in this study that demonstrates all of the following characteristics: formula construction, electronic media, spatialization, and visual elements.
CHAPTER 6

KNABENDUETT

Knabenduett, ca. 3 ½ minutes, from Donnerstag (Thursday) aus Licht, Act 3: Michaels Heimkehr (Michael’s Homecoming), Scene 1: Festival, 1980

Knabenduett (Boys’ Duet or Duet of the Youths\textsuperscript{71}), from the opera Donnerstag (Thursday, 1978-1980), was dedicated to Stockhausen’s twelve-year old son Simon.\textsuperscript{72} Simon Stockhausen and Hugo Read played the duet in the premiere of Donnerstag at La Scala in Milan on April 3, 1981, and are heard on the Deutsche Grammophon recording of the opera. Stockhausen’s three musical children, Majella, Markus, and Simon, all played roles in the opera.\textsuperscript{73}

Donnerstag, the first opera in the Licht cycle, is archangel Michael’s day and the action follows his experiences. Donnerstag has a greeting, three acts (Act I Michael’s Youth, Act 2 Michael’s Journey Round the Earth, and Act 3 Michael’s Homecoming), and a farewell. In the first act the characters are introduced. In

\textsuperscript{71} “Boys’ Duet” is the more common translation. It appears this way in the score. In the liner notes of Saxophon it is “Duet of the Youths.” Another possible translation might be “Duet of the Lads.” Karlheinz Stockhausen, “Knabenduett: (aus Michaels Heimkehr) vom Donnerstag aus Licht, für 2 Sopransaxophone oder Andere Instrumente, 1980, Werk Nr. 2. Ex 50 1/2.” (Kürten, Germany: Stockhausen-Verlag, 1983) & Julien Petit, Saxophon, Stockhausen Complete Edition CD 78, 2005, liner notes, 1.

\textsuperscript{72} “Im frühjahr 1980 meinem 12-jährigen Sohn Simon, ♥lich gewidmet.” Stockhausen, “Knabenduett: (aus Michaels Heimkehr) vom Donnerstag aus Licht, für 2 Sopransaxophone oder Andere Instrumente, 1980, Werk Nr. 2. Ex 50 1/2.” (Kürten, Germany: Stockhausen-Verlag, 1983), score notes, III.

\textsuperscript{73} In 1979: Majella, age 22; Markus, age 18; and Simon, age 12. Majella played piano; Markus was the trumpet soloist playing the instrumental version of Michael throughout the opera cycle, and Simon played soprano saxophone in Knabenduett. Tannenbaum, Conversations with Stockhausen, 5.
the next act Michael journeys around the earth, stopping at seven locations. In Act 3 Michael returns to his celestial home. There is a celebration, which, Maconie noted, is more like welcoming the prodigal son home, for at the end we learn that Lucifer told him not to go, but he went to earth anyway, not to save it, but just to see what it was like.\textsuperscript{74}

*Knabenduett* takes place in the Festival scene in the first part of the third act. The devil mime and the Michael mime begin to fight, and correspondingly the trombone and the trumpet duel too. Stockhausen says, “the devil is part of the game, who, as a gremlin and tromboning tap dancer, involves Michael in a bitter fight.”\textsuperscript{75} For the audience, the fight is a memorable comedic event. Two youths with soprano saxophones then appear, and cause “all to stare at them, enchanted.”\textsuperscript{76} The calm brought by these two angels is only fleeting; when they finish, Lucifer and Michael argue. The music from these two angels is transcribed into the concert work *Knabenduett*.

In the opera the soprano saxophone duo is accompanied by percussive sounds: in the first part rin (ringing bowls), antique cymbals, a gong, sound plates, and timpani, in the second half the rin are exchanged for vibraphone. The higher pitched percussion sounds prominently punctuate the music. Hushed

\textsuperscript{74} Maconie, *Other Planets*, 435.


\textsuperscript{76} More about the drama is detailed in Stockhausen, *Donnerstag*, Deutsche Grammophon, 1983, liner notes, 43.
sustained sounds from voices and basset horn color the background. At measure 96 (measure numbers are from the Knabenduett score) the character of the piece changes; loud voices of the soloists and choir interject and are reinforced by the orchestra. Interjections also occur at measures 105, 114, 123, and 132.

In the concert version, Knabenduett is pared down to just the two saxophonists. Besides this, very little is altered in the transition of Knabenduett from opera to concert work. The saxophone parts are virtually the same. The high-pitched percussion (rin and antique cymbals) and the vocal soloists are the obvious missing parts. The saxophones, however, play a fortissimo dynamic level at the point of the singers’ interjections, so the impassioned emotions of the singers are still present. The resultant tones created when these two high-register instruments play together, as well as the beats created by held dissonances, are quite striking to an audience member’s ear. These sounds seem to be masked in the opera by the sounds that accompany the duo.

Construction of Knabenduett

The super-formula projects the large-scale formal plan of the Licht operas. Knabenduett is only a small portion of Donnerstag, yet in it one can refer back to the super-formula. In the basic super-formula (the “kernel”) of Licht, without embellishments, each of the three layers, one for each character, is a tone-row, except Lucifer’s last note (D) is at the end of Michael’s row, which also begins

77 Stockhausen notes in the Knabenduett score that when the piece is performed with only the duo it may be played on other melodic instruments.
with D (see Musical Example 1). In the three formulae of the super-formula, the direction of movement (up or down) between pitches is important. Jerome Kohl highlights this in his analyses of the super-formula:

The falling minor sixth in the third “limb” of Michael’s formula (the beginning of the “Thursday” segment [see Musical Example 1]) is strictly differentiated from the rising major third which begins the Eve formula, and also from the rising minor sixth in Lucifer’s third limb (between “Friday” and “Saturday”).

He stresses that these formulae are melodies and not “abstract (pitch-class) tone rows.” A listener is able to recognize these melodies, or segments of them, throughout the course of the operas.

The beginning interval of each character’s formula of the super-formula is unique to that formula, as are a few other intervals. The following is a list of the intervals unique to particular formulae:

- **Michael:** Ascending or Descending Perfect 4th & 5th
- **Michael:** Descending minor 6th
- **Eve:** Ascending Major 3rd
- **Eve:** Ascending tritone
- **Eve:** Descending octave
- **Lucifer:** Ascending Major 7th
- **Lucifer:** Ascending minor 6th

In mm. 4–5 of *Knabenduett*, shown in Musical Example 11, we see two of these intervals. In the upper voice in m. 4 is a rising major third, unique to Eve’s formula, and in the next measure a perfect fourth, which is unique to Michael’s formula. In these two measures in the lower voice we see trichords related to two

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78 Kohl, “Into the Middleground,” 271.
79 Kohl, “Into the Middleground,” 271.
80 Kohl, “Into the Middleground,” 270.
trichords within the super-formula. One notices that the lower figure in m. 4 is the same three-note figure that begins Michael’s formula and the next measure is the same shape as the portion of Lucifer’s formula from the Tuesday section of his formula; each is transposed up a minor third from the formula, with octave displacement. Michael’s first figure of his formula is an (0 15) trichord; the formulae of Licht are laden with the related 0 1 5 and 0 4 5 trichords and also the 0 1 4 and 0 3 4 trichords.

Musical Example 11. Knabenduett mm. 4–5

The structure of Knabenduett is straightforward, built of contrasting phrases that make up sections. Knabenduett is divided into two parts. (Figure 5 is a diagram of the sections of the piece.) The first part can be further divided into three sections. The second part can be neatly divided into five nine-measure phrases, plus one measure of transition at the beginning of the second part and extra measures at the end.
The first part of *Knabenduett* has three sections of equal proportion (30 measure sections): mm. 1–30, 31–60, 61–90. Each of the three sections of the first part starts with a three-measure phrase and is followed by three nine-bar phrases. These are shown in the bottom row in Figure 5. The three-measure phrase that begins each thirty-measure section, consists of three sixteenth notes repeated several times and rhythmically grouped into sets of four sixteenth notes (see mm. 31–33 in Musical Example 12). Each of the two saxophones has its own set of pitches. This musical shape always signals the beginning of a new 30-measure section.

**Figure 5.** *Knabenduett* Form Diagram

**Musical Example 12.** *Knabenduett* mm. 31–36
In the first thirty-measure section, the nine-measure phrases are altered each time. The first nine-measure phrase (mm. 4-12) of part one has its upper voice repeated down an octave, mostly, in the second nine-measure phrase (mm. 13–21) of the section. (The lower voice does not repeat, but plays something different.) Additionally, in the second phrase, the first bar of the first nine-bar phrase has been moved to the end of the phrase, thus m. 4 corresponds with m. 21. (In Musical Example 13 one can compare mm. 4–6 with mm. 13–14 to see how the beginnings of the nine-measure phrases relate and differ and also one can see how the last measure of the second phrase, m. 21, is similar to the first measure of the first phrase, m. 4.)

Musical Example 13. *Knabenduett* mm. 4–6, 13–14, 21, 29–30
The third nine-measure phrase (mm. 22–30) repeats the lower voice from the second nine-measure phrase (mm. 13–21) at an octave lower, mostly. The third phrase starts with the second measure of the second nine bars, which corresponds with the third measure of the original nine-bar phrase, and the corresponding first two measures of the original phrase are now at the end of the phrase (mm. 4 & 5 correspond with mm. 29 & 30 and are also shown in Musical Example 13). The first two measures of the nine-bar phrase that are now at the end of the third phrase have the original lower saxophone part preserved in the upper saxophone part (mm. 4 & 5, mm. 29 & 30).

The second section of the first part of the piece (mm. 31–60) preserves the phrase structure of the first section (mm. 1–30). Also, limbs are transferred to the other voice and reordered, similar to the altering of limbs in In Freundschaf. For example, the triplet figure that appears in m. 20 should appear in m. 50, but it is delayed until m. 58 and transposed.

The third section of the first part (mm. 61–94) also preserves the form; the pitch levels, however, are significantly different than the original pitches. The third section is in rhythmic unison with the first section. To end the section, there is another three-bar phrase, like the three-bar phrases that begin each section, followed by a measure with a held note with a fermata (mm. 91–94).

Another measure of this held note begins part two of Knabenduett (m. 95). The five nine-measure phrases of this part each have six measures followed by a
trill. In the opera, the vocalists enter at the beginning of each phrase (corresponding to mm. 96, 105, 114, 123, and 132 in the *Knabenduett* score).

The first six measures of each phrase are usually followed by a three-measure trill. To end *Knabenduett*, the last phrase has only a two-measure trill in each voice, the main notes of which are then held for the three final measures. These three measures are not in the usual 2/4 meter, but switch to 3/8, 3/4, 3/4.

Because it is part of an opera scene, there is a strong visual dimension to *Knabenduett*. The two saxophonists are each on a different side of the stage, spaced apart from each other. They are dressed as angels, in white costumes, and were sent to restore calm. Stockhausen wrote in the score notes that for a concert performance costumes could also be worn.  

Formulae were used in different manners for all the works discussed so far. In *In Freundschaft* the formula provided a complex melodic counterpoint, which was then cycled through several times and developed. *Saxophon* used three formulae for pitch material, but did not develop them. *Knabenduett* is based on the super-formula from *Licht*, as is the next piece *Linker Augentanz*. The structure of *Knabenduett* is unlike any of the other saxophone works. It has regular phrases that form sections. *Linker Augentanz* (Left-Eye Dance) is written similarly to *Knabenduett* in that it is based on the super-formula and has

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81 Karlheinz Stockhausen, “Knabenduett: (aus Michaels Heimkehr) vom *Donnerstag aus Licht*, für 2 Sopransaxophone oder Andere Instrumente, 1980, Werk Nr. 2. Ex 50 1/2.” (Kuerten, Germany: Stockhausen-Verlag, 1983), III.
seemingly regular, recurring segments. *Linker Augentanz*, however, cannot be so tidily broken into sections.
CHAPTER 7

LINKER AUGENTANZ

_Linker Augentanz_, ca. 3 \( \frac{1}{2} \) minutes / 18 minutes, from _Samstag_ (Saturday) aus _Licht_, Scene 3: _Luzifers Tanz_ (Lucifer’s Dance), 1983 / 1990

_Linker Augentanz_ (Left-Eye-Dance) is an instrumental work based on a portion of Scene 3, _Luzifers Tanz_ (Lucifer’s Dance), from the opera _Samstag_ (Saturday). “Lucifer’s Dance” is played by a large wind band. _Samstag_ (1981-1983) has a greeting, three scenes, and a farewell. The opera was premiered in Milan on May 25, 1984, at the Palazzo dello Sport and was produced by the renowned opera house _La Scala_ (_Teatro alla Scala_).

In 1990, Stockhausen reworked the short saxophone feature from “Lucifer's Dance” into an eighteen-minute concert piece, _Linker Augentanz_ (Left-Eye Dance), for large saxophone section, percussion, and synthesizer. Stockhausen completed the piece at the request of Paris Conservatory saxophone professor Claude Delangle and with the commission of the Vandoren Company of Paris. Claude Delangle’s saxophone students premiered _Linker Augentanz_ on January 23, 1991 at the _Conservatorie National Superieur de Musique Paris_ with François Mervilleas as percussionist, and Stockhausen’s son, Simon Stockhausen, as synthesizer/sampler player. In February of 2009, assisted by University of Arizona saxophonists, percussionist, and keyboardist, the author, Elizabeth Bunt, played soprano saxophone for and was the producer of the North American premiere of _Linker Augentanz_ as part of a lecture-recital she presented at the
In Samstag (Saturday), the Left-Eye music is played by the saxophone section (consisting of two soprano saxophones, two alto saxophones, one tenor saxophone, one baritone saxophone, and one bass saxophone) and a percussionist. The concert piece featuring the left-eye music, Linker Augentanz (Left-Eye Dance), retains this instrumentation and adds a synthesizer player. Also in the concert version, there is the option to expand the saxophone section by adding another soprano, alto, tenor, and baritone saxophone. If one player is added to a part, then all the parts must be expanded accordingly, so as to retain the proportions.

In the fifth volume of Stockhausen’s Texte zur Musik he included an instrumentation list for Luzifers Tanz (Lucifer’s Dance); he listed bass clarinet or tuba as substitutes for a bass saxophone. These possible substitutions are not listed in the concert work Linker Augentanz (Left-Eye Dance). Stockhausen also listed the Luzifers Tanz (Lucifer’s Dance) instrumentation for symphony orchestra, in which the strings take on the saxophones’ role.

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83 Stockhausen, Texte zur Musik, 5:600–601.
84 Stockhausen lists Luzifers Tanz as performable by symphony band or orchestra. The orchestra instrumentation differs from the wind version in that the wind instruments are pared down and strings are substituted for the saxophones in a ratio of about 2 strings per 1 saxophone. See Texte zur Musik, 5:600–601 for a full listing.
The precise instrumentation used for the original performance of *Linker Augentanz* (Left-Eye Dance) is detailed in the score. These instruments are not necessarily the most readily available instruments for performances outside the region Stockhausen lived. The score calls for a bass saxophone, an instrument that is rare even in university collections. Also, Stockhausen delineates very specific percussion instruments, including alarm bells made by Kolberg Percussion GmbH, of Uhingen, Germany.\(^{85}\) The University of Michigan and the *Stockhausen-Verlag* own a set of the required percussion battery. The synthesizer must be prepared in advance. The performer is to take sound samples, sent on a CD with the score, and map them to her keyboard, or choose similar sounds available in order to achieve the sounds Stockhausen specifies for the piece. Because this instrumentation is involved, it will need to be located as one of the first steps when preparing to program *Linker Augentanz* (Left-Eye Dance).

*Luzifers Tanz* (Lucifer’s Dance)

Robin Maconie’s book, *Other Planets*, about the music of Stockhausen, has entries for all of Stockhausen’s well-known and larger works, from the beginning of his career through the opera cycle. In *Other Planets*, Maconie begins his section on *Samstag* with a discussion of Stockhausen’s excursions into serialism

\(^{85}\) Stockhausen discusses the percussion instruments for “Lucifer’s Dance,” Scene 3, of *Samstag* (Saturday), in more detail in Stockhausen, *Texte* 6:29, 30.
and point music. Stockhausen explored the “principle of total organization” and “pursued the idea of serial controls further than any composer before or since, — and then, when the acoustic results were not sufficiently compelling or exciting... he broke the rules.” This introduction on Stockhausen’s rule-breaking seems fitting for the opera that is Lucifer’s day of the week.

In the “Lucifer’s Dance” scene, Stockhausen envisions Lucifer as “brilliant, intuitive, extremely progressive, but at a crucial moment he was disobedient.”

Stockhausen’s poem describes the moral theme, or human dilemma, of the “Lucifer’s Dance” scene:

If you, Man, have never learned from LUCIFER
how the spirit of contradiction and independence
distort the expression of the face,
how brow can dance versus brow,
— eye versus eye,
cheek versus cheek,
nose versus cheek,
lip versus nose,
tongue versus lip
and chin versus tongue —
you cannot turn your countenance in harmony
towards the LIGHT.

— Karlheinz Stockhausen

When the poem begins by saying, “If you, Man, have never learned from LUCIFER...,” it is referring to having learned from Lucifer’s disobedience and the consequences of his disobedience. Onstage, “Lucifer’s Dance,” as the poem

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86 The term “point music” refers to notes that are widely spaced and isolated, rather than linear, scalar patterns of notes.

87 Maconie, *Other Planets*, 441.


describes, brings to life the little facial tics that are the product of a “spirit of contradiction and independence” that keep a man from turning his “countenance in harmony towards the Light.” Until one can act in obedience, one will never feel at peace and see the divine light.

In “Lucifer’s Dance,” scene three of Samstag, Lucifer conjures up a wind band seated vertically in the shape of a giant face, pictured in Figure 6. The face is twenty-five meters high and the eighty-two band members filling out the face are seated on six different levels. Sections of the band correspond to different parts of the face. The saxophone section plus a percussionist correspond to the left eye. One does not typically think of a wind band being the focus of an entire opera scene. This unusual scene was commissioned and premiered by the University of Michigan Symphonic Band under the direction of H. Robert Reynolds. When commissioning a piece for wind band, one can presume they were not overly surprised that it would be included in one of Stockhausen’s

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90 Stockhausen, Samstag, Deutsche Grammophon, 1988, liner notes, 82.
91 Maconie mentions a possible moral dilemma expressed in “Lucifer’s Dance,” in relation to the pedantic poem versus the music itself, which is fun, like a temptation or versus Stockhausen’s self-imposed compositional rules, which were only adhered to until breaking them created music that was more exciting. Maconie sees Lucifer’s poem “about the facial distortions that arise from the independent actions of a contrary spirit,” as a gesture “of defiance against the pointillist ideals he initially set up for himself, and indicative of his pleasure in the success of the music and the sense of liberation that came with composing against the canon of perfection. Out of that paradox comes a statement of the human condition as necessarily imperfect, existing in an environment of constant change, unstable by nature and requiring expression for its very survival, hence incapable of attaining the stillness and tranquility of an ideal perfection.” Maconie, Other Planets, 440–442.
92 For a diagram of the face and corresponding sections of the band, see Samstag, Deutsche Grammophon, 1988, liner notes, 83.
93 The University of Michigan Symphonic Band saxophone section: Timothy Miller, Michael Whitcombe, Matthew Levy, Jane Merrill, Rick Morgen, Kathy Copeland, Kevin Burner.
operas, since he had been working on his *Licht* cycle for a few years already, but it must have been quite a surprise to learn the band was to be seated on stage in the shape of a giant face.

Figure 6 is a photo of the band seated vertically. The designer for the opera, Gae Aulenti, created a large stage decoration of Lucifer's face above the band. The opera was staged in the sports arena in Milan and in the picture you can see the audience seated on the floor, rather than the stadium seats. Stockhausen is standing at the soundboard.

Figure 6. Scene 3, "Lucifer’s Dance," from *Saturday*, at the Palazzo dello Sport in Milan. Photo by Lelli & Masotti. Archive photograph, Teatro alla Scala.
Stockhausen notes that over the course of “Lucifer's Dance” all the, “parts of the giant face begin to move musically as well as visually. The musicians had to learn the choreography and movements with their instruments.”

The parts of the face “increasingly dance against each other, bearing out the [warning]” the poem describes.

Tim Miller, saxophonist of the Michigan band, remembers Stockhausen explaining the choreography; Lucifer, as an otherworldly being, “can do things that man cannot. He [Stockhausen] told us that the face begins to twitch and ‘dance,’ but the time environments are so complex that no human [face] could do this. The flutes are [subdividing] in eight notes for [every] two beats, the clarinets in seven notes for [every] two beats, the saxophones are in straight 6/8 or six notes for two beats, oboes and bassoons in five and so on. In this manner the face began to twitch and dance in ways that no human could.”

“Lucifer’s Dance” is a series of section features alternating with tutti ensemble playing. During “Lucifer's Dance,” each section of the band is featured. It is an additive process; as a section is featured, it is then added to the ensemble. The ensemble alternates with the instrument section features. First, the left eyebrow (flutes, basset-horns, and one percussion instrument) is

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95 Stockhausen, *Samstag*, Deutsche Grammophon, 1988, liner notes, 82.
96 Miller added that Stockhausen, “wanted our [the saxophone] portion of the dance to be ‘joyful’.” Tim Miller, email correspondence with author, 13 July 2010.
97 For a full diagram of the form, see page 84 of the program from the premiere of *Samstag* in Milan produced by La Scala, May 1984.
featured, then the right eyebrow (clarinets, bass clarinets, and one percussion instrument). Next comes the left-eye (saxophone section plus a percussionist), and so on.

Periodic Rhythms

In “Lucifer’s Dance” the music has several different layers of rhythmic subdivision. More specifically, the wind band is divided into groups with each instrumental group’s music organized around a periodic rhythm. (Musical Example 14 is a diagram of the periodic rhythms of each section of the face.) For example, the left eyebrow has periods of eleven sixteenth notes (above, Tim Miller alternately described the subdivision of this as eight notes for every two beats); the right eyebrow has periods of ten septuplet notes, the left eye periods of nine sextuplet notes, and so on. Each instrumental group physically motions in time with its own periodic rhythm to represent the motions of the corresponding part of the face.

The music of the left-eye, featuring the saxophones, continually repeats sextuplets, with the emphasis on every ninth note or every one and one-half sextuplet. Note, however, the sextuplet is usually notated as two triplets. The Left-Eye music is notated in 2/4 meter, thus in Musical Example 15, from mm. 61-66, one can see that it takes a measure and a half to complete the period of one and one-half sextuplets. (Note that this musical example is from “Left-Eye Dance” score, rather than “Lucifer’s Dance.”) The emphasis is every one and one-
Musical Example 14. “Lucifer’s Dance” Periodic Rhythms

1. **LEFT-EYEBROW-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   11-sixteenth-note (semiquaver) periods

2. **RIGHT-EYEBROW-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   10-septuplet periods

3. **LEFT-EYE-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   9-sextuplet periods

4. **RIGHT-EYE-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   8-quintuplet periods

5. **LEFT-CHEEK-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   7-eighth-note (quaver) periods

6. **RIGHT-CHEEK-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   6-quarter-note (crotchet) triplet periods

7. **WINGS-OF-THE-NOSE-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   5-quarter-note (crotchet) periods

8. **UPPER-LIP-DANCE**
   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   4-half-note (minim) triplet periods

   \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
   3-half-note (minim) periods

10. **CHIN-DANCE**
    \[ \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \]
    2-dotted-half-note (dotted minim) periods


Musical Example 15. **Linker Augentanz**, soprano saxophone part, mm. 56–66
half sextuplets, or in other words, every third beat is emphasized. In *Linker Augentanz* (Left-Eye Dance), this is musically emphasized with the percussion and synthesizer and also when the saxophones motion in a new direction.

The saxophone section moves in time to the one and one-half sextuplet period; they swing their horns up to left at the beginning of one group of nine notes and then back down to the right on the next set, like the blinking of an eye and reminiscent of American basketball game pep bands and marching bands or the synchronized movements of early American jazz band sections for showy effects. In Musical Example 15, the saxophone movements are indicated by up and down arrows. The physical movements highlight the rhythmic pattern of the piece that the meter obscures.

**Construction of *Linker Augentanz***

The first sixty measures of *Linker Augentanz* (Left-Eye Dance), using a pointillistic texture, foreshadow the main musical material that will be referred back to throughout the piece. The sparse notes interjected by the saxophones in these first measures are only a skeleton and at m. 61 the music is filled out with melodic and harmonic pitch material. In Musical Example 16 one can see the pitches emitted by the saxophones in the first five measures and notice that in mm. 61–65 these notes remain, but further pitch material is added. Also, the synthesizer chords are the same. These next sixty measures (from mm. 61–120)
The hexagons under the music are for the synthesizer player to make notes on the sounds she is to use at that particular place.
continue to correspond directly to the first sixty measures.\textsuperscript{98} The framework of the first sixty measures is repeated in the next sixty measures (mm. 61–120); the chord structure is repeated and the melodic structure remains, yet is filled in with more pitch material.

The start of the main musical material at m. 61 cannot be missed by observant audience members, because here the saxophones begin their rhythmic, up and down bobbing. This movement relates back to the left-eye’s role as part of the giant face in “Lucifer’s Dance.” This music, in some form, will be returned to repeatedly throughout the piece.

The descending figure in the soprano saxophone part in m. 61 (seen in Musical Example 15 and 16) begins the main motivic figure of \textit{Linker Augentanz}. The figure starts on the B$^\flat$ (A$^\flat$ concert pitch) above the staff, moves down a half step to A (G concert pitch), and then leaps down to the E$^\flat$ (D$^\flat$ concert) in the middle of the treble clef. This is the most common motivic shape throughout the piece. If one refers back to the basic version of the super-formula (Musical Example 1), one will see that this shape is similar to Lucifer’s portion of the \textit{Saturday} section and identical to Lucifer’s portion of the \textit{Tuesday} section, but transposed up a whole step. This figure appears, for example, in measures 61, 157, 160, 163, 173, 181, 190, 283, 327, 333, 355, 382, 421, and 441.

Looking again at m. 61, one sees that not only is Lucifer’s figure from his \textit{Tuesday} portion of the formula present, but so is Michael’s. The tenor

\textsuperscript{98} There are a few exceptions in the repetition of the first sixty measures in the synthesizer part: the rest from m. 42–99 is replaced with a long upward glissando in mm. 101–107 and a chord from m. 53 is omitted in m. 112 and replaced with the chord from m. 54.
saxophone plays Michael’s ascending perfect fourth, also transposed up a whole step. The bass saxophone plays the ascending perfect fourth, but it is not up a whole step, it is at the same pitch level as Michael’s, (A$^\#$ to E$^\#$). Additionally, the alto saxophones play Eve’s pitch (E$^\#$) from her Tuesday section of the formula transposed up a whole step (concert F).

Linker Augentanz has several parts to it, which can be divided into smaller sections (see Figure 7). Each part begins with the main musical material (main motive with sextuplet subdivision and all saxophones playing), the music develops, and then there is a return, with the main motive prominent, albeit altered, and the original subdivision. Contrasting material at the end of parts include a different subdivision (such as in mm. 271–280) or different textures (such as in mm. 408–420, 461–492). At the end of each part, the section does not use the main melodic motive. The music returns to a version of the original material, and melodic motive, halfway through the piece at mm. 281 and then again at mm. 421 and 493.

In the first part of the piece, mm. 1–280, the framework of mm. 61–120 recurs several times. In mm. 1–60 and mm. 61–120, as mentioned, form and melody correspond; it appears m. 121 is going to start another corresponding section, but it quickly strays from the format. Most notably, mm. 201–270 correspond directly in framework of melody and harmony to mm. 61–130.
<table>
<thead>
<tr>
<th>Part &amp; Total Measures per Part</th>
<th>Sections</th>
<th>Tempo Change</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm. 1–280 280 total</td>
<td>mm. 1–60</td>
<td>( \frac{j}{j} = 80 )</td>
<td>pointillistic texture, skeletal framework motions, structure corresponds to mm. 1–60, filled out melody</td>
</tr>
<tr>
<td></td>
<td>mm. 61–120</td>
<td>( \frac{j}{j} = 63.5 )</td>
<td>false start as if going to begin again like m. 1 or 61</td>
</tr>
<tr>
<td></td>
<td>mm. 121–</td>
<td>( \frac{j}{j} = 60 )</td>
<td>correspond to mm. 61–130</td>
</tr>
<tr>
<td></td>
<td>mm. 201–270</td>
<td>( \frac{j}{j} = 60 )</td>
<td>quintuplet subdivision, <em>divisi</em></td>
</tr>
<tr>
<td></td>
<td>mm. 271–280</td>
<td>( \frac{j}{j} = 60 )</td>
<td></td>
</tr>
<tr>
<td>mm. 281–420 140 total</td>
<td>mm. 281–320</td>
<td>( \frac{j}{j} = 75.5 )</td>
<td>original subdivision &amp; melody, saxophone motions align, sop sax (orig) melody <em>p</em>, kissing sounds (Kußgeräusche) begin in alto sax</td>
</tr>
<tr>
<td></td>
<td>mm. 321–340</td>
<td>( \frac{j}{j} = 75.5 )</td>
<td>long ritard &amp; long accelerando, <em>subito</em> dynamics</td>
</tr>
<tr>
<td></td>
<td>mm. 341–406</td>
<td>( \frac{j}{j} = 75.5 )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mm. 408–420</td>
<td>( \frac{j}{j} = 75.5 )</td>
<td></td>
</tr>
<tr>
<td>mm. 421–492 72 total</td>
<td>mm. 421–460</td>
<td>Various tempi: ( \frac{j}{j} = 75.5, 80, 67, 80, 40, 80, 63.5, \frac{j}{j} = 127, 120, 151, 107, 151, \frac{j}{j} = 56.5, 75.5, \frac{j}{j} = 142, \frac{j}{j} = 90, 95, 80, 85, 75.5 )</td>
<td>return of original texture (<em>tutti</em>) &amp; melody, <em>Rauschen</em> sounds intermixed w/ regular sounds</td>
</tr>
<tr>
<td></td>
<td>mm. 461–492</td>
<td>( \frac{j}{j} = 75.5 )</td>
<td>thinner texture, mixed meter</td>
</tr>
<tr>
<td>mm. 493–541 40+end = 49 total</td>
<td>mm. 493–532</td>
<td>( \frac{j}{j} = 75.5 )</td>
<td>return of original texture (<em>tutti</em>), similarities to m. 421–460</td>
</tr>
<tr>
<td></td>
<td>mm. 533–541</td>
<td>( \frac{j}{j} = 75.5 )</td>
<td>ending, mixed meter, chromatic descent</td>
</tr>
</tbody>
</table>

Figure 7. *Linker Augentanz* parts with brief descriptions
Mm. 121–125 are reproduced in Musical Example 17 for comparison with mm. mm. 1–5 and 61–65 in Musical Example 16. The chord (A♭, G, E, F) that begins the section (m. 121) is the same as the first chord of the piece and as the chord at m. 61 (A♭, G, A♭, E, F) except the A♭ is not doubled. The soprano again precedes the downbeat with the same upward sweeping motion as in m. 60, leading to similar melodic material. This time, though, the melodic material begins in augmentation with longer note lengths than in the original melody and the motives continue to be varied from the original.

Musical Example 17. *Linker Augentanz* mm. 121–125
The next place in the piece where the music from m. 61 returns is at m. 201. From mm. 201–270 the melody from mm. 61–130 is repeated with some octave displacement. The tempo at m. 201 is \( \text{\textit{d}} = 63.5 \), slower than the original tempo \( \text{\textit{d}} = 80 \). The number of measures and rhythmic proportions from mm. 61–130 remain intact at mm. 201–270; sometimes, however, substitutions are made, either with silence or contrasting pitches. For instance, at mm. 212–218 the original melody is replaced; in m. 212 the emphasized pitch “A” transitions to pitch set A, \( G^{\flat} \) and D that is a minor second higher than the usual \( A^{\flat}, G, \) and \( D^{\flat} \). Musical Example 18 is a reproduction of mm. 211–215. The soprano saxophonists in mm. 213–218 play this higher set. Also, from mm. 212–218 the swaying up and down is interrupted; the saxophonists hold their saxophones to the center.

In m. 219 the original melody and motions return (m. 219 corresponds with m. 79). Again, in mm. 222 and 224 the melody is replaced with the minor second higher pitches (\( A \ G^{\flat} \ D \)). At m. 228 the sopranos drop out of the texture and thus the melody is also gone. After a few measures the soprano voice returns, but it continues to drop in and out of the texture through m. 248; sometimes all of the saxophone voices are silent for a measure or two (i.e., mm. 243–244). Fragments of the soprano melody are interjected in mm. 234 (which corresponds with m. 94), mm. 237–242 (which corresponds with mm. 97–102), mm. 245–247 (which corresponds with mm. 105–107), and mm. 249–250 (which corresponds with mm. 109–110).
Musical Example 18. *Linker Augentanz* mm. 211–215

Musical Example 19. *Linker Augentanz*, soprano saxophone part, mm. 253–256 & *Super-Formula*, Lucifer line, mm. 3
In mm. 253–256, shown in the top of Musical Example 19, the soprano saxophones play a chromatically ascending figure, the shape of which will return several times. One will note that this figure relates to the third measure of the Lucifer line in the embellished super-formula, seen in the bottom of Musical Example 19. Starting from the B in m. 254, if one compares the intervals with those from the third measure of Lucifer’s formula, one will see they are the same (the saxophone, however, continues to ascend in a similar fashion for several more pitches). The rhythm is not aligned with the formula, but one can see the similarities, both the saxophone line and the formula use triplet subdivisions with added grace notes.

In mm. 257–270 the alto saxophones take over the melody previously heard in mm. 117–130. Meanwhile, the soprano saxophones continue to play versions of the ascending passage (i.e., end of mm. 259, 268, and later at 298). At m. 271 the soprano saxophones summit at their highest pitch of the piece, an altissimo range A (G concert), signaling the arrival at a new section.

At the start of the next section, in m. 271, the tempo slows to \( \frac{3}{4} \). There is a new subdivision, too; instead of the usual sextuplets, each measure is divided into an eighth-note quintuplet, thus five eighth notes per measure in 2/4 time. A sample of this subdivision is illustrated in Musical Example 20, which shows mm. 276–280. At this section, m. 271, the saxophonists now motion with their instruments every eight quintuplet eighth notes. Quickly though, the saxophones’ motions lose their alignment and saxophones are moving variously
in mm. 276–280. In Musical Example 20 one can see this illustrated with the angled up and down arrows that indicate when the saxophonists are to swing their saxophones.

Musical Example 20. *Linker Augentanz* mm. 276–280

At measure 272 rustling noises begin, introducing an entirely new timbre to the piece. The saxophonists are instructed to rush air into the mouthpiece with a leaking embouchure to produce a wind rushing sound, but not produce a tone. This is indicated with a slash through the note-head, as can be seen in Musical Example 20 beginning in m. 277 on the last eighth note of the soprano saxophone part. These rustling noises are an example of the “colorations of rests” that was discussed earlier in regard to the super-formula.
Also seen in Musical Example 20, are phonetic symbols, listed below the note, to specify to the performer what vowel sound to create with the mouth in order to get a particular kind of sound as he rushes the air past the mouthpiece. To imagine these kinds of sounds, one might think of hissing like a snake or hushing someone to be quiet with “shh,” and then change the vowels sounds one forms with one’s mouth while making the hiss or “shh” sound. Stockhausen lists in the score notes that these phonetic symbols, “should be articulated according to the phonetic alphabet (The Principles of the International Phonetic Association, University College, Gower Street, London WC1E 6BT.)” The phonetic alphabet has a symbol for each unique sound humans use when speaking. Using this system, Stockhausen could be more exact in describing the sounds that he chose for the composition.

Also beginning at this section, m. 271, the harmony is thicker, with the soprano and alto saxophones having divisi parts. This section (mm. 271–280) contrasts with the previous music, in subdivision, texture, and also timbre. It is the contrasting section before a return to the main subdivision and melody in the next part.

Following this contrasting section, the original sextuplet subdivisions return and the jerky motions are aligned again at m. 281. Also returning at m. 281 is the main melodic figure in the soprano saxophone, this time more chromatic, played quietly, and the tempo has returned to \( J = 75.5 \). The main

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99 Stockhausen, *Linker Augentanz*, musical score (Kuerten, Germany: Stockhausen-Verlag, 1994), IV.
melodic motive is played and finally in m. 284 the soprano saxophones continue to the next figure of Lucifer’s embellished formula. The soprano saxophone had only played the fourth measure of Lucifer’s portion of the Tuesday formula (embellished super-formula, mm. 4–5), but now it plays the Lucifer figures from the fifth measure of the embellished super-formula (see Musical Example 21). From the first A’ in the soprano saxophone part in m. 284, the soprano saxophones play the Lucifer formula beginning at the first bracket marked “11” in the fifth measure of the super-formula; the soprano saxophones play up a whole step from the original formula and rather than the original rhythms, they play the motive as triplets, and subdivisions of the triplet, making it rhythmically similar to the main motive. Also heard with this portion of Lucifer’s formula, is the corresponding portion of Eve’s formula, her Kußgeräusche (kissing sounds). (See Eve’s formula in the fifth measure of the embellished super-formula in Musical Example 21.) The kissing noises can be thought of as the exaggerated sound of kissing someone on the cheek. The alto saxophones began playing kissing sounds in m. 281.

The end of the mm. 281–320 section is a climax reached by a crescendo starting at m. 317, leading to a fortissimo in m. 320 with everyone striking beat two together. This loud climax is contrasted by the Luftpause (pause, clear the air) that follows. The following section, mm. 321–340, is a long ritard followed by a long accelerando, with subito dynamic contrasts, from pp to f, intermixed. After the section, the air is then cleared again with a moment of silence. A

*Linker Augentanz*, mm. 281–290
rustling (Raushen) section follows, mm. 341–406, in mixed meter. Throughout the section, all of the saxophonists make wind noises or kissing noises. At m. 396 the intensity is heightened; all the saxophones and then the keyboard accentuate every triplet eighth note, the saxophones still making the noise of rushing wind (Rauschen) through their mouthpieces.

The texture from mm. 408–420 contrasts strikingly the previous music. Only the alarm bell and synthesizer hold a chord, while the others are silent. The baritone saxophone plays a solo in mm. 408–413. A six bar percussion solo follows in m. 414 using all four instruments.
Mm. 421–460 is a return to a texture with all of the performers, including all of the percussion instruments and a version of the main motive is audible. The main motive (A’, G, and D’concert) of the soprano saxophones is heard again with the familiar E’, B’, and A’ concert, in the tenor, baritone, and bass. Measures of pitched sounds are interspersed with measures of rustling noises. Mm. 461–492 is a mixed meter section with a thinner texture, featuring the two lowest saxophone voices, percussion, and synthesizer. These thirty measures insert contrast before the final return to original texture and motive.

At m. 493–532 the original texture returns, with every playing and the sopranos playing the melodic material. There are similarities to m. 421–460. With this return at m. 493, the synthesizer pattern from mm. 421–460 is repeated in mm. 493–532. The synthesizer part, in mm. 493–532, is quite varied from mm. 421–460, but it maintains its rhythmic shapes and several chords are heard again on the corresponding beat to the earlier section, mm. 421–460. The saxophonists sway their saxophones in unison. This section seems to be calming down, anticipating the end of the piece.

The last nine measures of Linker Augentanz (Left-Eye Dance), mm. 533–541, are a chromatic, homophonic push to the end (see Musical Example 22). The mixed meter ending section of the piece is ushered in by the synthesizer playing ascending chords in m. 532, while the saxophonists quickly move their saxophones up and down to each eighth-note as the scale ascends. The passage leads to a full-ensemble, fortissimo downbeat in m. 533, to begin the ending. The
soprano saxophones have the same preparatory notes that led into m. 61 leading into m. 533. They then descend to the end, beginning with the common motivic figure of the piece: A♭ at the top of the treble clef, down a half-step to G, and falling to D♭. This descent continues to the end with similar motivic shapes, using eleven of the twelve notes of the chromatic scale. “E,” the missing note, is emphasized in the last two measures by the lowest three saxophone voices. The soprano saxophones chromatically descend in the ending of the piece, using eleven of the twelve notes of the chromatic scale, arranged in the shape of the main motive.

*Linker Augentanz* (Left-Eye Dance) originates from the scene *Luzifers Tanz* (Lucifer’s Dance) from the opera *Samstag* (Saturday). Music was extracted from this scene and enlarged to create *Linker Augentanz*, a nearly twenty-minute concert work for saxophone section, percussion, and synthesizer. Lucifer’s figure from the *Tuesday* portion of the basic super-formula is the recurring main motive of *Linker Augentanz* (Left-Eye Dance); the figure is altered, yet recognizable, throughout the piece. Texture, timbre, and subdivision changes create contrast between sections. The emphasized periodic rhythm (one and one-half sextuplets) of *Linker Augentanz* is reinforced by the up and down motions of the saxophonists, which is a striking visual aspect of the piece.
Musical Example 22. *Linker Augentanz* mm. 533–541
Erwachen (Awakening, 2006/2007), the 12th Hour of Klang, was premiered on October 13, 2009, nearly two years after Stockhausen’s death, by Marcus Weiss (soprano saxophone), Marco Blaauw (trumpet), and Dirk Wietheger (cello). The performers are members of musikFabrik, a collective that has been involved in numerous performances and premieres of Stockhausen’s music. The performance took place in Brussels at the Palais des Beaux Artes to commemorate the 50th anniversary of the Goethe Institute Brussels. The Goethe Institute, BOZAR Centre for Fine Arts, and the ensemble musikFabrik assisted with the commission.

The titles from Hours 6–12 of Klang (Beauty, Balance, Bliss, Hope, Brilliance, Fidelity, and Awakening) are “noble words” all found in Stockhausen’s piece Türin, composed to complement “Heaven’s Door,” Hour 4; the words are to “hold open heaven’s door.”¹⁰⁰ In the trios of Hours 6–12, the performers recite a short phrase in relation to the title of the piece. In Erwachen, Hour 12, they vocalize, Erwachen in Gott (Awakening in God) together in the measure before section four.

Hours 6 through 12 of *Klang* are all trios based on the solo piece *Harmonien* (Harmonies), Hour 5, with *Erwachen*, Hour 12, being the last of the trios. *Harmonien*, Hour 5, exists in three versions: bass clarinet, flute, and trumpet. The flute and trumpet versions were transposed up a step and varied to suit the instruments. These transposition levels—the bass clarinet retaining the original pitch level and the flute and trumpet being up a step—are preserved in the trio *Erwachen*; the soprano saxophone and trumpet are rooted a whole step higher, while the cello is based on the original bass clarinet version and is thus a whole step lower than the other two parts.

Jerome Kohl, Stockhausen scholar, related that the first of the trios, *Schönheit*, Hour 6, “is the basic trio from which the subsequent ones are derived by permutation of the five main sections.”101 “The original trio, *Schönheit*, is also the simplest. The other six permute its five main sections and insert new material, sometimes as introductions or codas, and sometimes as interludes or cadenzas between sections.”102 *Erwachen* is written in five sections plus an introduction. The sections are numbered in the score.

Since *Erwachen* (Awakening) includes a cello, the performers are seated. For the trios that are mobile, however, the sections are visually differentiated on stage by the performers taking a new place on the stage for the start of each new section. The performers stand spread across the stage in the shape of a triangle, facing each other. At the start of each new section the performers switch places.

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101 Jerome Kohl, email correspondence with author, 3 September 2010.
102 Jerome Kohl, program notes, premiere of *Schönheit*, Lisbon, Portugal, October 2009, 1.
This movement around the stage is added visual reinforcement for the audience that a change has taken place in the music.

The number five is important in *Erwachen*. In addition to all of the trios being based on Hour 5, *Harmonien, Harmonien* and the trios each have five sections and they each use a 25-note row that begins and ends with the same pitch, which Jerome Kohl reminds us is, “similar to the 13-tone rows of *Mantra, Harlekin*, and the Michael Formula from *Licht*.”\(^{103}\)

The starting note of the row that is returned to in *Erwachen* is D\(^b\). This main note, D\(^b\), is the first note of the row, it is also the eighth note of the row, and it is the last note of the row. In the introduction of *Erwachen*, the 25-note row is presented by the soprano saxophone, starting from concert E\(^b\) (written F). It is written up a step (E\(^b\) rather than D\(^b\)), because the saxophone and trumpet parts are transposed up a whole step, in keeping with the flute and trumpet versions of *Harmonien*, as mentioned above. This introduction is reproduced in Musical Example 23. The piece begins with the main note in the soprano saxophone and trumpet (concert E\(^b\)). If one then turned to the last page of the piece, one would then see that it also ends with the main note in the cello (D\(^b\)). The trumpet also comes down to the concert D\(^b\) for the final chord—D\(^b\) concert in the cello and trumpet and concert F in the saxophone.

\(^{103}\) Jerome Kohl, program notes, premiere of *Schönheit*, Lisbon, October 2009, 2.

The large numbers above the staves (i.e., 14, 15, 12...) are the number of \( \text{\textbf{j}} \) per measure. The tempo for the measure is in a box directly below this number.
For comparison, the original row from *Klang* is reproduced with *Erwachen’s* row in Musical Example 24. *Erwachen’s* row is a transposition based on the inversion of the original row, with some octave displacement. The note labeled above the original row as “11,” corresponds with the first note of *Erwachen’s* row, the next note in the original row corresponds with the next note in *Erwachen’s* row, and so on.

**Musical Example 24. Klang & Erwachen Tone Rows**

*Klang*

![Klang Tone Row]

*Erwachen*

![Erwachen Tone Row]

In the introduction of *Erwachen*, the soprano saxophone, accompanied by the cello and trumpet, presents the tone row with some octave displacement. The performers play in homophonic motion during the introduction. Homophony is returned to throughout the piece. It contrasts to the passages of complex polyphony formed by the multiple simultaneous tempi.

Multiple simultaneous tempi are a major feature of *Erwachen.* Throughout, the piece vacillates, almost from line to line, between a shared
tempo and two or three contrasting tempi. In Musical Example 25, one can see that in the first measure of Section 1 all three parts have the tempo $\frac{\text{tempo}}{\text{1}} = 90$. In the next line, the trumpet part switches to $\frac{\text{tempo}}{\text{1}} = 142$, while the saxophone enters with $\frac{\text{tempo}}{\text{1}} = 127$. Then in the third line of the section all the parts come together again with $\frac{\text{tempo}}{\text{1}} = 134$.

Erwachen’s rhythms are based on twelve rhythm families created for Himmelfahrt, Hour 1. Each of the twelve rhythm families consists of twelve rhythmic patterns. Stockhausen’s analysis of Himmelfahrt contains more about these rhythm families.\(^{104}\)

In continuing with the theme of five, Jerome Kohl said, “Each section is subdivided into five groups of notes, ranging from three up to seven notes ($3 + 4 + 5 + 6 + 7 = 25$), permuted differently in each cycle.”\(^{105}\) To view this, one can look to Musical Example 25 and see that to begin the section, in the first measure the cello presents the tones 8–13 of the row, six notes. In the second measure, the cello then plays these six tones repeatedly in succession without preserving the previous rhythm, but rather playing the pitches quickly and evenly as triplets. This phrase structure can be seen several times on the page. For example, in the second system, the trumpet plays four notes, and then repeats them quickly as sixteenths notes. Also, when the saxophone enters on the second system, it plays

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\(^{104}\) Karlheinz Stockhausen, “Composition Course on Klang (Sound): The 24 Hours of the Day. Hour 1 ‘Ascension’ for organ or synthesizer, soprano and tenor, 2004/05, work no. 81.” Stockhausen Courses, Kürten, Germany, 2006.

\(^{105}\) Jerome Kohl, program notes, premiere of Schönheit, Lisbon, Portugal, October 2009, 1.
Musical Example 25. *Erwachen*, beginning of Section 1
three notes and then repeats them quickly. This phrase structure, to present a segment of the tone row and then play it in repetition quickly and evenly, is common throughout Erwachen and is found in each of the five sections. The repetition gives the impression of a composition teacher discussing a segment of a row used in a particular passage and playing the segment over and over for a student to learn its sound.

Erwachen’s formal structure is different from the pieces already discussed in this study. Erwachen’s, and the other trios’, unifying strand is the inverted Klang tone row. The trios, Hours 6–12, are all based on the solo piece Harmonien (Harmonies), Hour 5, and stress the number five: they have a 25-note tone row, they are divided into five sections and each section has five sets of note groupings. The pieces use multiple simultaneous tempi and rhythms based on rhythm families originally devised for Hour 1 of Klang. In Erwachen, the soprano saxophone and trumpet are transposed up a whole step from the cello, based on the transpositions of the flute and trumpet versions of Harmonien and the un-transposed bass clarinet version. Erwachen vascillates between homophony and polyphony. The contrasts are a feature of the piece and, along with repetition, allow for the piece to be immediately accessible to a listener.

Since the performers are seated and not moving around the stage, as in the other trios, there is less of a visual aspect in Erwachen. The yellow color the performers wear is the most apparent visual feature and a particular seating
arrangement is expected. Electronic media is used subtly, as in the other saxophone pieces, to amplify and balance the sounds of the performers in the hall.
CHAPTER 9

EDENTIA

*Edentia*, 20th Hour of *Klang*, layers 6 - 5 - 4 from *Cosmic Pulses* (13th Hour), 18 minutes 44 seconds, 2007

*Edentia*, Hour 20, for soprano saxophone and electronic music was premiered posthumously on August 6, 2008, by saxophonist Marcus Weiss at the *Norddeutsche Rundfunk* (NDR, Northern German Radio) in Hamburg. The title, *Edentia*, is a term from *The Urantia Book*, as are all of the titles from the second-half of *Klang* (i.e., *Uversa, Jerusem, Nebadon*...). In *The Urantia Book*, *Urantia* is the term that the inhabitants of other planets have given Earth and *Edentia* is an “architectural sphere” or “headquarters world.”

*Cosmic Pulses*

Hours 14–21 from *Klang*, including Hour 20, *Edentia*, incorporate music from the electronic piece *Cosmic Pulses*, Hour 13. For *Cosmic Pulses*, using the original *Klang* row, Stockhausen created loops with one to twenty-four pitches. The pitches span a range of seven octaves. He “superimposed [the loops] in twenty-four layers, with twenty-four different tempi,” ranging from 1.17 to 240 beats per minute, “242 different eight-track [channel] spatial motions and 192

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106 Encyclopedia Urantia, “Edentia,” http://encyclopediaurantia.org/edentia.htm (accessed 23 May 2009). In *The Urantia Book* it also says that after a several step process, “ascending mortals take up residence on Edentia.” *The Urantia Book* (Chicago: Urantia Foundation, 2001), 495. On a side note, in Dorland’s medical dictionary, “edentia” is the absence of the teeth. Considering a Chicago doctor was at the heart of the *The Urantia Book* compilation, maybe it is not that odd that this term appears in the text.
tracks.” The sounds, when projected, seem to “move” through eight loudspeakers.

In each of the eight pieces, Hours 14–21, three different layers from *Cosmic Pulses* were used, so that all of *Cosmic Pulses*’ twenty-four layers were utilized. Layers 24, 23, and 22 were used for Hour 14, layers 21, 20, and 19 for Hour 15...layers 6, 5, and 4 for Hour 20, *Edentia*, and so on. The score notes elaborate that, “The loops were enlivened by manual regulation of the *accelerandi* and *ritardandi* around the respective tempo, and by quite narrow glissandi upwards and downwards around the original melodies.” Thus the electronic music is not completely mechanically assembled; rather, the tempo changes and glissandi are adjusted by a human hand.

The spatialization plan for *Cosmic Pulses* was a new concept. Stockhausen mentions in the *Edentia* score notes that, “What is completely new is the kind of spatialisation: each section of each of the twenty-four layers has its own spatial motion between eight loudspeakers.” In Figure 8 are some of his diagrams of the motions. Stockhausen said, “For the first time, I have tried out superimposing twenty-four layers of sound, as if I had to compose the orbits of twenty-four moons or twenty-four planets...If it is possible to hear everything I

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109 Stockhausen, *Edentia*, score notes, I. A stereo version of *Edentia* is also available for practice and performance.
do not yet know – it depends on how often one can experience an eight-channel performance. In any case, the experiment is extremely fascinating...”


Gregorio Garcia Karman, a collaborator who assisted in the realization of *Cosmic Pulses*, created a report of the project entitled, “STUDIO REPORT – Spatialization of Karlheinz Stockhausen’s COSMIC PULSES.” Below is a technical description from the report on the realization of the spatialization with additional comments by reviewer Ingvar Loco Nordin:

The system developed for *Cosmic Pulses* [Reviewer’s note: Yes, an electronic device was built purposely for *Cosmic Pulses*, the OKTEG – Oktophonic effect generator – reminding me of other times when specific developments were needed, like in the case of the ring modulating machinery built especially for *Mantra*] is based on a spatialization device – the OKTEG – handling the real-time panning of eight simultaneous layers, coupled together with a Digital Audio Workstation (DAW) in charge of layer playback, trajectory recording and mixing tasks. The core of the OKTEG is a Max/MSP patch that implements eight variable-law amplitude-panning modules, each of them driven by a sequencer with its own tempo control.

These eight sequencers are controlled by means of messages managed by an execution queue, containing the rotation data. The tempo of each sequencer is adjusted in real-time by means of motor faders. A salient feature of this design is that spatial performance is encoded as a frequency-modulated audio-rate sawtooth and recorded as a standard audio track in the DAW, providing an integrated and sample-accurate trajectory recording environment.

In the report, Karman discusses the audio technology and processes used to create *Cosmic Pulses*.

**Analysis**

*Edentia* is a soprano saxophone solo with electronic music. The image on the cover of the score of *Edentia*, reproduced in Musical Example 26, appears to

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be a working draft of the first page of the saxophone score. The top stave on the cover shows the 24-pitch row and on the next stave begins the saxophone music of *Edentia*.


© Stockhausen Foundation for Music, Kürten, Germany (http://www.stockhausen.org).

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It appears to be a working draft, because there are a few discrepancies from the cover page illustration and the final score. In the diagram on the cover, the second-to-last section (A#) is labeled at 28' 30" and in the final version it begins at 28' 36". The final note of the row, in the diagram, is written an octave higher in the score, so that E is heard in both octaves as are all the other pitches of the row. The ending of the piece is labeled at 29' 40", but in the score it ends at 30' 44". The F in parenthesis at ca. 17' 56" on the cover, 6th stave, is omitted in the final score.
In the 24-note row, each pitch of the chromatic scale, except one, is presented, before a pitch is introduced an octave higher (see Figure 9). Eleven of the twelve notes of the chromatic scale are first presented, however E is reserved until after the first five notes have been repeated. Also, this pitch (E) is the last pitch of the row.

![Tone Row Diagram](image)

Figure 9. *Edentia* Tone Row Diagram

When comparing the original row from *Klang* with the *Edentia* row, in Musical Example 27, one sees that the *Edentia* row is based on the prime form of the original row, but is slightly rearranged. The first note of the *Klang* row is at the end of *Edentia’s* row. Also, the order of the hexachords of the original row is rearranged in the *Edentia* row. In the *Edentia* row, the first hexachord of the original is followed by the fourth hexachord of the original, then the third, and finally the second hexachord (1\text{st} – 4\text{th} – 3\text{rd} – 2\text{nd} hexachords), with octave displacement.
The top stave on the cover of *Edentia*, Musical Example 26, in addition to delineating the row, is also a diagram illuminating the form of the piece. Each pitch in the row corresponds to a section of the piece and is the first pitch of that section, thus there are twenty-four sections of the piece. Each staff is one section. The notes of the tone row diagram are circled and correspond to the circled note at the beginning of each line, denoting a new section.

Looking at the first stave, one sees that the saxophone's first pitch is C, the first tone of the 24-note row. Then C is followed by the next five notes of the row with some octave displacement. The second pitch of the tone row is F and correspondingly the second line of *Edentia* begins with F and is followed by the next two notes of the row. The piece continues in this manner for all twenty-four sections, with some permutations of the note order or other minor changes. For instance, the fourth line begins with the fourth note of the row, C♯, and then C♯ is continually referred back to in this line as it progresses. The section preserves the order of the next seven notes of the row as it cycles through them. Not until
the fifth line, that starts with D#, do some notes of the row fall out of order. In this section at 17' 46" the order should be F#, B, G#, G, however it has been reordered here as F#, G#, G, B.

One can compare the form of *Edentia* with that of *Mantra*. In *Mantra* a thirteen-note row in counterpoint with its inversion constitutes the formula. Each of the thirteen pitches has an associated feature, such as a repetition, a turn, an accent, or a particular articulation. The formula is cycled through thirteen times, each time emphasizing a different pitch and its characteristic feature. Both *Mantra’s* and *Edentia’s* forms are based on having one section of the piece for each note in the tone row.

In the musical diagram on the cover of *Edentia*, Musical Example 26, the top row of numbers above the tone row delineate the total number of notes per section that the saxophone will go through. For example, in the first stave (C) the saxophone plays six notes of the tone row, in the second stave three notes, in the third only two notes, in the fourth just one note is embellished (with other notes in tone row order), and in the fifth stave it plays thirty-six notes.

The row of numbers right above the tone row in Musical Example 26, and below the number of notes per section, is the timing in minutes and seconds for where each section begins in correspondence to the electronic music. The timing for the beginning of each section is listed above the corresponding note of the row. For example, the third section of the piece (with the main note D) begins sixteen minutes into the electronic music. Note that the timing at the beginning
of *Edentia* starts at twelve minutes, rather than at zero. *Edentia* begins twelve minutes into the electronic music from *Cosmic Pulses* and the saxophone enters at twelve minutes, forty seconds.

Throughout the score the timings are listed at the beginning of each line. Particular saxophone passages also have their timings and/or durations notated. For example, the fourth stave of *Edentia*, fifth line in Musical Example 26, demonstrates the notated duration of rests (i.e., 4, 8, 7, 6, 5...) and the timings listed for the entrance of particular musical figures (i.e., 16' 40", - 44", - 52"...). The saxophonist can use the timings to coordinate with the electronic part when rehearsing, however once she has learned the tape part the timings will be not of much importance.

**Text**

Text was also included in *Edentia*. It was recorded and added to the electronic music; the voice heard is that of Kathinka Pasveer, flutist and long-time collaborator with Stockhausen. The text is mostly single words or short phrases that are either drawn from *The Urantia Book* or describe compositional components, for example, “trills” and “glissandi.” The text of *Edentia* is listed in Figure 10.

The text is written in the saxophone score and helps orient the saxophonist with the tape part. A phrase of text introduces each of the twenty-four sections.
1. **EDENTIA**
2. *Konstellation*
3. *in NEBADON*
4. *Gärten GOTTES*
5. *TAUSENDE SEEN*
6. *Auferstehungshallen*
7. *SERAPHIM*
8. *Die himmlischen Musiker morsen morsen morsen*
9. *spielen stelle Glissandi*
10. *rote Punkte*
11. *in EDENTIA Dreiecke*
12. *Kreise Kreise*
13. *Edentische Kreuze Kreuze*
14. *Glieder Glieder*
15. *Trilleriller*
16. *Repetitionen*
17. *Konkave*
18. *Tremoli*
19. *Aleatorik*
20. *Explosion*
21. *Mikrointervalle*
22. *Gruppen von Gruppen*
23. *Sinusgeister*
24. *Familyten*
25. *Edentianer*

*“Edentianer” signals the end of the piece, rather than the beginning of a section.*

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Figure 10. Text of *Edentia*. Source: Text from Stockhausen, *Edentia*, score notes, I. Reprinted with the kind permission of the Stockhausen Foundation for Music, Kürten, Germany (www.stockhausen.org).

Sections 17–18 are reproduced in Musical Example 28. Section 17 (E) begins at 25' 20" and Section 18 (A) at 26'. In the electronic part one hears the word *Tremoli* at the end of Section 17, signaling the beginning of Section 18. Looking at the score, Section 18 begins on the syllable “li” of the word *Tremoli*, with the saxophone note A.
Musical Example 28. *Edentia*, Section 17 (E) and Section 18 (A)

The numbers in the boxes (i.e., 18, 19), before the text “Tremoli” and “Aleatorik” delineate the section the text introduces (i.e., the second stave pictured is section 18 and “Aleator-...” introduces section 19.)

The word or phrase that begins each new section acts as an anacrusis to the new section and the section usually begins on the last syllable of the word or phrase. The exceptions to this are listed in Figure 11. In a few instances the final syllable of a word starts the new section, but another word(s) follows (as in Sections 8, 11, and 13). Section 8 begins on the last syllable of the phrase *Die himmlischen Musiker* (The celestial musicians), but as the section progresses, morsen is repeated three times. Morsen refers to Morse code, the system that uses long and short flashes of light or beeps of sound to represent letters of the alphabet, the sounds of which the saxophonist imitates in this section. After the final section, Section 24, *Edentianer* (Edentian) is recited in the electronic music to signal the ending. Then there are several more seconds of electronic sounds before the piece ends.
<table>
<thead>
<tr>
<th>Section</th>
<th>Text Exception</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1</td>
<td>“Edentia” is recited just after the beginning of the section.</td>
</tr>
<tr>
<td>Section 5</td>
<td>Begins on the second-to-last syllable (“Se”) of Tausende Seen.</td>
</tr>
<tr>
<td>Section 6</td>
<td>Also begins on the second-to-last syllable (“hal”) of Auferstehungshallen.</td>
</tr>
<tr>
<td>Section 8</td>
<td>Begins at the end of the phrase Die himmlischen Musiker (The celestial</td>
</tr>
<tr>
<td></td>
<td>musicians). Then morsen (as in Morse code) is repeated three times.</td>
</tr>
<tr>
<td>Section 11</td>
<td>Begins at the end of in Edentia. Then Dreiecke (triangles) follows.</td>
</tr>
<tr>
<td>Section 13</td>
<td>Begins at the end of edentische Kreuze. Then Kreuze (crosses) is recited.</td>
</tr>
</tbody>
</table>

Figure 11. *Edentia* text exceptions to the final syllable beginning a new section

Reading the Score

In *Edentia*, the musical notation for the saxophonist is a guide, which may appear imprecise; Stockhausen left the responsibility of working out the precision to the performer—not in an aleatoric sense, but rather in the sense that the score is an equation the performer must solve. For instance, in Section 15 (F), saxophonist Marcus Weiss worked out that, in the time given, to play the trills and continually space them further apart, he thinks of the tempo \( \downarrow = 180 \). The first trill gets the span of one quarter note. The second note, together with its following rest, get the span of two quarter notes. The third note and its rest get three quarter notes, and so on, until the last note (C\#) and its rest get the duration of fifteen quarter notes. The score includes exact timings for particular events, yet for others the performer must calculate their position in time. The performer must decide when to play the notes, based on the total amount of time in each section.

Stockhausen used graphic notation for *Edentia* when it provided an efficient means of communication. For example, in Section 6 (A#) the performer
is to bend the pitch according the shape of the line, as seen in the bottom stave of Musical Example 26. Also graphically notated is Section 19; the notes are spatially drawn in the score to give a guide as to how much time should pass. They are spatially notated in that the further apart the note heads, the more time there is to be between them, which is similar to the rest of the piece. This section also has seconds demarcated as a guide in approximating how much time should pass between notes. Shown in Musical Example 29, Section 19 is introduced by the word Aleatorik. It begins at the line starting at 26’ 30". The notation of this section conveys the intended rhythmic gesture without extra implications that would arise from the use of traditional notation.

Musical Example 29. Edentia, Section 18 (A) and Section 19 (G)

Pitch bending and long glissandi are common in Edentia. Microtonal fingerings can aid in this process and are specifically requested in line seven (F# section) when the performer is asked to glissando up from first space F# to the B above the staff and back down using microintervalic fingerings. These long
glissandi occur multiple times, i.e., line 7 (F#), line 17 (E), and line 21 (B). The first line of Musical Example 28 shows Section 17 and Musical Example 30 shows Section 21. In Sections 7 and 21 the glissandi are both to be irregular, meaning the saxophonist should change the pace of the glissandi, speed up and slow down her fingerings, but not evenly move up or down. In addition to using fingerings to glissando, a saxophonist may also bend the pitch (as one would normally alter pitch for tuning, by changing the shape of the oral cavity and vocal tract). For the short descending glissandi, such as the last in Section 9 going from D above the staff down an octave to fourth-line D, this may be especially useful.

Musical Example 30. *Edentia*, Section 21 (B), 18" glissando (27' 30" to 27' 48")

Traditional musical notation does not completely lend itself to electronic music. The saxophonist must learn the part using the tempo that is marked, $\downarrow = 60$. As one will recall, though, the tape part loops were constructed using various tempi, so the tempo marking is descriptive of the saxophone part, but not descriptive of the tape music. The performance of *Edentia* is, thus, a mixture between internally recalling the tempo and having learned the tape part to know
when to play the saxophone notes. Particular discernible groups of pitches in the electronic music provide subtle cues for entrances.

Movement

In the Klang solos with electronic music from Cosmic Pulses, the interpreter is to move and gesture to illustrate the music. There is no mention of body motions in the score of Edentia, but the saxophonist is expected to incorporate graceful, musical movement into his interpretation. Kathinka Pasveer, flutist and long-time collaborator of Stockhausen, gives thoughtful interpretations of Paradies, Hour 21. When giving a master class on Edentia, she described its motions and text as a “pedantic composition lesson.” For example, in composition, traditionally, one would not compose a phrase exactly the same as the previous phrase, so one should not move in the same manner as one did in the previous phrase; one should have a different movement or face a different direction. Because the movements are not written into the score, the motions are the performers’ choice; they can choose what they envision is most fitting and graceful. The expectation to include motions entrusts another level of thought and analysis of the piece to the performer when planning her interpretation.

At the Stockhausen Courses, the favored performance practice for Edentia is for saxophonists to begin from off stage and enter as the tape begins. They look around at their surroundings as they make their way downstage. The first

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113 Kathinka Pasveer, master class with author, Kürten, Germany, August 2010.
saxophone note is a long held note. The interpreters add movement and
direction to this note, musically and physically, sometimes outlining a large circle
in the air with the saxophone. The saxophonists outline the shape of musical
gestures with their physical gestures. For example, as they descend in pitch, they
lower the saxophone. When not playing, they are usually not moving. For long
notes, one can make large sweeping gestures utilizing both sides, down, and
extreme up—the neck should be tilted all the way back—which will take some
muscle strength. The text can also guide the movements. In *Edentia*, when the
text is “explosion,” performers must think of how to best illustrate this with their
bodies. Saxophonist Naomi Shirai, for example, imagines illustrating the path of
a firework as it dissipates. She reaches high into the air with both arms, her
soprano saxophone in one hand and the fingers of the other hand outstretched.
Then she brings the arm down to her side slowly, creating the arc of a falling
ember. In the other hand she mirrors this motion with the soprano saxophone.
After the final saxophone note of *Edentia*, the saxophonists leave the stage from
where they entered, with the saxophone still poised for playing, as the final
electronic music is heard.

Retrospective

Stockhausen’s works for saxophone span a large portion of his career.
*Edentia* was composed in Stockhausen’s very last year of life; it was his second-
to-last piece. One can look back on his life’s work and think about his research
with electronic sound, his experiments with spatialization, and the systematic
ordering of the construction of his pieces, combined with the spiritual nature
associated with the last thirty years of his work and see what in his late years he
chose to make audible for our ears—*Edentia*. From those many years of thinking
about and creating music, one can see what he chose, what still interested him,
and what he was still exploring.

After years of composing and a wealth of compositional styles to choose
from, he chose to continue to work with a tone row, a 24-note row, and to create
an electroacoustic piece. The row not only provides the order of the pitches, but
also projects the form of the saxophone part, reminiscent of formula composition
and the form scheme of *Mantra*. Loops of varying lengths of the tone row are
combined in the electronic music, which is an exploration in spatialization.

Stockhausen was still exploring the spatialization of sound and increasing
the complexity of the motions of the sounds. He was exploring in areas where it
was not known if human perception could grasp. As he mentioned in regard to
*Cosmic Pulses*, he found his experiment interesting, even though he was not sure
if one could perceive all of the layers even after multiple hearings.

*Edentia* is projected into a hall for an audience to absorb as it unfolds.
Because of the length (almost twenty minutes) and complexity of *Edentia*, it
requires a stillness and mindfulness to absorb. The repetitions, complexity,
texture, and time commitment remind the author of Northern India’s classical
music and its intricacies. With *Edentia*, the complexity for a listener is high, but
at the same time it can swim into the background of one’s consciousness; the
electronic music can be focused on or can be the buzz behind the saxophone; the
saxophone can be brought to one’s attention and then it is gone again. Does the
listener focus on the layers of loops at present? Does he hear a new beginning?
Does he try to perceive a pattern from what he has heard previously in the
saxophone or in the tape? Does he simply hear static—a feeling of being in the
moment with no sense of motion forward?

Of all the saxophone works, *Edentia* is the prime example of Stockhausen’s
use of electronic media and spatialization. The loops of *Cosmic Pulses*, Hour 13,
used in Hours 14–21, were to move around the space, via over two hundred
different motions around eight speakers. *Edentia* was constructed with a high
level of organization using a 24-note row and twenty-four sections, yet the piece
also relies heavily on the integrity and skill of an experienced interpreter to make
music out of the notes on the page and to illustrate the music with graceful
movements.
CHAPTER 10
CONCLUSION

Stockhausen’s use of a formula, a tone-row, visual aspects, spatialization of sounds, and electronic media are all integral components of his musical output and all are demonstrated in his works for saxophone. Firstly, formula composition was a major organizational technique employed by Stockhausen for over thirty years. The formula was a blueprint for a work, but Stockhausen, guided by his musical taste, made alterations to his preconceived plans and did not follow them exactly. Also, Stockhausen did not always use a formula to project the form of a piece. In the case of In Freundschaft he cycles through the formula several times, each time varying the music. In Saxophon he strings together several formulae from some of his earlier pieces. The usage of the formulae in Saxophon was unusual, yet maybe illustrative of the title: The Course of the Years, from which Saxophon is extracted. Finally with the beginning of Klang in 2004, Stockhausen moves away from formula construction and uses simply a tone row to organize his music; the saxophone works Erwachen and Edentia are each based on a version of the 24-note tone row used throughout Klang.

In addition to the aural aspect of his pieces, Stockhausen was interested in the visual aspect. In score notes, he addressed topics ranging from the setup of a hall to the color of a performer’s costume. Also, a refined performance practice
exists for Stockhausen’s wind music, including his saxophone pieces. The performance practice is a part of the visual component of his pieces and involves idiosyncratic movements of the performer on stage. The movements are to illustrate what is heard in the music. Often these motions are chosen by the performer, while keeping in mind the distinctive manner of the stylized motions associated with the performance practice of Stockhausen’s music. Additionally, in some of his music, he gave instructions for the movements to be performed by the instrumentalist or vocalist. For In Freundschaft, motions for the performer are written into the score. They correspond to the counterpoint and illustrate with movement what the ear is hearing. This concept of illustrating for the listeners what they are hearing, is also an integral part of Edentia. The motions, however, are not written in the score, rather they are chosen by the performer.

Spatialization of sounds was of particular interest for Stockhausen throughout his career. Experimentation with the projection of sound in a hall was a major part of Cosmic Pulses, from which the electronic music for the saxophone piece Edentia (2007) is borrowed. Twenty-four layers of looped electronic music were projected in different patterns around the hall from eight loudspeakers. The octophonic projection explores perception of sound and motion of sound around the speakers.

One can admire the variety demonstrated within Stockhausen’s saxophone music. For instance, he used the saxophone in a dramatic work, The Course of the Years from which Saxophon was extracted, styled after traditional Japanese
theater with the saxophone imitating the Japanese hichiriki, and in a small duet, Knabenduett, for soprano saxophones whose resultant tones ring in the ear. He composed a playful and lively isorhythmic piece, Linker Augentanz (Left-Eye Dance) for a whole family of saxophones imitating the blinking of an eye. In the mixed trio, Erwachen, he explored multiple simultaneous tempi and his saxophone solo piece, Edentia, is to be played with electronic music shooting around the hall. There is even variety within the personnel required for each saxophone piece; he has pieces for solo saxophone, solo with electronic music, a duo, a trio, a large chamber ensemble, and large modern wind band that includes saxophones in the ensemble.

Among saxophonists there is sometimes confusion about Stockhausen’s music. For instance, one might see that there are versions of In Freundschaft published for a variety of instruments and wonder, “On what instrument did the composer originally intend this work to be played?” As has been mentioned, however, Stockhausen’s original intent was for the piece to be played by any melodic instrument, and playing the piece on saxophone is well within the bounds of the composer’s original intention. Additionally, in regard to the saxophone pieces that were originally part of an opera, confusion arises as to whether these pieces can be effective concert works. As has been discussed, though, Stockhausen himself chose to extract these works because he felt they were suitable as stand-alone concert pieces, and numerous interpreters have successfully performed them. Saxophonists can authentically play these kinds of
pieces by Stockhausen, in that the saxophone is a suitable instrument to play pieces for an unspecified melody instrument and that extracts of his operas translate well to the concert hall.

In addition, a saxophonist may be interested in understanding how one of Stockhausen’s saxophone pieces is related to his output as whole, how it fits into an opera, or how it is constructed. One can see that these questions are not answered in just a few sentences. Stockhausen explored many techniques and styles; his saxophone pieces are from various decades of his career and each has its own features, making it impractical to generalize about them altogether.

Interest in a composer’s works often comes in waves. For instance, an event focusing on a particular composer’s music may bring renewed attention to performing and discussing that composer’s pieces. Stockhausen has been celebrated in recent years, for example, with a tribute in London at the Southbank Centre in November 2008 (planned before his death) and in May 2010 with a performance of Klang in its entirety in Cologne. The individuals of the Stockhausen-Verlag (Stockhausen Publishing House) and Stockhausen-Stiftung für Musik (Stockhausen Foundation) see to the promotion of Stockhausen’s music and ensure that the intricacies of his music and sound projection are passed on to a new generation of musicians, especially every summer at the annual Stockhausen Concerts and Courses. These organizations, along with a dedicated group of interpreters and scholars, continue to keep Stockhausen’s music alive.
APPENDIX A

STOCKHAUSEN’S WORKS FOR SAXOPHONE

The scores up to and including Work Number 29 are published by Universal Edition, Vienna, Austria. All scores as of Work Number 30 are published by the Stockhausen-Verlag, 51515 Kürten, Germany.

Work No.

6 GRUPPEN (GROUPS) for 3 orchestras (109 players, 3 conductors) with alto saxophone, baritone saxophone (1957)

10 CARRÉ for 4 orchestras and choirs (77 instrumentalist, 64 or 48 choir singers, 4 conductors) with alto saxophone, tenor saxophone, baritone saxophone (1960)

14 PLUS-MINUS 2 x 7 pages for realization (1963)

19 SOLO for melody instrument with feedback (1966)

27 SPIRAL for a soloist with short-wave receiver (1968)


41 ½ TIERKREIS (ZODIAC) 12 Melodies of the Star Signs for a melody and/or chordal instrument (1975)


46 9/10 IN FREUNDSCHAFT (IN FRIENDSHIP) for saxophone (1977)

47 JAHRESLAUF (COURSE OF THE YEARS, Act 1 of TUESDAY from LIGHT) for tenor, bass, modern orchestra (3 synthesizers, 3 piccolo flutes, 3 soprano saxophones, electric harpsichord or synthesizer, guitar, 3 percussionists), tape and sound projectionist (1977/1991)

47 ½ DER JAHRESLAUF (THE COURSE OF THE YEARS) for modern orchestra (3 synthesizers, 3 piccolo flutes, 3 soprano saxophones, electric harpsichord or synthesizer, guitar, 3 percussionists), tape and sound projectionist (1977)

1. ex 47 PICCOLO (solo for piccolo from COURSE OF THE YEARS) of TUESDAY from LIGHT version for soprano saxophone and geisha bell (1977/2004)
<table>
<thead>
<tr>
<th>2. ex 47</th>
<th><strong>SAXOPHON</strong> (from COURSE OF THE YEARS) for soprano saxophone and bongo or as a solo for soprano saxophone (1977)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td><strong>MICHAELs HEIMKEHR</strong> (MICHAEL’S HOMECOMING, Act 3 of THURSDAY from LIGHT) for tenor, soprano, bass / trumpet, basset horn, trombone / 3 dance-mimes / old woman / choir and orchestra / tapes (1980)</td>
</tr>
<tr>
<td>2. ex 50</td>
<td><strong>KNABENDUETT</strong> (BOYS’ DUET from MICHAEL’S HOMECOMING) for 2 soprano saxophones or other instruments (1980)</td>
</tr>
<tr>
<td>53</td>
<td><strong>LUZIFERs TANZ</strong> (LUCIFER’S DANCE, 3rd scene of SATURDAY from LICHT) for bass voice (or trombone or euphonium), piccolo trumpet, piccolo flute, symphonic band (with 2 soprano saxophones, 2 alto saxophones, 1 tenor saxophone, 1 baritone saxophone, 1 bass saxophone) (1983)</td>
</tr>
<tr>
<td>3. ex 53</td>
<td><strong>LINKER AUGENTANZ</strong> (LEFT-EYE-DANCE) for saxophones (e.g. 2 soprano saxophones, 2 alto saxophones, 1 tenor saxophone, 1 baritone saxophone, 1 bass saxophone), a percussionist, a synthesizer player (1983/1990)</td>
</tr>
<tr>
<td>1. ex 55</td>
<td><strong>Xi</strong> for a melody instrument with micro-tones (1986)</td>
</tr>
<tr>
<td>1. ex 57</td>
<td><strong>DIE 7 LIEDER DER TAGE</strong> (THE 7 SONGS OF THE DAYS, of MONDAY from LIGHT) for voice (also child’s voice) or voice and chordal instrument or melody instrument or melody instrument with chordal instrument – edition with original register and high register (1986)</td>
</tr>
<tr>
<td>2. ex 58</td>
<td><strong>2/3 ENTFÜHRUNG</strong> (ABDUCTION from EVAs ZAUBER Act 3 of MONDAY from LIGHT) for soprano saxophone and electronic and concrete music or as solo for soprano saxophone [originally for flute] (1986/2004)</td>
</tr>
<tr>
<td>3. ex 59</td>
<td><strong>YPSILON</strong> for a melody instrument with micro-tones (1989)</td>
</tr>
<tr>
<td>72</td>
<td><strong>EUROPA-GROSS</strong> (EUROPE GREETING) for winds (and synthesizers ad lib.) (e.g., 1 or more saxophones) (1992/2002)</td>
</tr>
<tr>
<td>92</td>
<td><strong>KLANG – 12th HOUR ERWACHEN</strong> (AWAKENING) for violoncello, trumpet, soprano saxophone (2006/2007)</td>
</tr>
<tr>
<td>100</td>
<td><strong>KLANG – 20th HOUR EDENTIA</strong> for soprano saxophone and electronic music (2007)</td>
</tr>
</tbody>
</table>

## APPENDIX B

### HUMAN SUBJECTS APPROVAL

**THE UNIVERSITY OF ARIZONA**

Human Subjects Protection Program

**HSPP Correspondence Form**

Date: 12/03/09  
Investigator: Elizabeth Bunt, DMA Student  
Advisor: Janet Sturman, PhD  
Project No./Title: 09-0874-00 Karinhaus Stockhausen's Music for Saxophone  
Current Period of Approval: 12/03/09 – no expiration

**IRB Committee Information**

<table>
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<th>Administrative Action</th>
<th>Administrative/Exempt Review – 12/03/09</th>
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</table>

**Nature of Submission**

- New Project

**Documents Reviewed Concurrently**

| Documents Reviewed Concurrently | Appr: Approved  
Adm: Acknowledged  
Rev: Reviewed |
<table>
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<tr>
<td>Project Review Form (received 09/04/09)</td>
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<td>Consenting Instruments: Subject Consent Form</td>
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<tr>
<td>Re-consent: □ All □ Current Only □ Not Required</td>
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<td>Recruitment Materials: Email</td>
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<td>Questionnaires/Surveys: Interview Questions</td>
<td>Appr</td>
</tr>
<tr>
<td>Proposal: Lecture-Recital Document Proposal</td>
<td>Appr</td>
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</tbody>
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**Determination**

- **Approved as submitted effective 12/03/09**

**Additional Determination(s)**

- Exempt Approval 45 CFR 46.101(b)(2): Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior.

---

Elaine G. Jones, Ph.D.  
Chair, IRB2 Committee  
UA Institutional Review Board

EGJ:mm  
Cc: Departmental/College Review Committee

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**Reminders:**  
Continuing Review materials should be submitted 38-45 days prior to the expiration date to obtain project re-approval

- Projects may be concluded or withdrawn at any time using the forms available at [website URL].
- No changes to a project may be made prior to IRB approval except to eliminate apparent immediate hazard to subjects.
- Original signed consent forms must be stored in the designated departmental location determined by the Department Head.

Arizona’s First University – Since 1885  
Form version: 09/21/09
Dear Elizabeth,

thank you for this information.

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Sincerely,

Suzanne Stephens

Am 22.09.2010 um 19:30 schrieb Elizabeth Burt:

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Kettenberg 15
51515 Kürten
GERMANY

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Sincerely,

Elizabeth Bunt

Items requesting permission to use:

Formula diagram from Stockhausen, “The Art, To Listen,” 2.

In Freundschaft final formula statement (for clarinet) from “The Art, To Listen,” 15.

Diagram illuminating the almost complete palindrome of pitches in the last cycle of the formula of In Freundschaft from “The Art, To Listen,” 15.

Harlekin Formula, Der verliebte Lyriker, Harlekin, 6-7.

Inori Formula

Mantra Formula

Lucifer’s Dance poem:

If you, Man, have never learned from LUCIFER
how the spirit of contradiction and independence
distort the expression of the face,
how brow can dance versus brow,
— eye versus eye,
cheek versus cheek,
nose versus cheek,
lip versus nose,
tongue versus lip
and chin versus tongue —
you cannot turn your countenance in harmony
towards the LIGHT.

Scene 3, “Lucifer’s Dance,” from Saturday, at the Palazzo dello Sport in

“Lucifer's Dance” Periodic Rhythms (i.e., Samstag. Deutsche Grammophon, 1988, liner notes, 81.)

Edentia cover art by Stockhausen: 24-note row diagram & beginning lines of saxophone part

Diagram used in the realization of Cosmic Pulses’ motions around eight speakers.


Full text of Edentia
1. EDENTIA
2. Konstellation
3. in NEBADON
   etc...

Complete works list of pieces for saxophone by Stockhausen.

Super-formula for Licht
REFERENCES

Literature


“Composition Course on Klang (Sound): The 24 Hours of the Day. Hour 1 ‘Ascension’ for organ or synthesizer, soprano and tenor, 2004/05, work no. 81.” Stockhausen Courses, Kürten, Germany, 2006.


Musical Scores


Discography


