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From Heaven, Through the World, to Hell

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements of the degree of Masters in Music (Composition)

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Abstract

From Heaven, Through the World, to Hell is a theatrical piece which makes reference to various versions of the Faust legend. There are two versions of the piece: the full version for actress-singer, CD, computer, and four chamber ensembles (piano quintet, baroque trio, jazz quartet and modern ensemble), and the solo version for actress-singer, CD, and computer. The work explores the Faust legend within a technological musical theatre framework, and makes extensive use of live computer interaction using the Max/MSP programming environment. The singer interacts with the computer using an infrared sensor, allowing her to trigger as well as shape many of the sounds in the piece through physical gestures. This piece was written for g.e.m.s. (the Group of the Electronic Music Studio) as part of the McGill University Faculty of Music composer-in-residence program between 1998-1999.

From Heaven, Through the World, to Hell est une oeuvre théâtrale qui fait reference à plusieurs versions de la légende de Faust. Il y a deux versions de cette oeuvre: le version complet pour comédienne-chanteuse, disque-compact, ordinateur, et quatre ensembles de chambre (quintet de piano, trio baroque, quatuor de jazz, et ensemble moderne); et le version solo pour comédienne-chanteuse, disque-compact, et ordinateur. L'oeuvre explore la légende de Faust dans une sorte de cadre technologique musical et dramatique et repose beaucoup sur l'interaction en direct avec l'ordinateur, dans le contexte Max/MSP. Cette interaction est assurée par des détecteurs infrarouges, ce qui permet à l'interprète de déclencher et de façonner beaucoup de sonorités au moyen de gestes. Cette oeuvre a été composée pour le g.e.m.s., dans le cadre du programme de compositeur attitré de l'Université McGill en 1998 et 1999.

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I would like to acknowledge the financial support of the Manitoba Arts Council, who through their Arts Education Program provided partial funding for my post-graduate studies. I would also like to thank my thesis advisor, alcides lanza, for his wisdom and guidance during my studies at McGill University, as well as Zack Settel for his help in developing real-time performance systems on the Macintosh. A special thank-you also goes to Juliana Pivato, who worked very hard and gave an incredible premiere performance of the solo version of this piece on May 17, 1999, and to all the members of g.e.m.s., who helped with the organization and production of that concert.

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From Heaven, Through the World, to Hell

I. Introduction

From Heaven, Through the World, to Hell was written for g.e.m.s. (the Group of the Electronic Music Studio) between July 1998 and May 1999, as part of the McGill University Faculty of Music composer-in-residence program. I had been interested in writing a piece which would explore the impact of technology on humanity's art and culture, and which would combine my fascination with the ancient science of alchemy, the occult, and the Faust legend with my attraction towards the use of modern computer technology in composition. Live computer interaction was incorporated into the piece in order to enhance the theatrical experience of the performance and to reflect a sense of magic and wonder in the subject matter. The piece requires a certain amount of acting from the performer, with the use of spoken texts as well as sung passages, in the style of music theatre. This was somewhat of a new direction for me, in that I had only began to experiment with ideas of music theatre in the piece *heretheycometheretheygo...*, composed just prior to this. In writing that piece I found that using theatrical elements in the music is the best way to draw an audience deeper into the piece. This is the style which has been most satisfying to me artistically, and within which I plan to continue to work in the future.

A compositional tool which I often employ in my writing and which has become an important part of my aesthetic position as a composer is the quotation or recontextualization of previously composed works. This process not only creates a link between the music of the present with the music of the past, but it is also an effective way to draw the audience deeper into the music in order to strengthen the connection between composer and audience. The process is also used frequently as a means to deconstruct or make commentary on compositions or musical styles. I have often used short fragments of previously composed works in my own compositions in order to create a collage texture. By deconstructing various works into their basic elements and then restructuring those fragments in interesting combinations, new works can be generated in which building relationships between the fragments becomes the compositional goal. The rapid shifts between musical languages in new contexts and the harsh juxtaposition of stylistic allusions found in these collage textures also act as a commentary on popular culture and its affinity for rapid changes in music. These shifts are meant to imitate what I call the "television aesthetic," and reflect the way in which themes and concepts change every thirty seconds with each advertisement, and how the scenes and images they contain pass by at a frenetic pace. This compositional idea is reflected most clearly in "VII. Walpurgis Night's Dream" from *From Heaven, Through the World, to Hell*, and will be discussed further in this paper.

One of the fundamental ways in which quotations from other works are used in my own compositions is as a tool to combine multiple musical languages within a single work. This is in my opinion a significant reflection of the influence of globalization on world cultures in the 20th century. With the speed and frequency of long distance communication expanding exponentially, we are bringing ourselves closer to realizing the idea of a "global village," and in my view it is important to reflect this in our art and music. The idea of multiple musical languages is built into the instrumentation of this piece, with each ensemble representing a distinct musical genre or style (piano quintet representing classical and romantic period western European music, the baroque trio representing early music, the jazz quartet representing 20th century North American pop music, and the modern ensemble representing current experimentation with technology in music). The distinct characteristics of each ensemble are used extensively throughout the piece, especially in "VII. Walpurgis Night's Dream," where quotations and stylistic allusions appear in rapid succession.

The development of the Max/MSP programming environment since the public release of MSP in December 1997 also had an effect on the composition of this piece and on the recent development of my compositional ideas. The power of recent Macintosh computers combined with the interactivity of applications created within Max/MSP allows for a great deal of interaction between performer and computer without the need for external devices. Particular attention was given to the work done by Zack Settel in the field of real-time digital signal processing and Bruce Pennycook's use of live computer interaction to control the flow of a piece. These ideas and their implementation in much of my own work will be discussed in section III, "Live electronics and the creation of the electroacoustic part of the piece."

II. Compositional ideas and analysis of the work

The overall structure of *From Heaven, Through the World, to Hell* can be divided into three parts: the introductory section (movements I-III), the main body of the work (movements IV-VII), and the closing section (VIII). The introductory section presents some of the main musical and conceptual ideas of the work: granular synthesis techniques and the live interaction between performer and computer are introduced immediately in "I. Overture" and then expanded upon in "II. Dedication" and "III. Prologue: In the Theatre," the use of stylistic allusion and the quotation and deconstruction of previously composed works are introduced in "III. Prologue: In the Theatre," and the juxtaposition of multiple languages is found throughout the introduction (textually in "I. Overture" and musically in "III. Prologue: In the Theatre"). These ideas are explored and become developed fully over the course of the main body of the work, reaching a climax in "VII. Walpurgis Night's Dream." The final movement, "VII. Postlude," is calm and serene to provide a sense of closure for the audience and to contrast the frenetic pace which dominates much of the piece.

The texts used in the piece define the structure of each movement, as each movement is built around different passages quoted from various sources.[1] Texts in several different languages are used in the piece not only to provide the means for juxtaposition of various spoken languages, but also to coincide with the shifts of musical languages between and within the movements. Shifts from one language to another often occur in parallel to changes in musical style, something which helps to define the particular characteristics of each movement. The use of multiple languages in the text is also meant to reflect the mental instability of the Faust character in this piece. Rapid shifts from one language to another and the alternation between spoken and sung sections are meant to give the impression of schizophrenic tendencies in the character. The suggestion is that the incantations to summon Mephistopheles ultimately bring forth a change in his own personality (similar to the Dr. Jekyll and Mr. Hyde model) rather than the traditional visitation from a servant of Satan which is found in most other versions of the Faust myth. The rapid shifts in musical languages add to the impression of mental instability by enhancing the mood changes in the Faust character, and the use of quotation is meant to reflect the gradual loss of his own personality.

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[1] The full text, along with translations, can be found in the appendix.

The solo version of the piece, for actress-singer, CD, and computer, was composed first, with the intention that it be expanded into the full version by orchestrating most of the electroacoustic part. I consciously set out to create very specific problems for myself, in that when constructing the electroacoustic part for the solo version of the piece I tried to come up with sounds which could conceivably be orchestrated (although I was diligent not to simply create electronic sounds which were exact replicas of orchestral instruments). Once a framework of sound was constructed from which to begin, the instrumental version of the piece was created. This procedure allowed me to focus more clearly on my compositional freedom, in that I could put together exactly the sonority, effect or rhythm that I imagined first and worry about technical or orchestral problems later. I have always found it easy to be creative using sound-editing and sequencing software, primarily because the feedback from ideas comes so quickly and new ideas can be worked on intuitively. When I hear my work I can decide immediately whether to keep it or throw it away and start over again. By using my own Real-Time Granular Synthesizer software (RTGS, see section III for a description) I was able to improvise most of the music first and then assemble and orchestrate it later. This is not unlike many composers' pattern of composition, and the pattern which I employed before I began to use computers, which is to start at the piano to design and test the basic ideas, then move to paper in order to assemble those ideas. In this way the computer was used as a musical and compositional instrument, a testing ground for ideas as well as a tool to realize those ideas.

The improvisational approach to electroacoustic composition has proven to be very useful to me, and it has influenced the development of my own process of creating a new electroacoustic work. There are three steps involved in the process: development of the technology, improvisation using the technology, and creation of a piece based on that improvisation and which takes full advantage of the technology. For this piece, step one was the development and refinement of my own Real-Time Granular Synthesis software using the Max/MSP programming environment (see section III for a discussion of Max/MSP). This was analogous to building a new musical instrument, in that available technologies were assembled into a device (in this case, a piece of computer software) with which to create musical sounds. Step two involved experimenting with the capabilities and limitations of the device, and the creation of a short composition which took shape from various improvisations (the resulting piece is *decon_orb.aiff*). All of the techniques of granular synthesis employed in creating *decon_orb.aiff* were used extensively in the creation of *From Heaven, Through the World, to Hell*. Step three was the preparation of the finished score and performance materials for the work.

The sonorities created for the computer audio part of "I. Overture" were generated by deconstructing short samples of orchestral instruments through granular synthesis. In the fully orchestrated version, much of the material played by the performers is similar to the audio samples which were used as source material in the granulation processing. The resulting effect is that the original instrumental sounds can be heard next to their deconstructed counterparts being played by the computer. An analogy can be drawn between the alchemical act of transmutation from one substance to the other and the musical act of creating new sonorities from fragments of instrumental sounds. This is a major part of my own interest in granular synthesis; the ability to take source material, deconstruct it into tiny particles, and then reassemble those particles to create entirely new sounds. I first explored this concept in my solo tape piece *The Alchemist's Flame*, in which samples of mainly environmental sounds were taken and transmuted into new electronic sounds using granular synthesis software.

A typically postmodernist idea predominant in art and music during the past twenty-five years is the concept of deconstructing previously composed works in order to create a new work in which the relationships between the fragments creates musical interest in the work itself. A famous example of this is Luciano Berio's *Sinfonia*, in which the scherzo from Mahler's Second Symphony is used as a canvas upon which a multitude of fragments from other works is superimposed. This idea of manipulating fragments of past works to make commentary and criticism on those works has been used more recently by the composers John Zorn (in the string quartet *Forbidden Fruit*), John Oswald (in the series of works entitled *Plunderphonics*), and Netochka Nezvanova (on the compact disc *A9FF - krop-ErOm*). In *Forbidden Fruit*, cadence fragments from various works from the classical period are repeated frantically and randomly in order to destroy the meaning of the cadence as a point of arrival in a work. John Oswald makes bold statements concerning the commercialization of music and the corporate tyranny of copyright by electronically modifying the works of pop artists such as Michael Jackson, Dolly Parton, and the rock group Metallica. The electroacoustic and video art works of Netochka Nezvanova involve the deconstruction of a very large number of sources through the use of electronic manipulation, often on a sub-perceptual level through the use of granular synthesis. In my work, the primary method of deconstruction is through the fragmentation of the work, on both a large scale (short sections or phrases taken from a larger work, manipulated or juxtaposed against each other) and on a small scale (electronically breaking sounds into tiny fragments, achieved through the use of granular synthesis techniques).

In "III. Prologue: In the Theatre," a short excerpt of Haydn's String Quartet in B♭ Major was sampled and deconstructed using two different methods. The first method, which can be found in the electronic sounds used in both the full version (pp. 15-16) and the solo version (pp. 4-5), is the use of granular synthesis to parody a compositional technique found in music from the classical period: fragmenting the basic idea of a theme as a means to extend it. This technique was transferred to the electroacoustic process of granular synthesis by breaking a recording of the main theme into very short pieces of sound, and then reassembling those sounds randomly displaced in time and at different transpositions. In order to maintain a certain level of recognizability in the resulting sound, the randomness of the temporal displacement was kept to a minimum. For example, a fragment taken from a point near the beginning of the original sample would not be displaced to a position near the end, but instead would have been moved to a position 100-200 milliseconds from its original location. The randomness of the transposition of each fragment was also kept within defined limits, in that fragments were transposed in terms of number of whole steps from the original pitch and the amount of transposition never exceeded a tritone above or below. The amount of transposition also gradually increases as the passage progresses, so that the effect of a gradual decay of the original sound is created. This also creates a kind of wedge formation, an idea which will be discussed further in the section concerning "IV. Prelude:*Facile Credo*." A graphical representation of the granulation process can be found in example 1a.

In the orchestrated version of the piece, the classical technique of fragmentation is exaggerated by injecting the influence of granular synthesis. On page 14 of the score the main theme is presented in its original form. Immediately thereafter, fragments of the theme appear in random sequence and at various transposition levels. The process used to determine the transposition of the individual fragments is similar to that used in the electronic version, in that fragments were transposed according to number of whole steps from the original, and that the amount of transposition increases as the passage progresses (see example 1b). Beginning at page 15, as the computer audio part fades in, both kinds of fragmentation (electronic and melodic) can be heard simultaneously, highlighting the dichotomy of fragmentation on a musical level and fragmentation on a sonic level. This is an important element of the piece, and we shall see it occur on various levels throughout. Another important consideration in this section of the piece involves text painting: the deconstruction through fragmentation of the Haydn passage accompanies the spoken text "...so what good is it if you construct a whole? The public takes it all apart again!"

Quotation and parody have become important tools in musical composition of the latter part of this century. This is not to say that the use of previously composed work is new; on the contrary, it has been used extensively in music and literature from the Renaissance period, as well as in the late 19th and early 20th centuries by composers such as Gustav Mahler and Charles Ives. But the extent to which it is used today, not only in contemporary art music but also in popular music, is worthy of note. The advent of digital sampling and recording technology has expanded the artistic possibilities of quotation, and the challenges to copyright laws in North America have also raised important questions in terms of the use of previously composed material as *objets trouvés*. I have experimented with these tools extensively in my work over the past several years, and have put a great deal of consideration into my artistic reasons for using quotation and the benefits and problems associated with it.

The use of quotation or allusion as parody is effective in creating dramatic effect in a work, as can be seen in "III. Prologue: In the Theatre" and "V. Incantations." In the former, allusions to carnival music combined with the manner and content of the spoken text create the impression of a circus. This is meant to reflect the perception of audiences in the 20th century, and their need for extravagant displays in entertainment in order to draw their interest. The rapid shifts between stylistic allusions and quotations (for example, the shifts, triggered by the singer, from jazz to computer music to the Haydn quote on pages 12-14) reflect the diminishing attention span of audiences accustomed to television entertainment. In the latter, the recontextualization of a fragment of Heinrich Biber's *"Mystery"* Sonata no.10 (pages 26 and 27 of the full score) is meant to create dramatic effect through irony, a technique used often in music for film. The original meaning of the passage quoted is as a celebration of the resurrection of Christ, and it was written to musically reflect an uplifting feeling. The removal from its original context and its placement within the dark subject matter of my piece is meant to enhance the feeling of instability, even insanity in the Faust character.[2]

As was mentioned in the introduction, quotation is used in *From Heaven, Through the World, to Hell* as a technique to combine multiple musical languages in a work. The concept of multiple languages is introduced early in the piece; within the first movement of the work the singer exclaims the text "... and the word was God!" first in English, then repeats it in French, German, Spanish, and Dutch before speaking it again in English. Each repetition receives different treatment, through the notated inflections in the voice part and from the shifts in the accompanying textures in the music. The texts used throughout the piece come from a variety of sources written in several different languages during various periods in time. This use of texts from multiple sources is meant to parallel the use of musical quotation and stylistic allusion in the piece, and this idea is used extensively in "VII. Walpurgis Night's Dream." This seemed the most appropriate place to do so, since in Goethe's version of the Faust myth this is the section in which he makes gratuitous references to other writers and shifts very rapidly from one idea to the next.

Several techniques of manipulating quotations and allusions were employed, including the juxtaposition, superimposition, morphing, and recontextualization of musical passages, in

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[2] This was done in much the same spirit as in the movie Schindler's List, in which one of the most violent and disturbing scenes is accompanied by a Mozart piano sonata. The juxtaposition of the horrific against the beautiful can be very effective in enhancing the horrific element by creating confusion and discomfort in the audience.

order to achieve certain artistic goals. Juxtaposition was realized in this movement by the use of rapid shifts between disparate musical passages, so as to enhance the sharp contrast between the opposing musical styles. An example of this can be found in the second to last measure on page 31, in which the *fortissimo* heavy rock/techno passage suddenly shifts to a *pianissimo* minimalist texture without any transition. Another form of juxtaposition used in the piece is the superimposition of two musical styles. An example can be seen in the opening section of the movement: once the pulsing sixteenth note techno pattern and heavy rock 'n' roll riffs have been firmly established by the drum machine, turntable and jazz ensemble (page 30), the piano quintet enters with a Webernesque pointillistic passage composed using twelve tone technique (page 31). The intended effect from both forms of juxtaposition is to create a sense of confusion for the audience; as soon as a pattern is established using one style of music, another style is added to the mix, or replaces the previous style, in order to disorient the listener.

Morphing is the process of gradually transforming or mutating one musical style or quotation until it becomes another. This is done either by introducing elements of the target material as the initial material is still sounding, or replacing elements of the original with new elements which will become part of the target material. Both of these techniques are used in "VII. Walpurgis Night's Dream" in order to morph a quotation from Stravinsky's *Rite of Spring* into a virtuosic allusion to James Brown-style funk music. The passage begins at the second measure of page 33, as the piano quintet plays the opening measures of "The Augurs of Spring." The rhythm section of the jazz quartet accompanies this with its own version of the Stravinsky passage, in a style reminiscent of Emerson Lake and Palmer's electric rock reorchestrations of other early 20th century works. The first signs of morphing begin at the second measure on page 34, as the drummer introduces the frequently used James Brown "jungle boogie" rhythm and the alto saxophone begins its virtuosic solo line, replete with blues chromaticisms and modal ambiguity. In the next measure, the guitar and bass abandon the Stravinsky reference and replace it with a new pattern complementary to the jungle boogie rhythm. By the end of the first system of this page, the original quotation has disappeared, and in its place is the allusion to funk music.

Recontextualization through sampling is also present in this passage. The familiar opening chord to Beethoven's *Eroica* Symphony No. 3 is played by the turntablist in rhythmic synchronization with the accented punctuations of the Stravinsky quote. This technique is commonly found in hip-hop and techno music; turntables are often used to repeatedly play fragments of familiar pieces as new music is performed overtop (a technique known as "sampling"). The use of the turntable in this particular passage creates a surprising connection between the Beethoven and Stravinsky quotes, which may be perceived as humouristic and eye-opening by an audience familiar with these two works.

The influence of Zorn's music cannot be denied here; I consciously attempted to imitate the effect which he created in *Forbidden Fruit* and *Torture Garden*. The structure of this movement also stems from the idea of deconstructing previously composed works through fragmentation. The concept of fragmentation is found here on both a large scale (short passages from other works and allusions to other styles in the full version) and on a tiny scale (fragmentation through the use of granular synthesis in the CD solo version. The significance of fragmentation using granular synthesis techniques will be discussed further in section III). The delineation of the separate passages in this movement was planned using the principle of the golden mean as a guide: the proportion of 1:1.618 determined the length of each passage and the positions of important changes in texture and dynamic in relation to the movement as a whole. It was intended that this premeditated structural design would give the movement better symmetry and add balance to the otherwise chaotic flow of musical ideas.

Several more traditional compositional techniques were employed in the creation of this work, as a way to ensure its connection with music from the past on a more conventional level. Many of these techniques can be seen most clearly in "IV. Prelude: *Facile Credo,*" which resides mainly in the modal area of E phrygian throughout, with some chromatic alterations for colour and effect. The form of the movement follows traditional standards, in that it begins and ends on the same chord (E minor) and reaches its furthest point of harmonic distance from the home key a little more than two-thirds of the way through (the cluster on page 19 of the full score). The progression from the simple texture in the beginning to the complex texture of the cluster is gradual, and takes place over the course of a pair of wedge formations (see example 2). This way of evolving gradually from a simple harmonic texture to a complex harmonic texture has been used by composers in the past, for example by Arnold Schoenberg in "Nacht" from *Pierrot Lunaire*. The instrumentation of this movement also reflects my desire to create a connection with music from the past, in that the combination of the baroque trio with the modern ensemble highlights the relationship between the ancient and the modern in this piece.

It is no coincidence that these wedge formations focus around the pitch E. The tonal area of E, fluctuating between major, minor and modal, is made predominant in this piece through the use of several techniques. The primary manner in which this is achieved is reinforcement through repetition. Virtually every movement contains E as its primary departure and arrival point, and E is also used often as a pedal point for extended periods. Cadences, both traditional and otherwise, are sometimes used to either create or misrepresent E as an arrival point. For example, in "VII. Walpurgis Night's Dream," distorted fragments of traditional cadential figures appear in the piano quintet and the baroque ensemble. These short cadence fragments are used to distort the meaning of the cadence by not providing the expected closure during periods of heightened tension, as well as to create a heightened sense of confusion and discomfort during this section. A nontraditional method of creating cadential resolution to E can be seen in "VIII. Postlude: *Juvat, Interea, non Diffiteor.*" The ensemble pivots back and forth between pedal tones on E and F, with the larger amount of time spent on E. This gives the impression of the F sonority having the "dominant" function and the E sonority having the "tonic" function.

III. Live electronics and the creation of the electroacoustic part of the piece

Virtually all of the electroacoustic elements of the piece, including all the live signal processing and most of the sounds assembled beforehand in the studio, involve the use of software written within the Max/MSP programming environment. Max is an object-oriented programming environment developed at IRCAM in the late 1980's by Miller Puckette and David Zicarelli, and MSP is a set of digital signal processing (DSP) plug-ins for Max developed over the past two years by Zicarelli.[3] The seamless interaction between MIDI (Musical Instrument Digital Interface) data input and control over DSP parameters possible using this programming environment allowed for an intricate performance system to be designed for use in this piece. The performer's gestures are translated into MIDI data using an infrared sensor (the device used in the first performance was a Dimension Beam), and this data is analyzed and interpreted in different ways by the computer to either generate and shape the electronic sounds or modulate the parameters of the processing done to the singer's voice. The use of an infrared sensor as an input device created the illusion of the computer as a transparent accompanist, in that the performer was able to control the computer through her gestures without the need for direct physical contact with the computer hardware. Practical benefits for performance are that this setup makes it easier for the performer to learn the piece by requiring her to interact with only a single simple device, and it also makes for a clean, uncluttered stage during the performance[4].

The procedures used in the live interactive aspect of this piece can be divided into two types: generational (the singer's actions or voice trigger sounds generated by the computer) and transformational (the singer's voice is modified by the computer). Much of the generational procedures are implemented through the use of the infrared sensor as a triggering device. The computer waits for a change in the MIDI stream from zero to non-zero, indicating that the performer's hand has entered into the infrared sensor's range. When this happens, a specific process is activated, and further zero to non-zero transitions are ignored to prevent repeated triggering. In the first three movements of the piece, this use of the infrared sensor as a triggering device is meant to create a theatrical and dramatic effect by having the physical actions of the performer generate the electroacoustic sounds of the piece. Most notably, in "III. Prologue: In the Theatre," the performer is asked to snap her fingers as she enters the infrared sensor's range in order to create the impression that she has absolute control over her environment. The material played by the computer also relates to the texts being spoken; for example, upon speaking the text "I see you sit there with wide open eyes, relaxed and hoping for a big surprise!" the singer triggers Hollywood film-style explosion effects, and on the text "So how shall I go about it, so it will seem new?" the singer triggers a passage of randomly generated FM synthesis tones which parody the use of computer-generated melodies in science fiction movies.

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[3] Further information about Max/MSP can be found at David Zicarelli's website: http://www.cycling74.com

[4] As well, the singer is required to use a very small wireless microphone, concealed within her clothing or hair, for the live performance of this piece. This not only frees her hands for making interactive gestures, but it also reduces the presence of electronic equipment onstage.

Placing control in the singer's hands over the flow of the music and over the sonorities in the electroacoustic part was an important consideration when implementing the infrared sensor in this piece. Allowing the performer to control the rate at which events in the computer part occur gives her the liberty to stretch or compress the delivery of the texts freely and to add to the drama of the piece through her actions. It also allows her to use the computer at times as a musical instrument, for example in "I. Overture," where the movement of her hand controls the volume, panning, and intensity of a stream of granular sounds being generated by the computer. As her hand approaches the middle of the sensor area, the stream of sounds becomes louder, is shifted across the stereo field, and is transposed to different degrees. All of these modulations to the sound produce a texture which is at times very similar to flowing water, even though the source material consists of fragments of samples of orchestral instruments. This, for me, is the magic of granular synthesis: the power to generate organic-sounding timbres using virtually any sound sample as source material.

Another way in which the performer controls the timbres in the piece can be found in "VI. Mephistopheles." The same stream of granular sounds used earlier in the piece is modified in much the same way, except that this time it is the dynamics of the singer's voice which modulate the parameters. The technique is known as envelope following, and it involves having the computer measure the volume of the singer's voice and map the changes of dynamic to a scale of 0-127, the range of numbers used in MIDI. These numbers are fed into the same section of the program used in "I. Overture," yet the effect produced is slightly different because the control data comes from a different source (the envelope follower rather than the infrared sensor). Envelope following was also used to generate a different kind of sound in "VII. Postlude: *Juvat, Interea, non Diffiteor.*" The control data produced by the envelope follower is sent to a noise generator, and the width of the noise produced becomes narrower as the singer's voice becomes louder. This produces a sonority in which a wash of noise becomes pitched as the dynamics grow louder, and fades back into noise as the dynamics grow softer. The technique of envelope following was implemented using the 'envfoll~' object from the *MSP Jimmies* library, developed at IRCAM by Zack Settel.

In "IV. Prelude: *Facile Credo,*" the pitch-tracking object 'pt~' (originally developed by Miller Puckette for IRCAM's ISPW workstation and available in MSP through the *FTS/ISPW Compatibility Library*) was used to create an intelligent harmonizer which listens to the singer's voice and transposes it to different degrees depending on which pitches are being sung.[5] The harmonizer is set up to transpose the singer's voice by specific intervals depending upon how far the melody deviates from the central pitch E. While the singer sings E no transposition takes place, though when she sings F her voice is transposed down a minor second so that the interval of a minor second (between her sung F and the computer's transposition down to E) sounds, and when she sings G her voice is transposed down a major second so that the interval of a major second (between her sung G and the computer's transposition down to F) sounds.[6] Musically, these intervals of transposition relate to the previously discussed "wedge" formations found in this movement, in that as the movement progresses the vertical distance between pitches grows from a unison, to a minor second, then to a major second, and eventually to the maximum vertical distance of a major sixth at the moment of greatest harmonic density. Another benefit of this intelligent harmonizer design is that it maintains the modality of E phrygian by following the melody using oblique motion, rather than simply by using a parallel intervallic relationship.

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[5] This then becomes a combination of generational and transformational procedures, in that while the singer's voice is generating information in the computer (transposition intervals) her voice is being transformed (transposed) at the same time.

Artistically, the harmonization in the computer part of "IV. Prelude: *Facile Credo*" is used to represent the rising duality of the Faust character as he slowly becomes transformed into Mephistopheles. The singer is essentially singing a duet with herself throughout the movement, in that her own voice is echoed through the computer at different pitches. Primarily, the interval of transposition in the movement is the dissonance of a second (alternating between major or minor). This dissonance, as well as the disembodied voice emanating from the computer, is used to reflect the schizophrenia of Faust's character as he grapples with his contemplation of the existence of the spiritual world.[7]

An element of text painting is also added through the use of the intelligent harmonizer and in the harmonic structure in this movement. The text is made up of questions Faust asks himself about the people who might inhabit the spiritual world, and it concludes with the statement that while humanity has always desired the answers to these questions, it has never attained that knowledge. The use of dissonant intervals in this movement and the lack of a cadence to E at the end reflect the frustration and lack of closure felt by Faust as he ponders these questions.

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[6] This is the system of transposition used during the first third of the movement. The intervals used vary slightly as the movement progresses, but the idea remains basically the same throughout.

[7] More about the concept of the disembodied voice will be found in the discussion of transformational procedures used in the construction of the CD and computer audio parts.

In the solo version of the piece a sort of reverse-generational procedure is employed in this movement, in the sense that since the flow of the electroacoustic part is no longer under the performer's control (the CD player is activated at the beginning of the movement) a set of cues are needed to help her stay in synchronization with the music. In a sense the computer is now triggering the singer, with specific sounds notated in the score, to begin and end her musical phrases. This reversal of roles between the computer and the performer carries the implication that they have become equal partners in the performance of the music, that neither one has absolute power over the other. This is meant to contrast the complete control over her environment which the singer had during the first three movements of the piece, as a reflection of the loss of control Faust feels as he questions the existence and meaning of the spiritual world. Partial control is regained in "V. Incantations," when the singer is given the power to trigger explosions which follow the dramatic Latin text spoken to summon Mephistopheles. Absolute control is not regained again until "VIII. Postlude: *Juvat, Interea, non Diffiteor*," when both the singer's physical movements and her voice control every aspect of the sounds in the electroacoustic part.

The transformational procedures used in *From Heaven, Through the World, to Hell* can be further subdivided into those which are performed in real-time during the performance and those which were used in the studio to create the CD and computer audio parts. The primary technique used in both cases is granular synthesis; the transformation of the singer's voice during the performance as well as the creation of the granular textures in the CD and computer audio were done using my own Real-Time Granular Synthesizer software. There were several reasons for choosing granular synthesis as the main mode of audio processing in this piece. The technique is used to allude to the mystical science of alchemy, in that sonic materials are transformed from one form (for example, the original instrumental sounds which were used as source material for the computer part in "I. Overture") to another form (the resulting electronic sounds in the computer audio part). The strength of that allusion lies in the fact that the transformation takes place on a granular level–the smallest perceivable particles of the sound are rearranged to produce the new sound. This parallels the alchemist's belief that the basic elements could be rearranged to achieve transmutation of matter from one form to another.

Longer sound grains (between 50 to 200 ms. long) were effectively and extensively used to create the effect of fragmentation of musical excerpts. The idea of deconstruction through fragmentation was mentioned earlier in my discussion of "III. Prologue: In the Theatre," in which an excerpt from Haydn's String Quartet in B♭ Major is deconstructed through both musical and electronic means. The granulation of the excerpt was achieved by taking a four-second audio sample from a recording and then, using the RTGS software, playing random fragments of that excerpt back at various moments in time. The overall randomness of the playback was kept to a minimum so that the original excerpt could still be recognized, although the granulation effect certainly altered the characteristics of the original sound source. A graphical example of how this process works can be found in the appendix (see example 1a).

Other movements in which similar processes were implemented in both the electroacoustic and orchestrated version are "IV. Prelude: *Facile Credo*" and "V. Incantations." The RTGS software was used once again, this time to create the wedge formations found in the computer audio part of "IV. Prelude: *Facile Credo*." Samples of violin harmonics were used as source material for granular synthesis. The software was set to repeatedly play grains from a sampled E harmonic. At first, the transposition range was set to zero, so that all resulting grains would sound as E. As time progressed, the transposition range was gradually increased. In the first instance, the range was increased outwards from zero so as to create a wedge shape which expanded in both directions (example 2b). In the second instance, the range was only increased to positive values, creating a wedge shape which expanded upwards from E (example 2c). Individual grains can be clearly seen as short horizontal lines in the sonogram analyses in examples 2b and 2c.

In the solo version of "V. Incantations," envelope following is used as an effect to enhance sections of both the spoken and sung passages. In the full version of the piece, this effect is imitated by the alto saxophone (pages 21 and 22 of the full score). Using a non-realtime envelope follower and pitch tracker, an analysis was performed on a recording of the spoken passage and the pitch and rhythmic contours of the performer's voice were extracted and notated. The results needed to be modified somewhat in order to be performable by the saxophone (the rhythmic contour, for example, needed to be simplified dramatically, and microtonal pitch variations needed to be quantized). Some of the imperfections of the envelope follower are even included, in the form of grace notes, trills and repeated notes.

The basic design of the granular processor used in my software came from a Max patch written by Richard Dudas which was presented at the CNMAT (UC Berkeley) Max/MSP night school in July of 1998.[8] The original patch allowed for fragments (grains) of sound as short as 2 ms. to be played back at a maximum density of 200 grains per second. Modifications to the patch made in my own implementation allow for shorter intervals between grains (down to 2 ms., yielding a maximum density of 500 grains per second) and a wider transposition range for each fragment (two octaves above or below the original pitch). A double-buffer system was also implemented, which enabled the convolution of sounds on a granular level. By loading samples of two different kinds of sounds into each buffer, and having the granular engine set up to alternate reading audio data from the two buffers at a very high speed, entirely new sounds could be created which share the characteristics of each source sample. Direct modulation of the parameters of grain length, density, and transposition through MIDI allowed the creation of dynamic, rapidly shifting textures in real-time. See the Max patch in the appendix for an illustration of the use of double buffering with the granular engine (example 3).

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[8] Modified versions of his patches are used as the basic granular engine in my RTGS software, and are included with Dudas' permission.

The double-buffering system worked best for creating the sounds used in the CD and computer audio parts, though a specially optimized version of the RTGS software was developed specifically for use in the live performance of *From Heaven, Through the World, to Hell*. A system of playing back fragments of the singer's voice immediately after input was needed, and the buffering system originally developed required a latency of several seconds while the buffers are filled for processing. The present system follows the position in the buffer at which audio is being recorded, and plays grains from a position immediately before that point. A short latency is still required to avoid reading too far ahead in the buffer, and through experimentation it was found that a latency of 100 ms. was adequate to ensure that grains at any transposition could be played without producing clicks as the playback engine passed over the point of recording. An example outlining the implementation in Max can be found in the appendix (see example 4).

The original implementation of the granular synthesizer using the double-buffering system was very effective in creating a wealth of sounds in the studio for use in the CD and computer audio parts in the piece. One type of processing used was granular time stretching, an effect in which an audio sample is stretched out to a duration much longer than the original.[9] In "IV. Prelude: *Facile Credo,*" a four second sample of a group of monks singing "amen" was stretched out to nearly a minute long, and then transposed to the pitches E, F, and G to match the E phrygian modality of the movement. The resulting sound contains all the spectral elements of the original sample, yet the texture is sufficiently different that the original sample source is virtually unrecognizable. Because longer fragments of the sound (between 100 - 200 ms.) are repeated over and over again and layered on top of each other to produce the stretching effect, the final sound evolves very slowly over time, making it an appropriate texture for use as a droning, pad-type sound.

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[9] This process is also frequently done using a phase vocoder, although the sonority produced by using granular synthesis is distinctly different and, in my opinion, much more interesting.

Similar processing was performed in the studio on the singer's own voice, the results of which were used extensively in the CD and computer audio part. Samples were made of the performer[10] singing sections from "II. Dedication," and after granular processing they were included in the accompaniment as cue points for performance (see page 2 of the score for the solo version of the piece for an example). The ability to change the parameters of granulation and hear the results in real-time enabled complex processes which vary over time to be performed on the voice samples. One parameter modulation which created particularly interesting results involved reducing the grain length while increasing the randomness of transposition at the same time. The result can be heard in the vocal cues found in this movement, as well as in much of the CD part for "IV. Prelude: *Facile Credo.*"

IV. Conclusion

Works of art, literature, and music all act as historical signposts for the culture within which they were created. This is why I have felt it so important to make extensive use of technology in my compositions, in order that they accurately reflect and make commentary on the fascination with technology which is so characteristic of the times in which we live. I believe that it is also of fundamental importance that artists and musicians work towards integrating technology into their craft, and develop the tools to make the implementation seamless. Recent developments in computer and communications technology has given an unprecedented amount of power to corporations and governments, as well as to individuals, to reach both beneficial and destructive ends. As artists it is important to show the world that these tools can be used to create meaningful beauty and provoke emotions, simply as art for art's sake, and not solely as a means for advancing the corporate takeover of culture in the new millennium.

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[10] My gratitude goes to Juliana Pivato, who spent much time working with me on this in the recording studio.

The idea of art as an historical signpost has also prompted me to make use of recontextualization, fragmentation, and deconstruction of previously composed works as important techniques for the creation of new music. The collage texture has become an important part of the human experience in western society in the twentieth century. The bombardment of sounds and images, mainly from the corporate world in the form of advertisements and sound bites in all forms of media, has created a continuous wash of background noise. This wash of sound and image can be seen as an ever-growing collage built from appropriated pieces of western culture. It would be difficult to believe that any member of an audience could have kept themselves isolated from this bombardment of media fragments, so to recreate for them on the concert stage an aesthetic environment which reflects that reality is the most effective manner of communication, as well as the most potent manner of commenting upon that reality. In the words of the deconstructivist techno group Negativland, "the act of appropriating from this media assault represents a kind of liberation from our status as helpless sponges which is so desired by the advertisers who pay for it all. It is a much needed form of defense against the one-way, corporate-consolidated media barrage..."[11]

From Heaven, Through the World, to Hell takes its place in the body of my compositions as a major step in the evolution of my artistic and compositional ideas. It represents my interest in integrating technology into the performance of new music, not only as a way to give control over the flow of interactive electroacoustic music to the performer, but also to reflect the prevalence of technology in modern society and North American culture. There is still much work to be done in this area before it can be said that the incorporation of live electronics in modern music is completely seamless, though one must remember that electroacoustics are a relatively new field in musical exploration and that we are still only within the dawn of its development. This is really a large part of what draws me towards the use of computers and live interaction in composition; the excitement of working within such a new field of music inspires my creativity and pushes me towards experimentation with radical new ideas.

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[11] From the article "Essay on Fair Use," posted on the Negativland web site, http://www.negativland.com.

This piece also represents my interests in composing theatrical music, a direction I've chosen in order to create music which I feel has the power to affect an audience more deeply and communicate emotions to the listener more effectively. I have received a great deal of positive feedback from individuals who were at the premiere performance of the solo version of this piece, and a great deal of encouragement to continue developing my current compositional aesthetic. Musical ideas can be expressed eloquently with pitches, rhythms and harmonic textures, but I feel that the expression of profound thoughts, philosophies, and criticisms require the use of more tools than have traditionally been available to composers. With this piece I have embarked in a direction which will perhaps take me farther away from the traditions of the concert stage, and draw me closer to the worlds of performance art, incidental music and pure music theatre.

V. Appendix

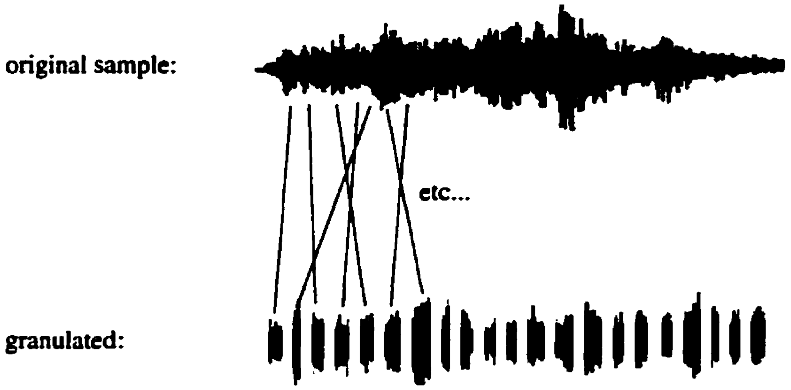
i. score excerpts, examples and diagrams

ii. texts used in the work and sources

iii. bibliography and references

Example 1: Fragmentation of an audio sample using granular synthesis, compared to the fragmentation of a musical theme found in the full orchestrated version of the score.

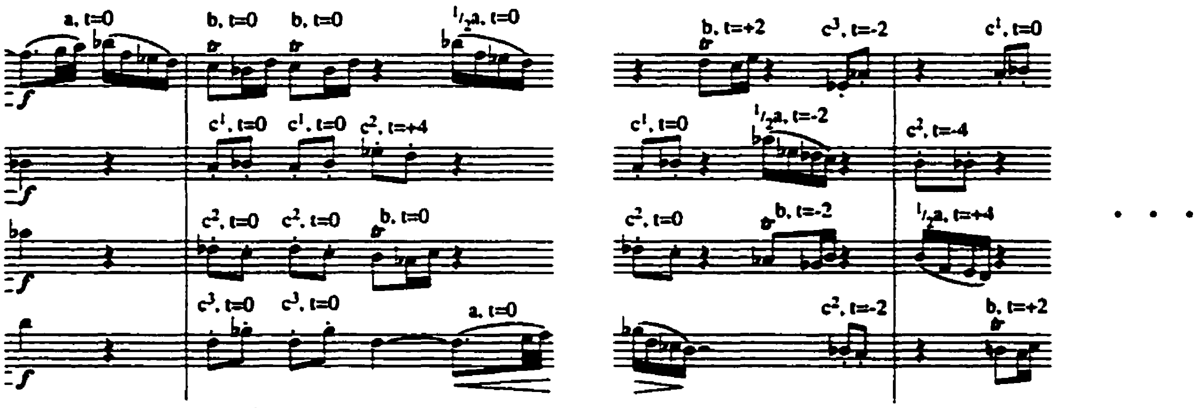
Example 1a: temporal displacement of audio fragments using granular synthesis



original sample:
etc...
granulated:

Fragments of the original sample are played back randomly displaced in time, though the overall direction is maintained so that the original sample can still be recognized. The length of each fragment varies between 50 to 200 milliseconds, and the pitch of each fragment is altered through modulation of the playback speed.

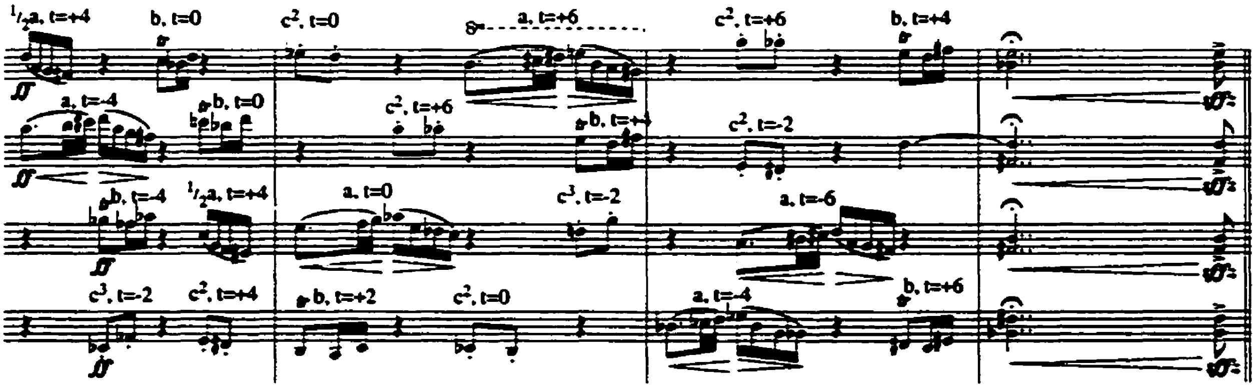
Example 1b: temporal displacement and transposition of musical fragments from the main theme as found in pages 14 to 16 of the full score (transposition values "t" are normalized to within an octave, and letters a, b and c denote theme fragments). Note the increased range of transposition values used at the end of the passage (page 16), compared with the beginning of the passage (pages 14-15).



a, t=0
b, t=0
b, t=0
½a, t=0
c¹, t=0
c¹, t=0
c², t=+4
c², t=0
c², t=0
b, t=0
c³, t=0
c³, t=0
a, t=0
b, t=+2
c³, t=-2
c¹, t=0
c¹, t=0
½a, t=-2
c², t=-4
c², t=0
b, t=-2
½a, t=+4
c², t=-2
b, t=+2
• • •

page 14, end of system

page 15, first measures of top system

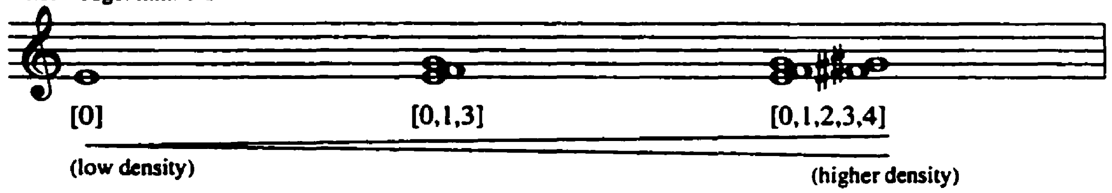


½a, t=+4
b, t=0
c², t=0
8 a, t=+6
c², t=+6
b, t=+4
a, t=-4
b, t=0
c², t=+6
b, t=+4
c², t=-2
b, t=-4
½a, t=+4
a, t=0
c³, t=-2
a, t=-6
c³, t=-2
c², t=+4
b, t=+2
c², t=0
a, t=-4
b, t=+6

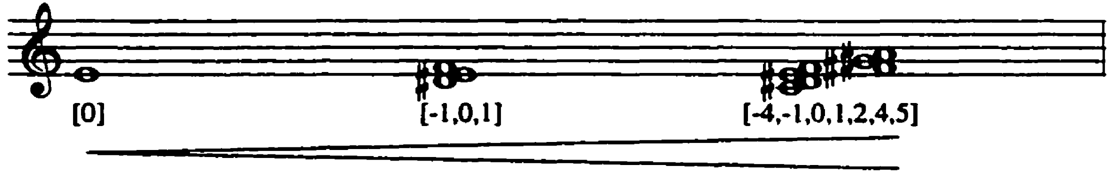
page 16

Example 2a. Wedge formations used in the full version of "IV. Prelude: *Facile Credo.*" Notice how the first wedge formation (mm. 1-6) builds upwards from the pitch E, while the second (mm. 7-10) expands outwards in both directions. Integers in square brackets show the intervallic distance in half steps from the central pitch E [0].

first wedge: mm. 1-6

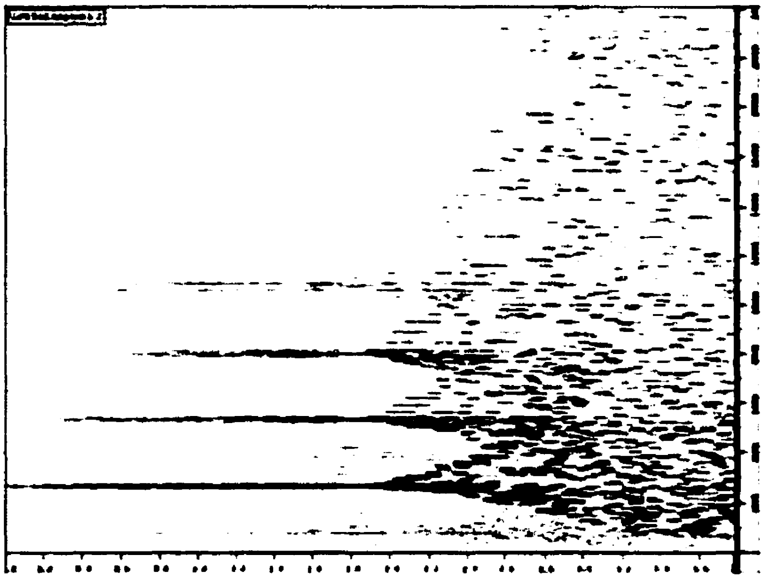


second wedge: mm. 7-10

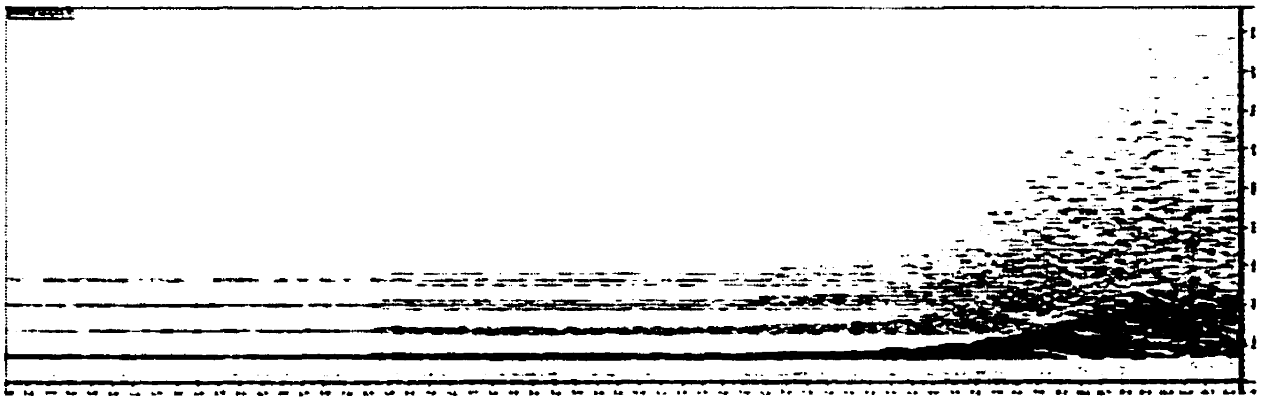


Examples 2b and 2c. Sonogram analyses of passages in the computer audio part of "IV. Prelude: *Facile Credo.*" The X axis shows time in seconds, and the Y axis shows frequency in Hz. Individual grains can be seen in the graph as short horizontal lines.

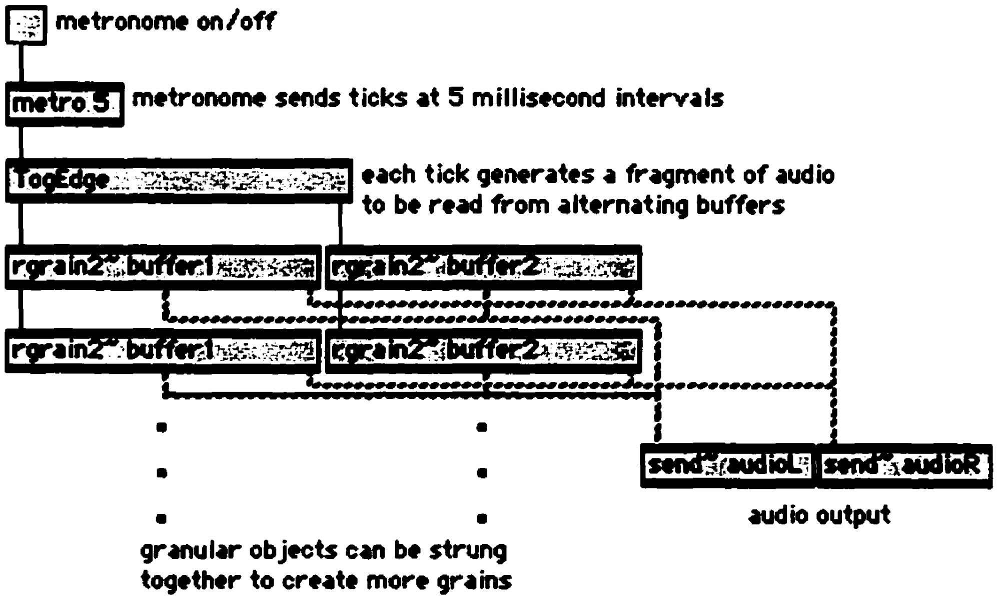
Ex. 2b: from page 7, beginning of top system, accompanying the text "et gradus, et cognationes." Note how the wedge formation is created through outward expansion from the starting pitch E (2637 Hz):



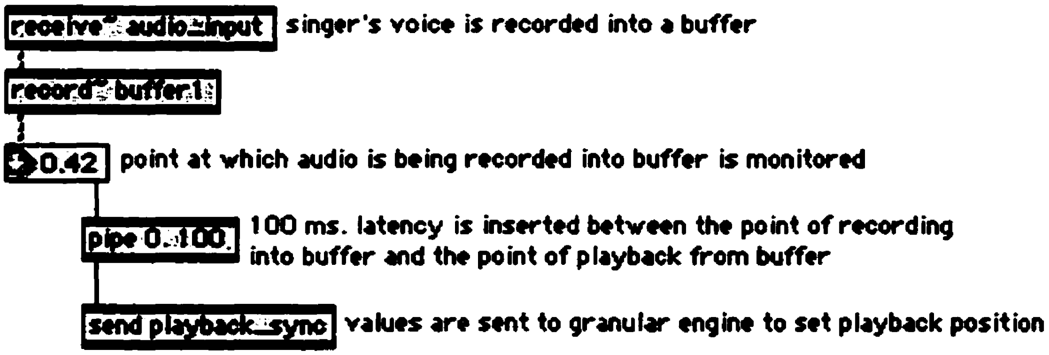
Ex. 2c: from page 7, end of top system, accompanying the text "et discrimina, et singulorum munera?". Note that in this case the wedge formation builds upwards slowly from the starting pitch E (660 Hz):



Example 3. Implementation in Max/MSP of the double-buffer system used for granular convolution of sounds.


metronome on/off
metro 5
metronome sends ticks at 5 millisecond intervals
TogEdge
each tick generates a fragment of audio
to be read from alternating buffers
rgrain2~ buffer1
rgrain2~ buffer2
rgrain2~ buffer1
rgrain2~ buffer2
send~ audioL
send~ audioR
audio output
granular objects can be strung
together to create more grains

Example 4. Implementation in Max/MSP of the synchronization between audio input and the granular engine, as used in the live performance version of the RTGS software.


receive~ audio_input
singer's voice is recorded into a buffer
record~ buffer1
0.42
point at which audio is being recorded into buffer is monitored
pipe 0 100
100 ms. latency is inserted between the point of recording
into buffer and the point of playback from buffer
send playback_sync
values are sent to granular engine to set playback position

Texts used in *From Heaven, Through the World, to Hell*[1]

I. Overture

In the beginning was the word, and the word was God!
Le mot était Dieu!
Das Wort was Gott!
La parola era dio!
Het woord was God!

II. Dedication[2]

Sie hören nicht die folgenden Gesänge,
Die Seelen, denen ich die ersten sang;
Zerstoben ist das freundliche Gedränge,
Verklungen, ach! der erste Widerklang.

They will not hear me as I sing these songs,
The parted souls to whom I sang the first;
Gone is that first response, in vain one longs
For friendly crowds that have long been dispersed.

III. Prologue: In the Theatre[3]

To please crowds is what I desire most,
for they not only live but let live too!
I see you sit there with wide open eyes,
relaxed and hoping for a big surprise.
So how shall I go about it, so it will seem new?
Relevant, and pleasing to you too?
The mass is overwhelmed only by masses,
So what good is it if you construct a whole?
The public takes it all apart again!

IV. Prelude: *Facile Credo*[4]

Facile credo,
plures esse Naturas invisibiles quam visibiles in rerum universitate.
Sed horum omnium familiam quis nobis anarrabit?
et gradus et cognationes et discrimina et singulorum munera?

---

[1] Texts used in the score are in the public domain.

[2] Excerpt from Goethe's *Faust*, "Dedication". Translation by Walter Kaufmann.

[3] ibid., "Prelude in the Theatre"

[4] Excerpt from Thomas Burnet, *Archaeologiae philosophicae* (1692), page 68. Translation by M. H. Abrams

Quid agunt?
quae loca habitant?
Harum rerum notitiam semper ambivit ingenium humanum,
nunquam attigit.

I can easily believe,
that there are more invisible than visible beings in the universe.
But who will declare to us the family of these?
and acquaint us with the agreements, differences, and peculiar talents
which are to be found among them?
What do they do?
What places do they inhabit?
It is true, human wit has always desired a knowledge of these things,
though it has never attained it.

V. Incantation[5]

Rien! - En vain j'interroge, en mon ardente veille,
la nature et le Créature.
Geen enkele stem fluistert mijn oor een troostwoord in!
In the beginning was the word, the notion seems so absurd!
There is no law beyond "Do what thou wilt",
Love is the law, love under will!
And the ending of the words is Abrahadabra! Aum! Ha!
Within this circle is Jehovah's name,
Forward and backward anagrammatized,
The breviated names of holy saints,
Figures of every adjunct to the heavens,
And characters of signs of erring stars,
By which the spirits are enforced to rise!
Per Iehovam, Gehennam,
et consecratam aquam quam nunc spargo,
signumque crucis quod nunc facio,
et per vota nostra,
ipse nunc surgat nobis dicatus Mephistopheles!

In vain I question, in my fervent study, nature and Creation.
Not a single voice whispers a word of comfort in my ear!
[...]
By Jehova, Gehenna,
and the holy water which I now sprinkle,
and the sign of the cross which I now make,
and by our vows,
may Mephistopheles himself now rise to serve us!

---

[5] Contains short excerpts from the opera *Faust* by Charles Gounod, *Liber AL vel Legis sub figura CCXX* by Aleister Crowley, and *The Tragical History of the Life and Death of Doctor Faustus* by Christopher Marlowe.

VI. Mephistopheles[6]

I am the Magician and the Exorcist.
I am the axle of the wheel, and the cube in the circle.
"Come unto Me" is a foolish word, for it is I that go.
Hadit!
Blue am I and gold in the light of my bride:
but the red gleam is in my eyes, and my spangles are purple and green.
Purple beyond purple: it is the light higher than eyesight.
Ra Hoor Khuit!
I am the Lord of the Double Wand of Power; but my left hand is empty,
for I have crushed a Universe, and nought remains!
Ankh-f-n-khonsu!

VII. Walpurgis Night's Dream

[voice tacet]

VIII. Postlude: *Juvat, Interea, non Diffiteor*[7]

Juvat, interea, non diffiteor,
quandoque in animo, tanquam in tabulâ,
majoris et melioris mundi imaginem contemplari.
Ne mens assue facta hodiernae vitae minutiis se contrehat nimis,
et tota subsidat in pusillas cogitationes.
Amen.

Meanwhile, I do not deny that it is helpful sometimes
to contemplate in the mind, as on a tablet,
the image of a greater and better world,
Lest the intellect, habituated to the petty things of daily life,
narrow itself and sink wholly into trivial thoughts.

---

[6] Excerpts from *Liber AL vel Legis sub figura CCXX* by Aleister Crowley.

[7] Excerpt from Thomas Burnet, *Archaeologiae philosophicae*

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Negativland. *Essay on Fair Use*
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From Heaven, Through the World, to Hell

for actress-singer, CD and computer

Marcel Wierckx (1999, 2000)

I. Overture
II. Dedication
III. Prologue: In the Theatre

IV. Prelude: *Facile Credo*
V. Incantations
VI. Mephistopheles
VII. Walpurgis Night's Dream

VIII. Postlude: *Juvat, Interea, non Diffiteor*

This piece came to its fruition with support from the Manitoba Arts Council

From Heaven, Through the World, to Hell (1999, 2000)

Marcel Wierckx (b.1970)

The title of this piece comes from Goethe's Faust, in fact it was his own working title during the early stages of its creation. While my version of the myth does borrow somewhat from Goethe's version, there are also references to Christopher Marlowe's play Dr. Faustus (written ca. 1592), as well as quotations from the scientific and spiritual writings of Aleister Crowley and Thomas Burnet. This piece explores the Faust legend within a kind of technological musical theatre framework, and makes extensive use of live computer interaction using the Max/MSP environment. The performer interacts with the computer using an infrared sensor, allowing her to trigger as well as shape many of the sounds in the piece through physical gestures. This piece was written for g.e.m.s. as part of the McGill University composer-in-residence program between 1998-1999.

From Heaven, Through the World, to Hell

Technical requirements

Equipment:

-Macintosh G3/233 (minimum), set up next to house mixer

-CD player

-Dimension Beam sensor, mounted on a mic stand onstage*

-standard MIDI interface, with MIDI cable long enough to run from Dimension Beam onstage to Macintosh

-small, clip-on wireless microphone, preferably hidden in the singer's hair just above her forehead. (a hand-held microphone should never be used, as it would hinder the singer's movements and affect the theatrical impact of the piece).

-auxiliary output of voice channel from mixer to Macintosh audio input

-stereo out from Macintosh to house mixer

-onstage monitor

-2 music stands with lights

Lighting:

-3 narrow spotlights focused on the singer from directly above: white (50% intensity), blue and red

-specific lighting changes for piece as indicated in score

Rehearsal:

-approximately 1 to 1-1/2 hours dress rehearsal on the day of the performance

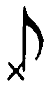
* *an alternate MIDI input device (video, I-Cube etc.) can be substituted for the Dimension Beam, provided it is set up to transmit controller 1 (mod wheel) data on any MIDI channel to the Macintosh.*

From Heaven, Through the World, to Hell

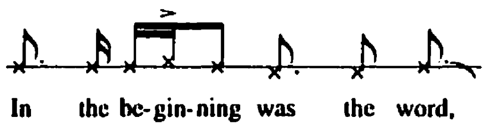
Performance Notes

From Heaven, Through the World, to Hell is more challenging in a psychological sense than in a technical sense, as it requires much more from the "actress" part of the performer than from the "singer" part. The performer must recognize the different kinds of characters needed for each movement, and be able to switch between these characters very rapidly (a useful analogy is of switching quickly between several television stations with a remote control). In order to accomplish this, the performer needs to build for herself a well defined character for each section of the piece, based on individual study of each movement. It is only with careful attention and dedication that the singer can deliver a truly effective theatrical performance.

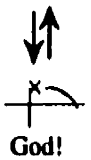
Special Notation



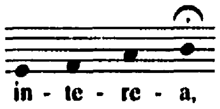
- Notes with "x" heads are spoken in a normal speaking voice (special instructions for specific inflections are given in the score). The single staff line is to be considered as the median pitch of the singer's normal speaking voice, so that notes above the line indicate a higher pitch and notes below the line indicate a lower pitch. Thus:



begins at a normal spoken level. Emphasis is given to "*-gin-*" by raising the pitch slightly, and the words "*was the*" are spoken at a slightly lower pitch. The downward curved line at the end indicates a drop in pitch as the word is being spoken.

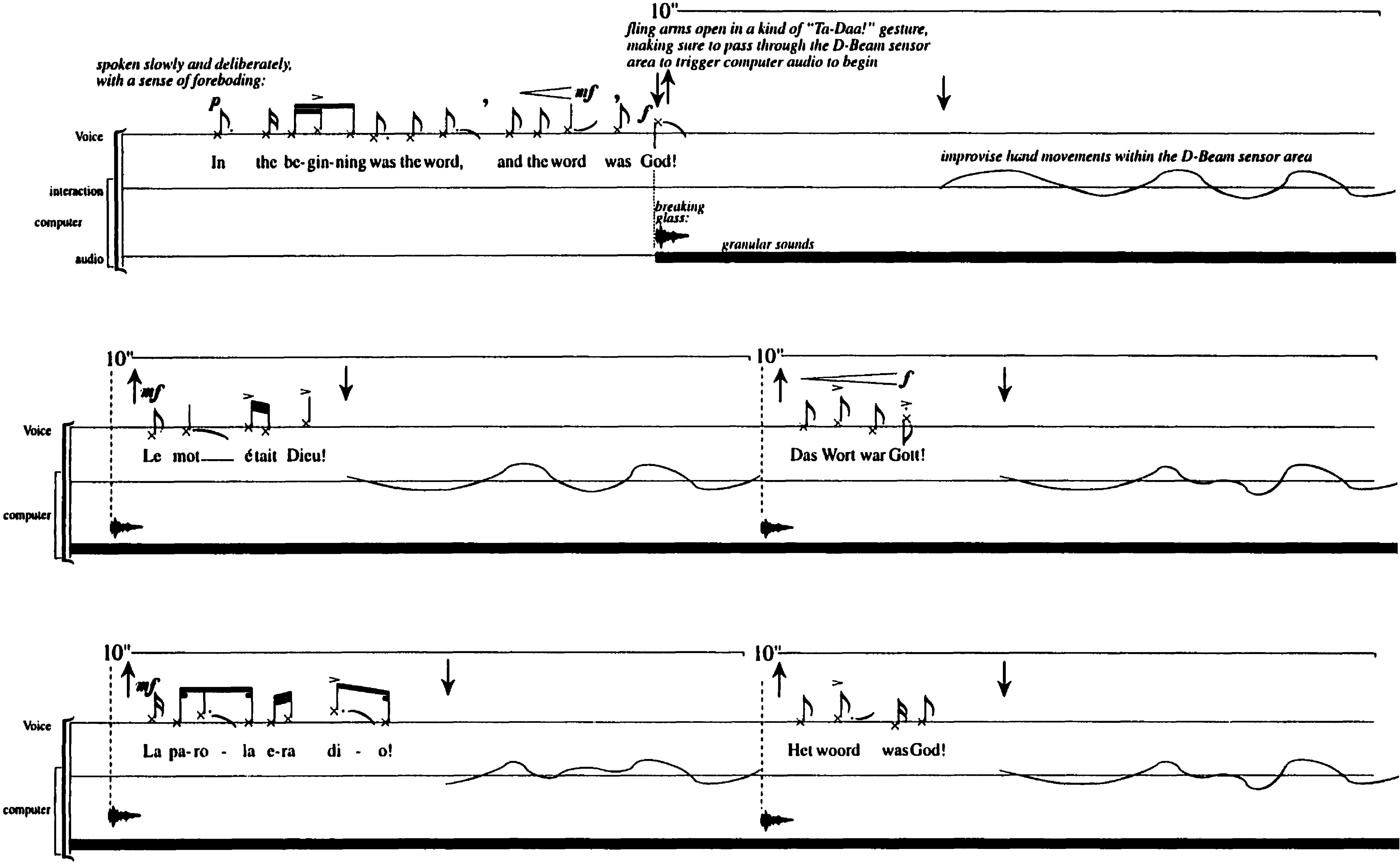


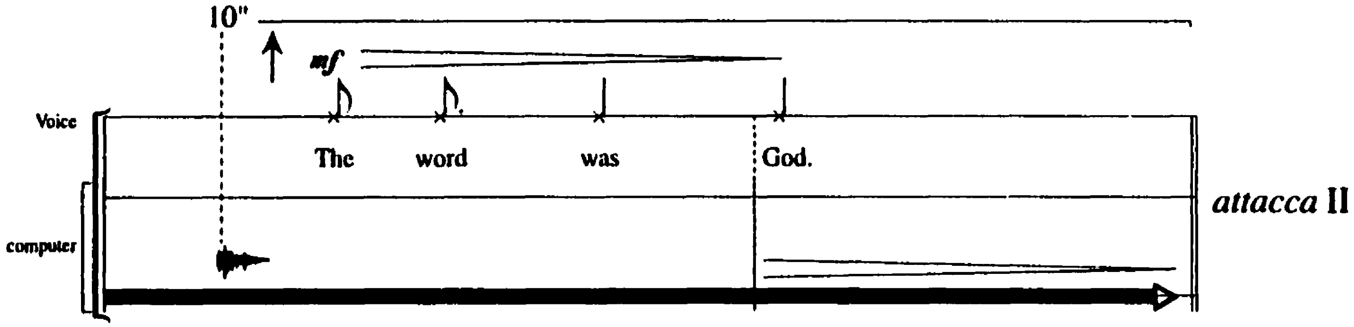
- A down arrow indicates when the singer's hand should be placed inside the D-Beam sensor area; an up arrow indicates when it should be removed. Arrows may be accompanied by notes describing the specific action required.



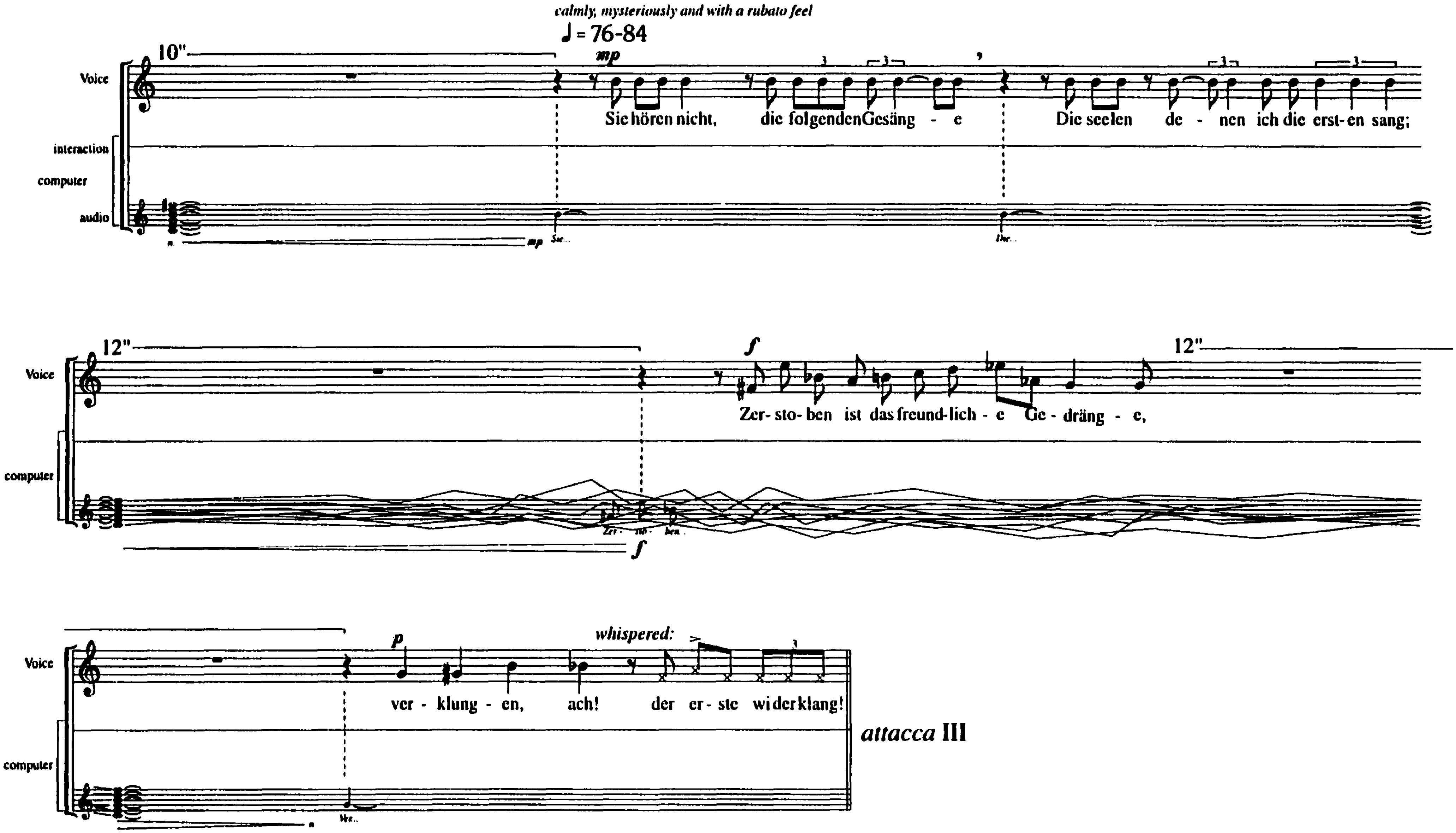
- Noteheads without stems are to be sung in a kind of Gregorian Chant style. In VIII. Postlude, the singer's voice is tracked by the computer which produces an accompanying whistling sound. The singer is urged to experiment with this effect during rehearsal in order to find interesting tempo and dynamic variations upon which the computer can react.

I. Overture


10"
spoken slowly and deliberately, with a sense of foreboding:
fling arms open in a kind of "Ta-Daa!" gesture, making sure to pass through the D-Beam sensor area to trigger computer audio to begin
p
mf
f
Voice
interaction
computer
audio
In the be-gin-ning was the word, and the word was God!
improvise hand movements within the D-Beam sensor area
breaking glass:
granular sounds
10"
mf
Voice
computer
Le mot—— était Dieu!
10"
f
Das Wort war Gott!
10"
mf
Voice
computer
La pa-ro - la e-ra di - o!
10"
Het woord was God!

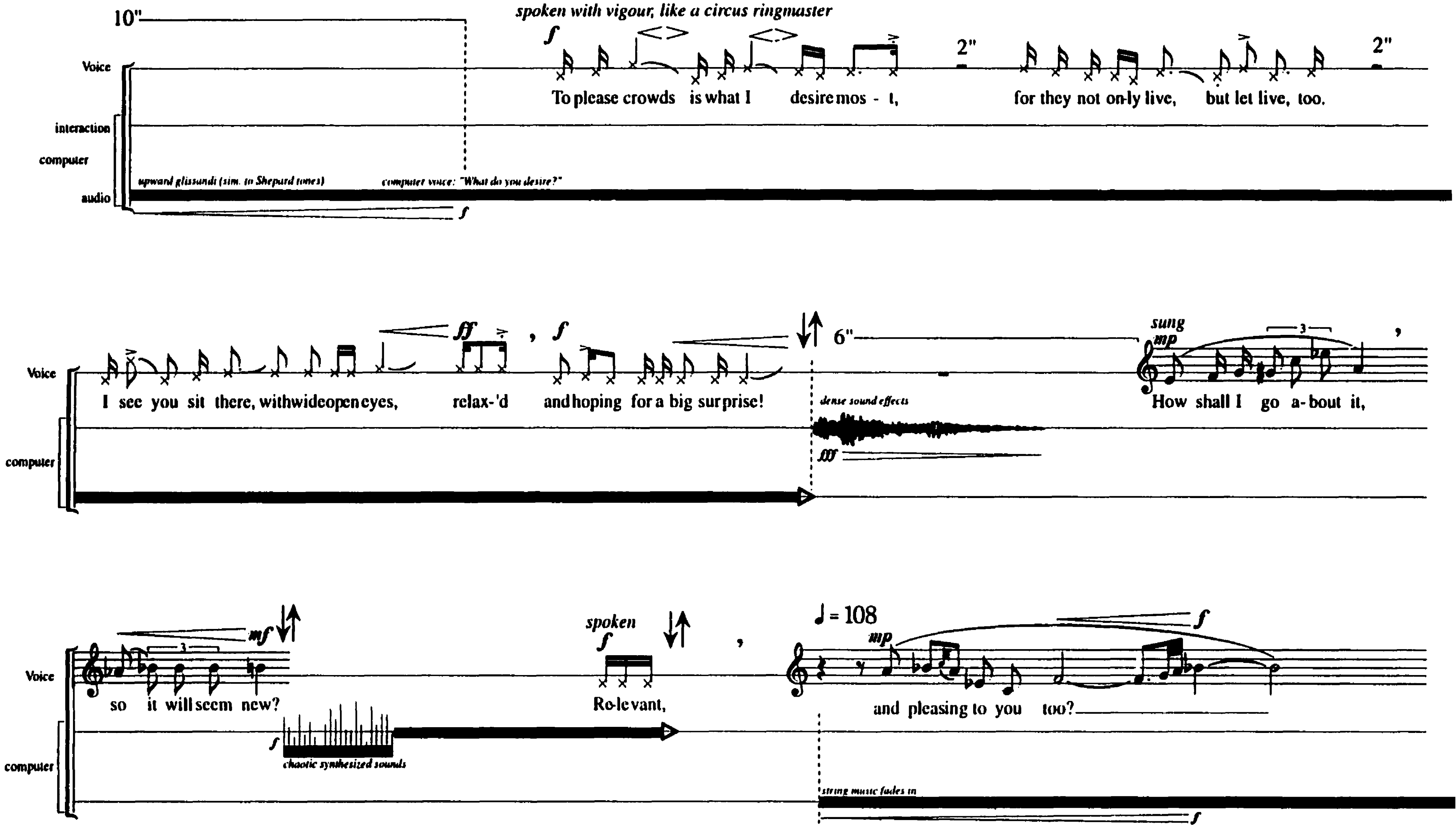

10"
mf
Voice
computer
The
word
was
God.
attacca II

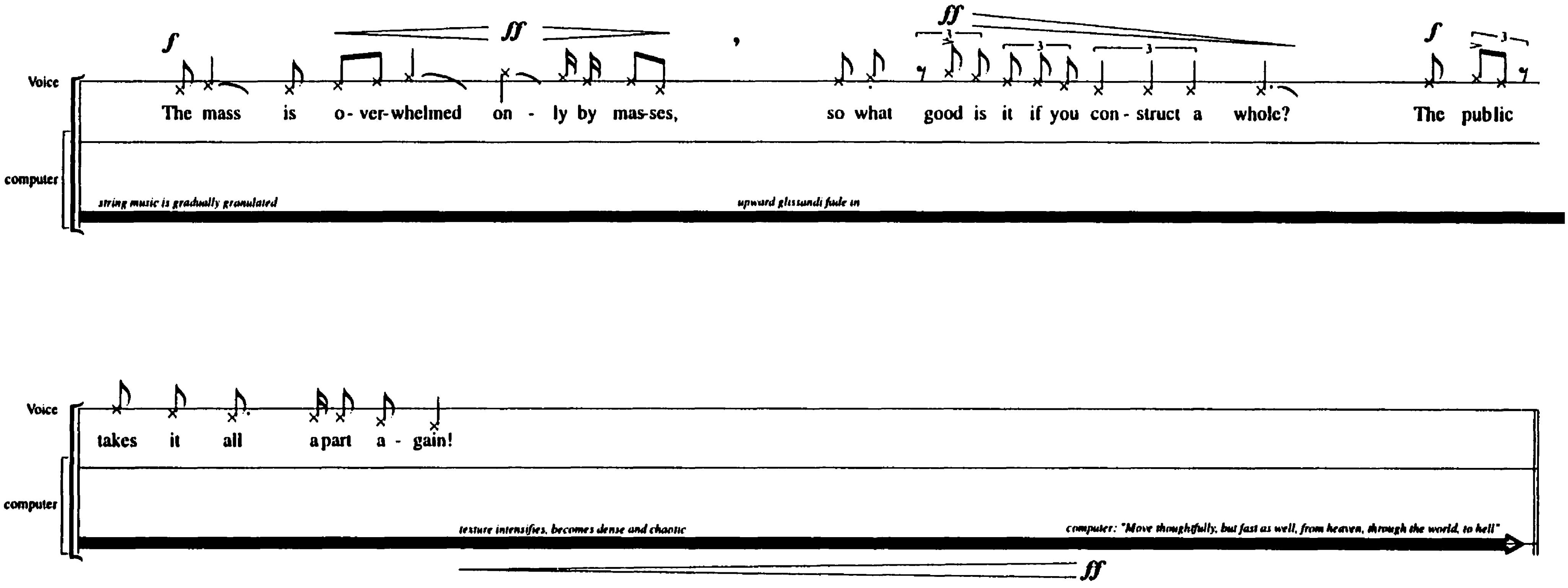
II. Dedication


calmly, mysteriously and with a rubato feel
♩= 76-84
10"
12"
12"
mp
f
p
Voice
interaction
computer
audio
computer
computer
Sie hören nicht, die folgenden Gesäng - e Die seelen de - nen ich die erst-en sang;
Zer- sto- ben ist das freund-lich - e Ge - dräng - e,
whispered:
ver - klung - en, ach! der er - ste widerklang!
Zer- sto- ben
3

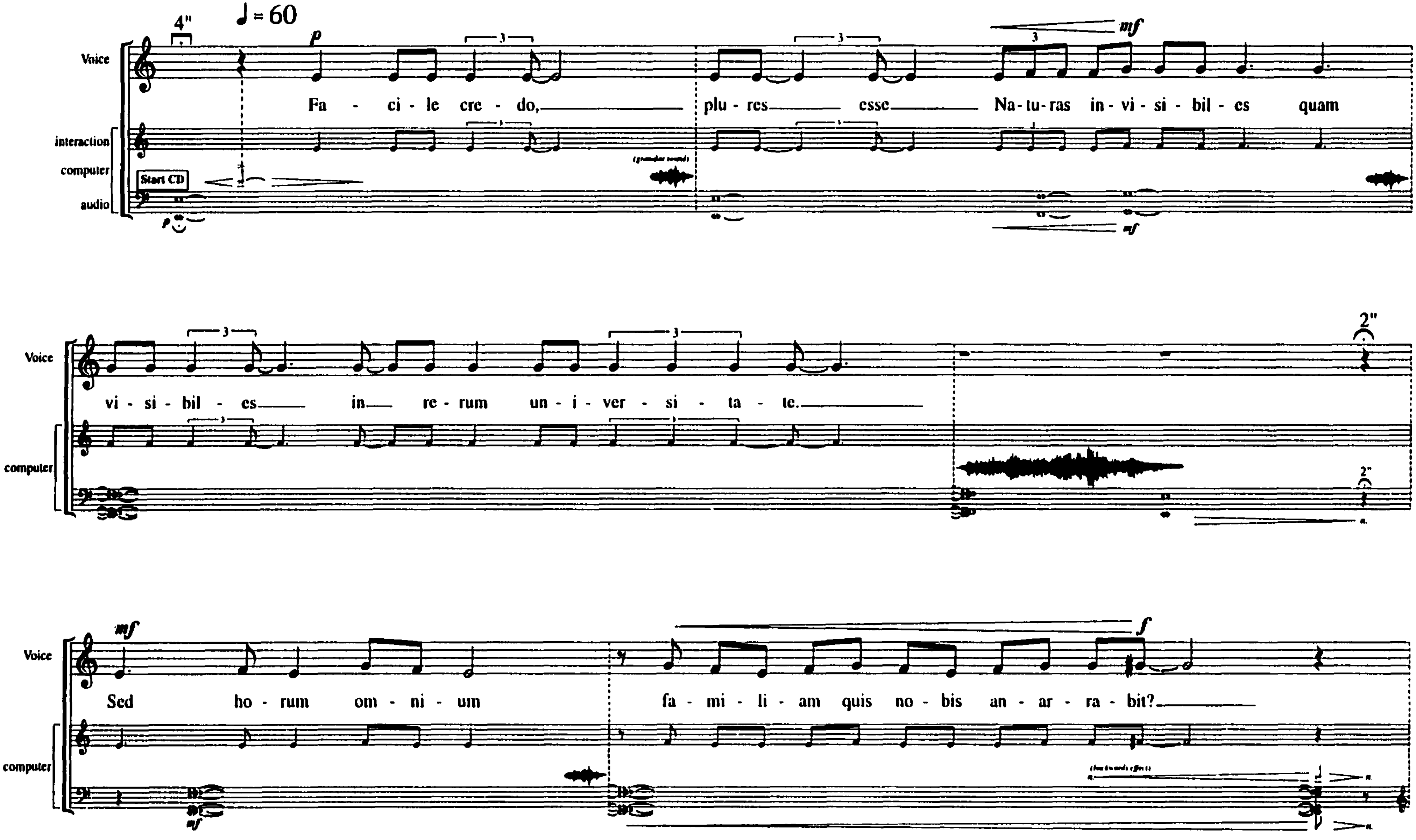
attacca III

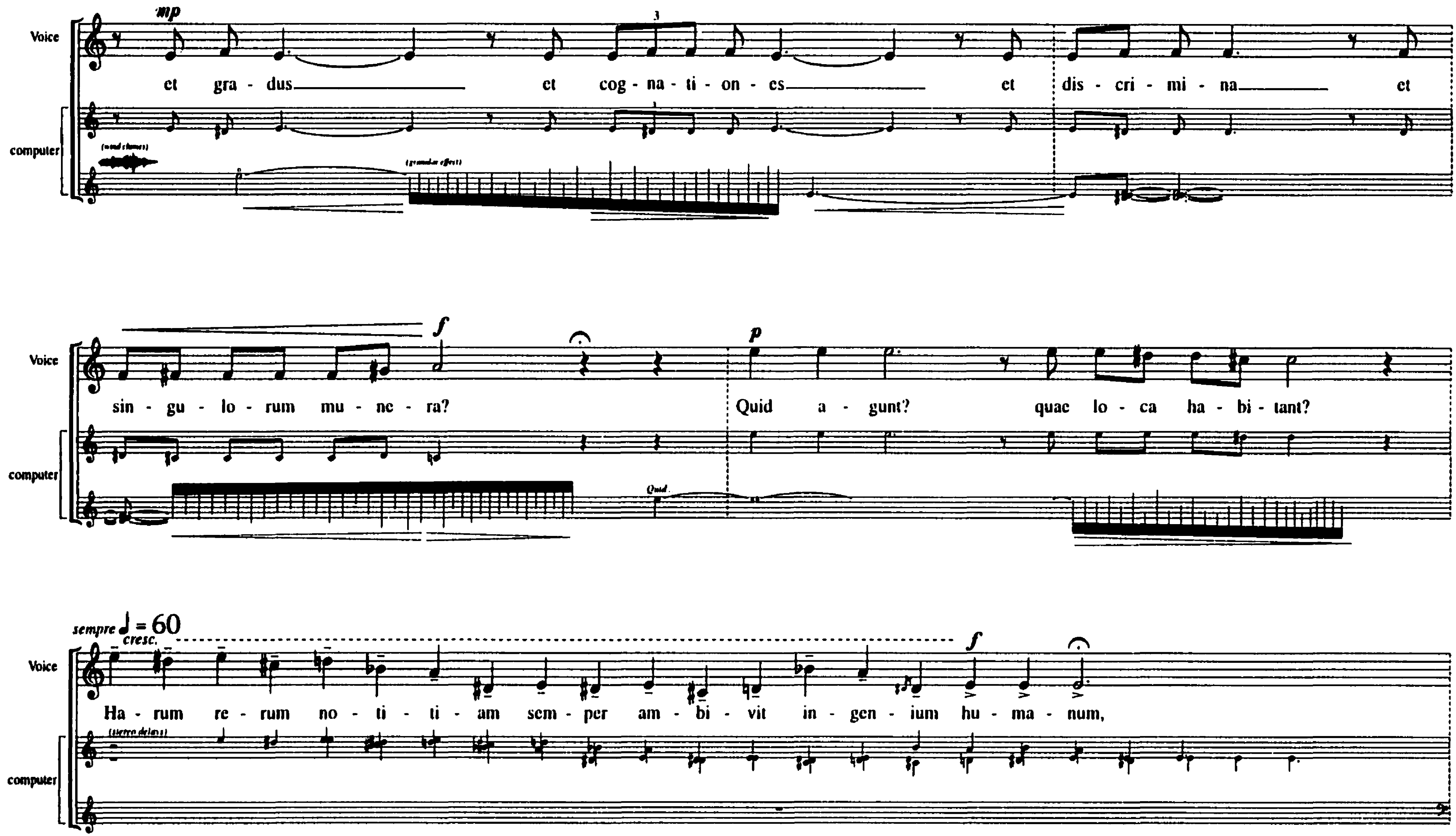
III. Prologue: In the Theatre

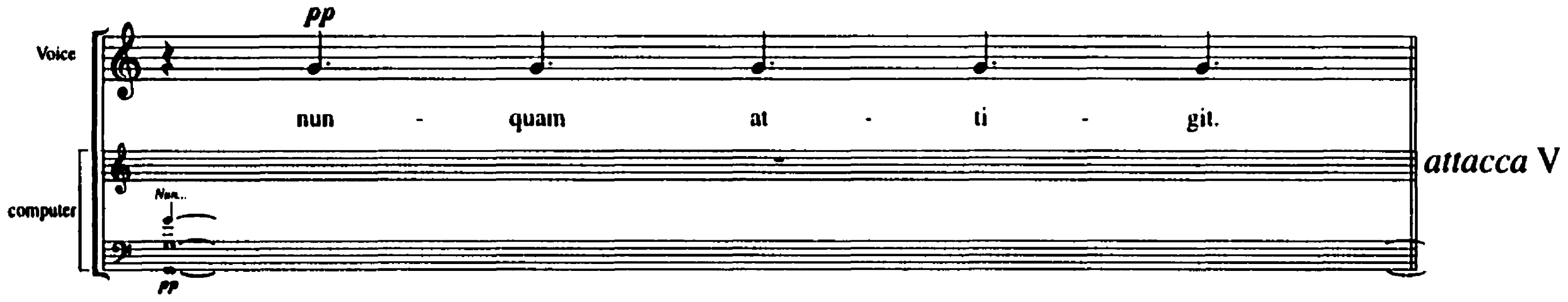

10"
spoken with vigour, like a circus ringmaster
Voice
interaction
computer
audio
upward glissandi (sim. to Shepard tones)
computer voice: "What do you desire?"
f
To please crowds is what I desire mos - t,
2"
for they not on-ly live, but let live, too.
2"
I see you sit there, withwideopeneyes,
ff
relax-'d
f
andhoping for a big surprise!
6"
dense sound effects
fff
sung
mp
How shall I go a-bout it,
so it will seem new?
mf
chaotic synthesized sounds
f
spoken
f
Re-le vant,
♩ = 108
mp
and pleasing to you too?
f
string music fades in
f
computer


Voice
computer
f
ff
ff
f
The mass is o- ver- whelmed on - ly by mas-ses, so what good is it if you con - struct a whole? The public
string music is gradually granulated
upward glissandi fade in
takes it all apart a - gain!
texture intensifies, becomes dense and chaotic
computer: "Move thoughtfully, but fast as well, from heaven, through the world, to hell"
ff

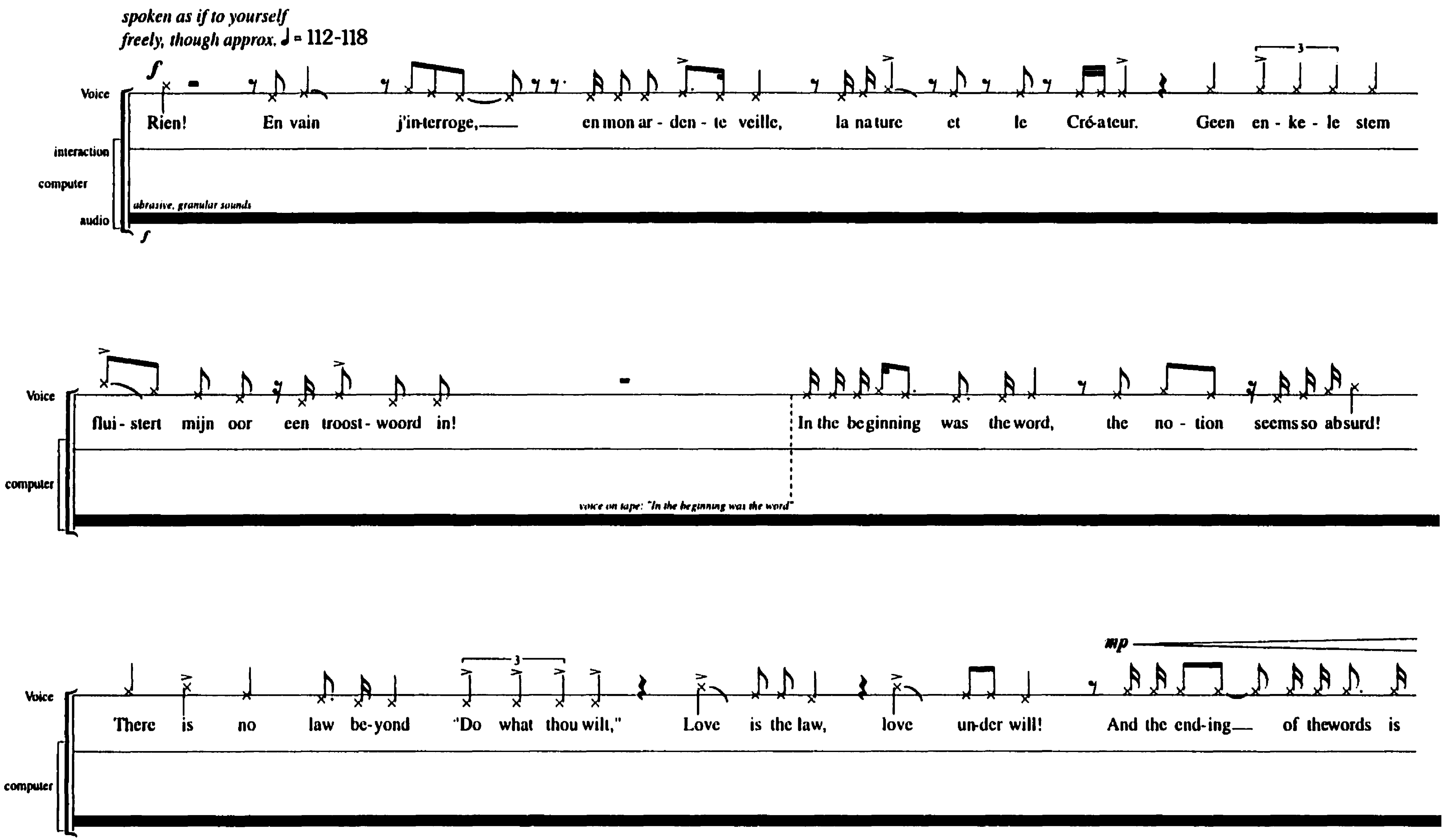
IV. Prelude: *Facile Credo*

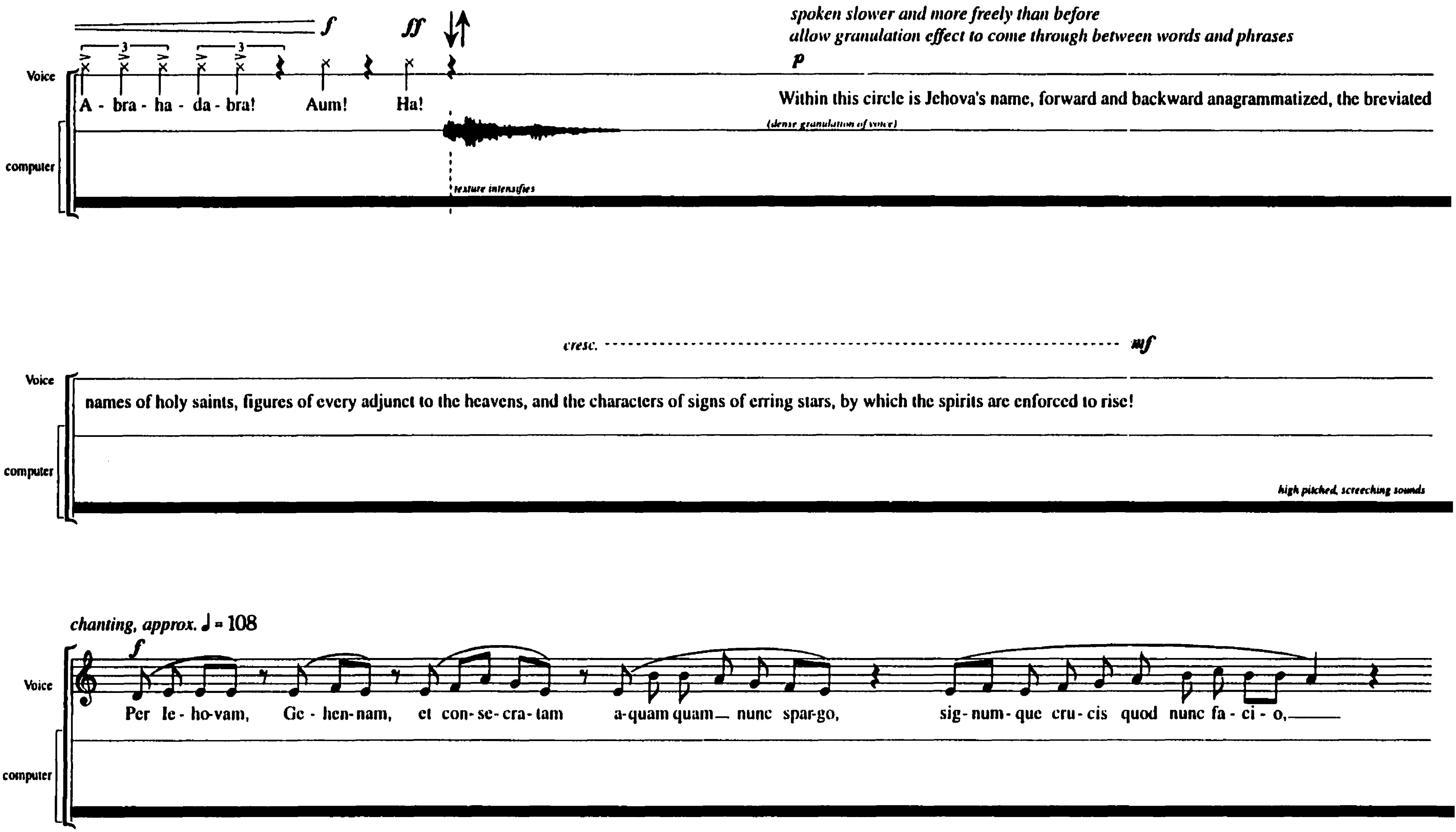

4"
♩ = 60
Voice
interaction
computer
audio
Start CD
p
mf
(granular sound)
Fa - ci - le cre - do, plu - res esse Na - tu - ras in - vi - si - bil - es quam
vi - si - bil - es in re - rum un - i - ver - si - ta - te.
2"
Sed ho - rum om - ni - um fa - mi - li - am quis no - bis an - ar - ra - bit?
f
(backwards effect)

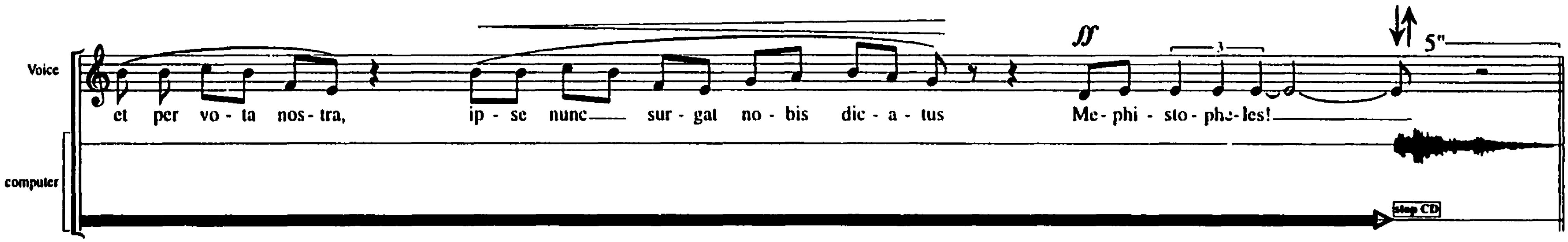

Voice
computer
mp
3
et gra - dus
et cog - na - ti - on - es
et dis - cri - mi - na
et
(wind chimes)
(granular effect)
f
sin - gu - lo - rum mu - ne - ra?
p
Quid a - gunt? quae lo - ca ha - bi - tant?
Quid
sempre
cresc.
= 60
f
Ha - rum re - rum no - ti - ti - am sem - per am - bi - vit in - gen - ium hu - ma - num,
(stereo delays)


Voice
computer
pp
nun - quam at - ti - git.
Nun...
pp
attacca V

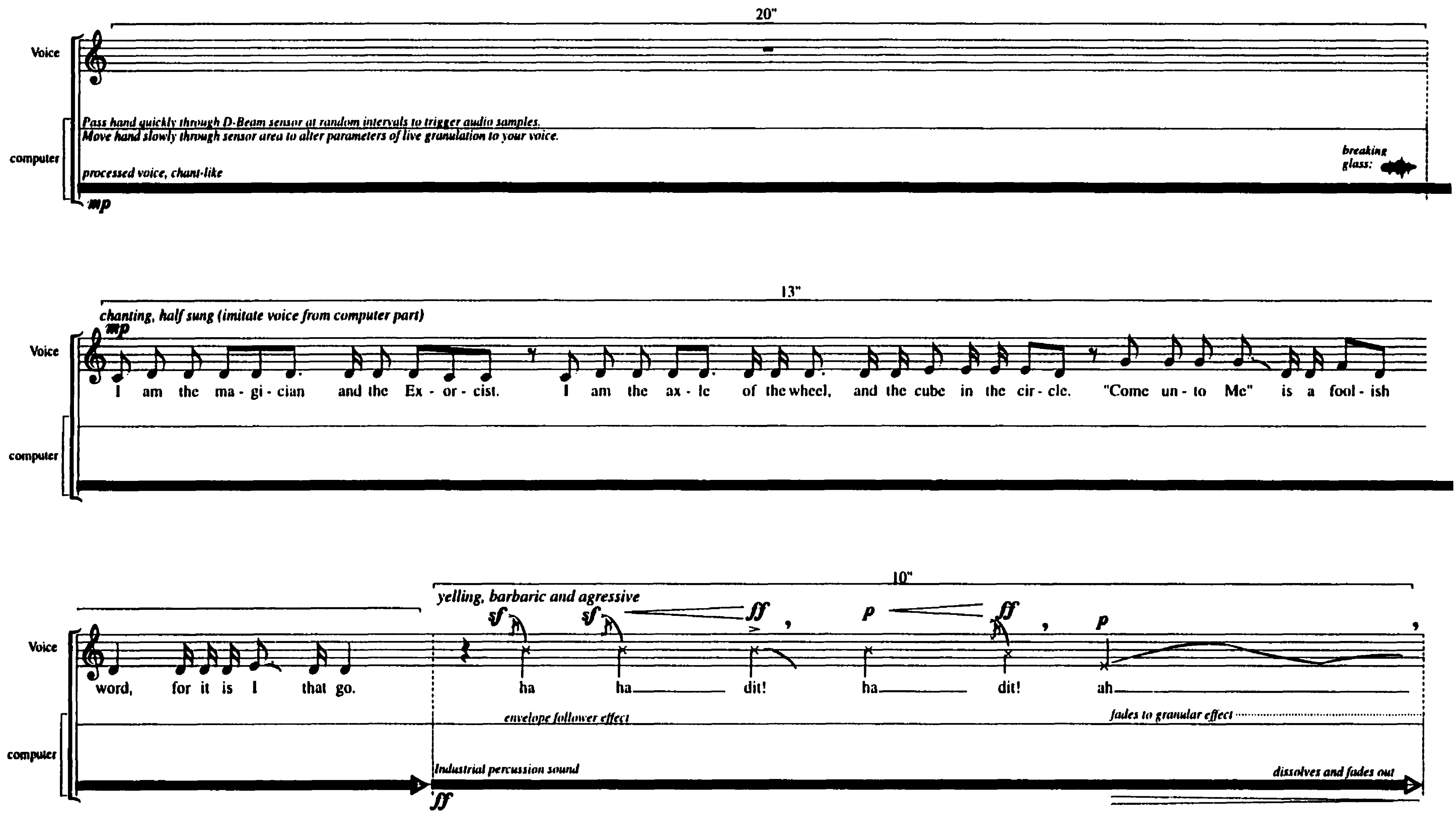
V. Incantation

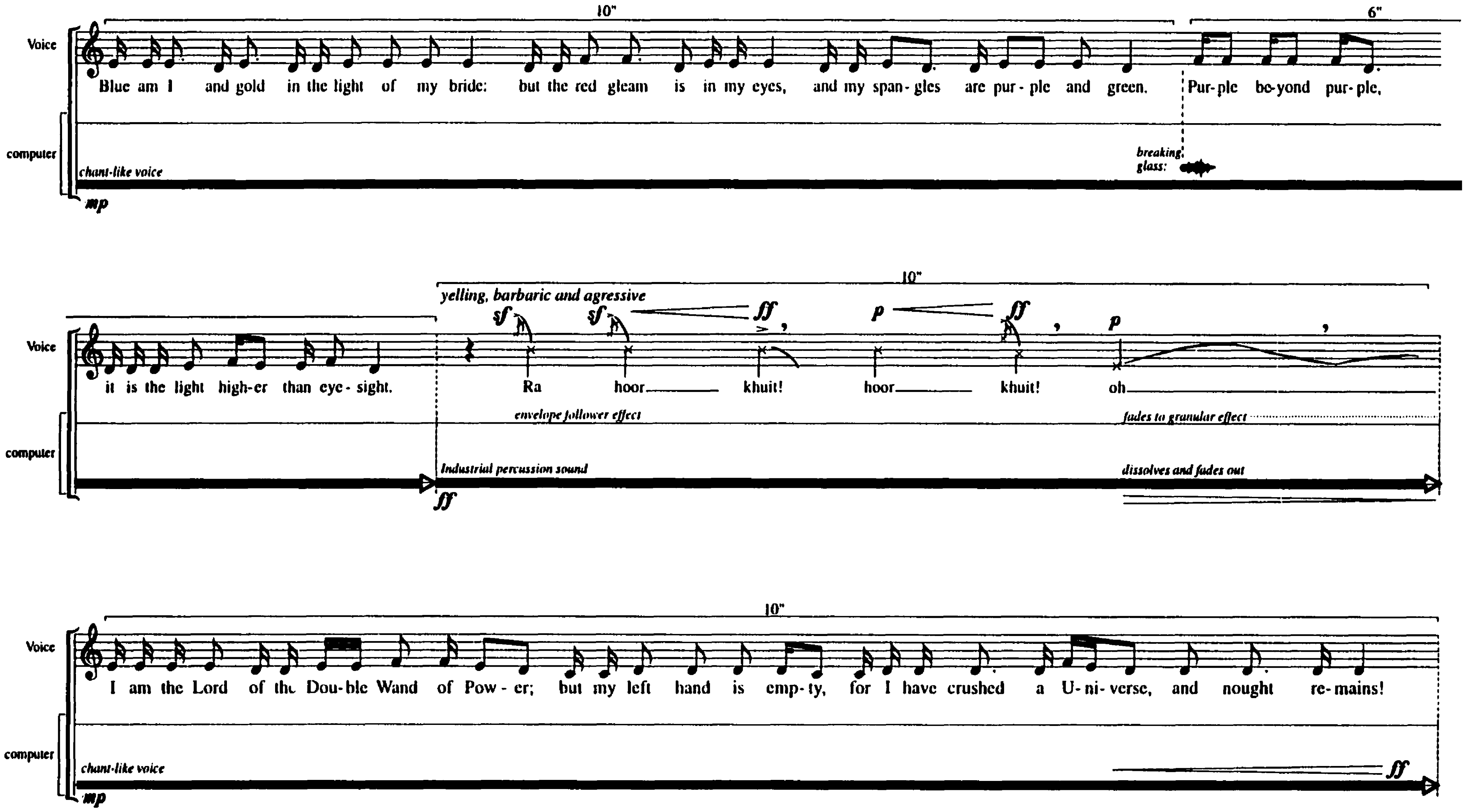

spoken as if to yourself
freely, though approx. ♩ = 112-118
Voice
interaction
computer
audio
abrasive, granular sounds
f
Rien! En vain j'interroge,— en mon ar - den - te veille, la nature et le Créateur. Geen en - ke - le stem
flui - stert mijn oor een troost - woord in!
voice on tape: "In the beginning was the word"
In the beginning was the word, the no - tion seems so absurd!
There is no law be-yond "Do what thou wilt," Love is the law, love un-der will!
mp
And the end-ing— of the words is
3

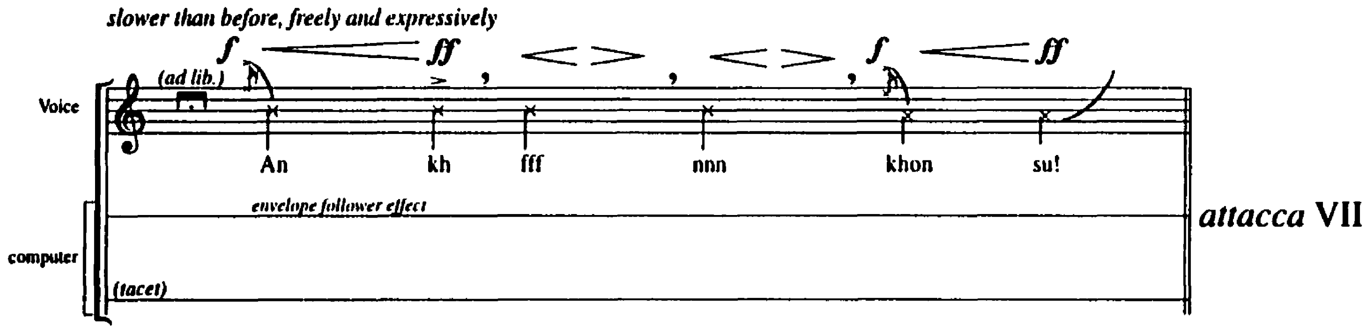

spoken slower and more freely than before
allow granulation effect to come through between words and phrases
Voice
computer
f
ff
3
3
A - bra - ha - da - bra!
Aum!
Ha!
p
Within this circle is Jehova's name, forward and backward anagrammatized, the breviated
(dense granulation of voice)
texture intensifies
cresc.
mf
names of holy saints, figures of every adjunct to the heavens, and the characters of signs of erring stars, by which the spirits are enforced to rise!
high pitched, screeching sounds
chanting, approx. ♩ = 108
f
Per Ie - ho-vam, Ge - hen-nam, et con-se-cra-tam a-quam quam— nunc spar-go, sig-num-que cru-cis quod nunc fa - ci - o,——


Voice
computer
ff
5"
et per vo - ta nos - tra,
ip - se nunc
sur - gat no - bis dic - a - tus
Me - phi - sto - phe - les!
3
stop CD

VI. Mephistopheles


20"
Voice
computer
Pass hand quickly through D-Beam sensor at random intervals to trigger audio samples.
Move hand slowly through sensor area to alter parameters of live granulation to your voice.
processed voice, chant-like
mp
breaking glass:
13"
chanting, half sung (imitate voice from computer part)
mp
I am the ma - gi - cian and the Ex - or - cist. I am the ax - le of the wheel, and the cube in the cir - cle. "Come un - to Me" is a fool - ish
word, for it is I that go.
10"
yelling, barbaric and agressive
sf
sf
ff
p
ff
p
ha ha dit! ha dit! ah
envelope follower effect
fades to granular effect
Industrial percussion sound
ff
dissolves and fades out


10"
6"
Voice
computer
Blue am I and gold in the light of my bride: but the red gleam is in my eyes, and my span- gles are pur - ple and green.
Pur- ple be-yond pur- ple,
chant-like voice
mp
breaking glass:
10"
yelling, barbaric and agressive
sf
sf
ff
p
ff
p
Voice
computer
it is the light high-er than eye - sight.
Ra hoor___ khuit! hoor___ khuit! oh___
envelope follower effect
fades to granular effect
Industrial percussion sound
ff
dissolves and fades out
10"
Voice
computer
I am the Lord of the Dou- ble Wand of Pow - er; but my left hand is emp- ty, for I have crushed a U- ni- verse, and nought re- mains!
chant-like voice
mp
ff


slower than before, freely and expressively
f
ff
f
ff
(ad lib.)
Voice
computer
An
kh
fff
nnn
khon
su!
envelope follower effect
(tacet)
attacca VII

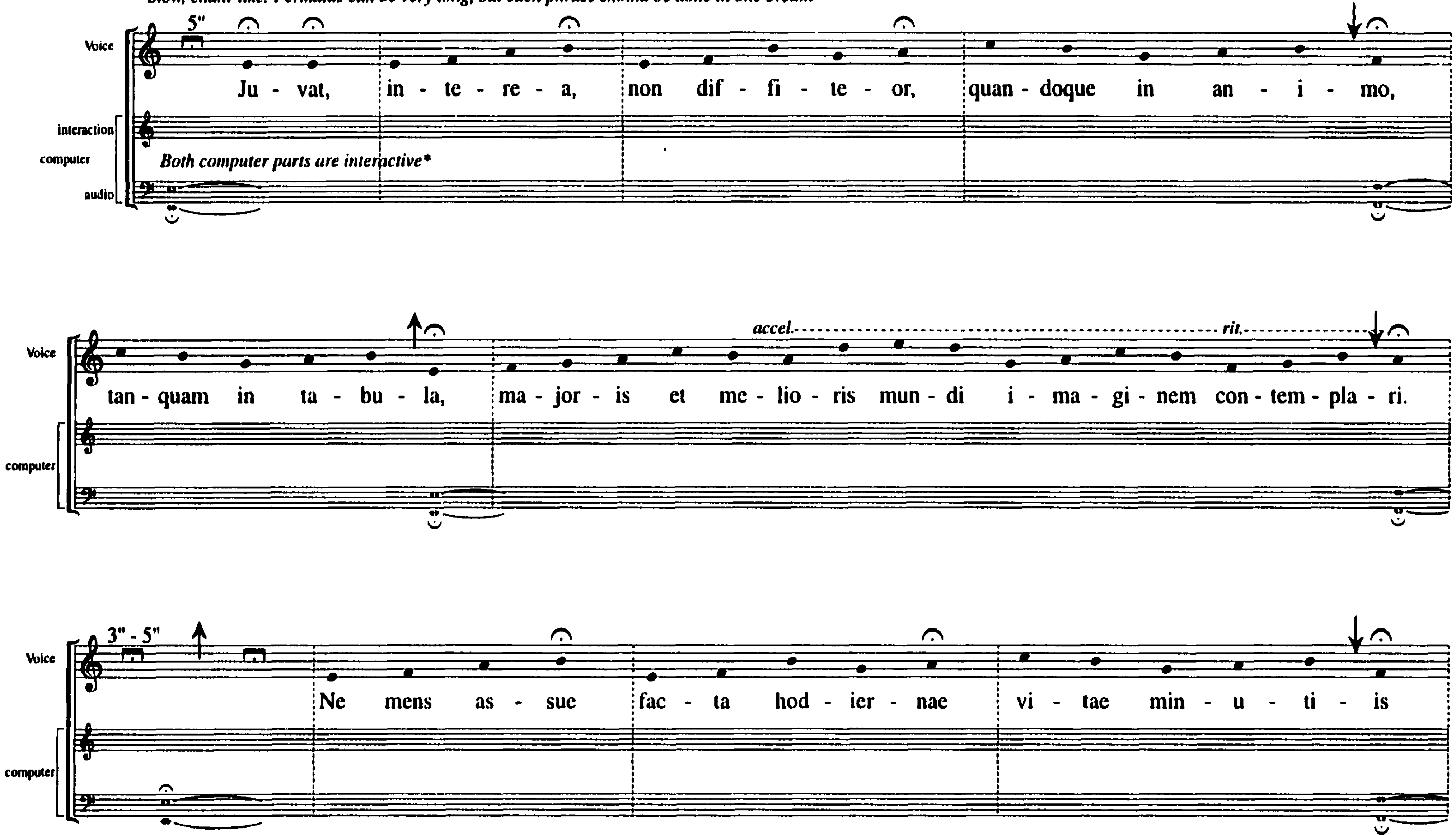
VII. Walpurgis Night's Dream

CD Solo
(dur. 1'30")

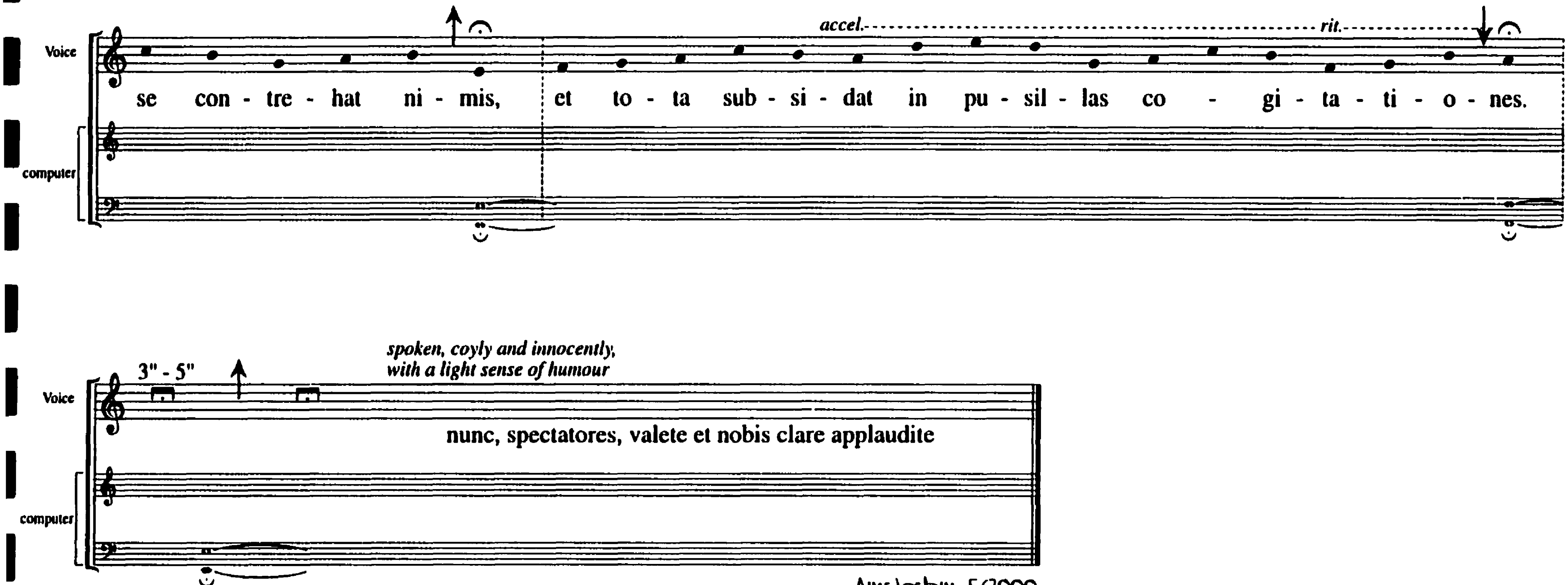
pause before VIII.

VIII. Postlude

Slow, chant-like. Fermatas can be very long, but each phrase should be done in one breath


5"
Voice
interaction
computer
audio
Ju - vat, in - te - re - a, non dif - fi - te - or, quan - doque in an - i - mo,
Both computer parts are interactive*
accel.
rit.
tan - quam in ta - bu - la, ma - jor - is et me - lio - ris mun - di i - ma - gi - nem con - tem - pla - ri.
3" - 5"
Ne mens as - sue fac - ta hod - ier - nae vi - tae min - u - ti - is

**interaction: voice pitch and amplitude are tracked with filtered noise, producing a high whistling sound*
Bottom staff: bass pitch pivots back and forth between E and F, and is triggered using the D-Beam. See performance notes for instructions.



Voice
computer
accel.
rit.
se con - tre - hat ni - mis, et to - ta sub - si - dat in pu - sil - las co - gi - ta - ti - o - nes.
3" - 5"
spoken, coyly and innocently,
with a light sense of humour
Voice
computer
nunc, spectatores, valete et nobis clare applaudite

Amsterdam 5/2000

From Heaven, Through the World, to Hell

for actress-singer, computer and chamber ensembles

Marcel Wierckx (1999, 2000)

I. Overture
II. Dedication
III. Prologue: In the Theatre

IV. Prelude: *Facile Credo*
V. Incantations
VI. Mephistopheles
VII. Walpurgis Night's Dream

VIII. Postlude: *Juvat, Interea, non Diffiteor*

From Heaven, Through the World, to Hell (1999, 2000)

Marcel Wierckx (b.1970)

The title of this piece comes from Goethe's Faust, in fact it was his own working title during the early stages of its creation. While my version of the myth does borrow somewhat from Goethe's version, there are also references to Christopher Marlowe's play Dr. Faustus (written ca. 1592), as well as quotations from the scientific and spiritual writings of Aleister Crowley and Thomas Burnet. This piece explores the Faust legend within a kind of technological musical theatre framework, and makes extensive use of live computer interaction using the Max/MSP environment. The actress-singer interacts with the computer using an infrared sensor, allowing her to trigger as well as shape many of the sounds in the piece through physical gestures. This piece was originally written for g.e.m.s. as part of the McGill University composer-in-residence program between 1998-1999.

This new version of the work adds four chamber ensembles, each one representing a period in Western music history. The material which they play is primarily an orchestration of the original CD part, though in many places new material is added. Through quotation, parody and allusion, these ensembles invoke fragments of past and present musics and combine them into an often dense and confusing collage texture. These rapid shifts of texture, and the juxtaposition of disparate musical styles against one another, is meant to imitate and comment on the barrage of sounds and images present in our media saturated society.

Instrumentation

Actress-singer

Piano Quintet:

- Violins I & II
- Viola
- Violoncello
- Piano

Baroque Ensemble:

- Baroque Flute
- Baroque Violin
- Harpsichord
- Viola da Gamba (optional)

Jazz Quartet:

- Alto Saxophone in Eb
- Electric Guitar
- Double Bass (acoustic or electric)
- Drum Kit

Modern Ensemble:

- Turntables
- Drum Machine:
  - Roland TR-808 or similar. If one is not available, Propellerhead Software makes a software version for Macintosh or PC which can be used.
- Synthesizer:
  - Any synthesizer which conforms to the General MIDI Standard can be used. Suggested General MIDI patch numbers are included in the score.
- Percussion:
  - Marimba
  - Tom-Toms
  - Suspended Cymbal
  - Bass Drum
  - Wind Chimes
  - Tubular Bells

Technical requirements

Equipment:

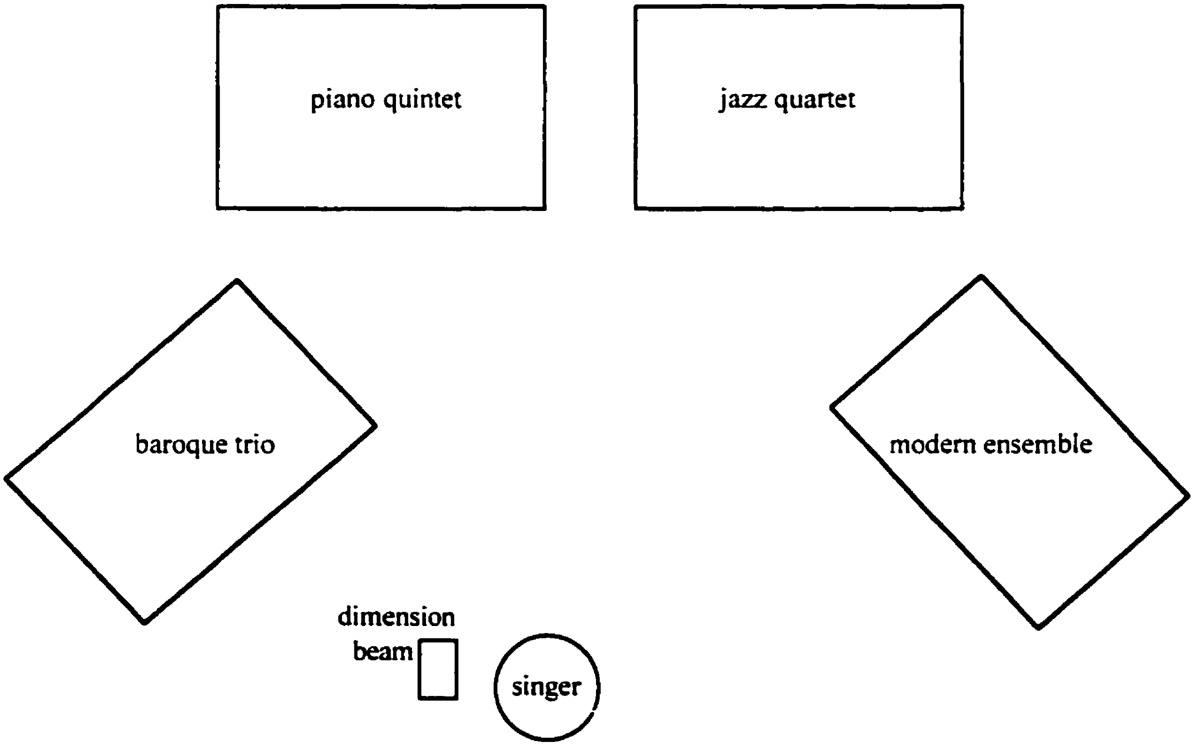
- -Macintosh G3/233 (minimum), set up next to house mixer
- -CD player
- -Dimension Beam sensor, mounted on a mic stand onstage*
- -standard MIDI interface, with midi cable long enough to run from Dimension Beam onstage to the Macintosh
- -wireless microphone
- -auxiliary output of voice channel from mixer to Macintosh audio input
- -stereo out from Macintosh to house mixer
- -onstage monitor

Lighting:

- -3 narrow spotlights focused on the singer from directly above: white (50% intensity), blue and red
- - ensemble should be in the dark, except for their music stand lights
- -specific lighting changes for piece as indicated in score

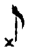
* *an alternate midi input device (video, I-Cube etc.) can be substituted for the Dimension Beam, provided it is set up to transmit controller 1 (mod wheel) data on any midi channel to the Macintosh.*

Stage Setup



Performance Notes and Special Notation

Voice:



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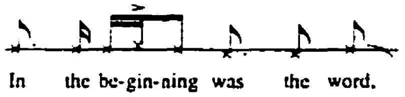
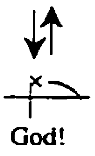
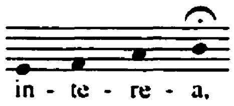


begins at a normal spoken level. Emphasis is given to "*-gin-*" by raising the pitch slightly, and the words "*was the*" are spoken at a slightly lower pitch. The downward curved line at the end indicates a drop in pitch as the word is being spoken.



- A down arrow indicates when the singer's hand should be placed inside the D-Beam sensor area; an up arrow indicates when it should be removed. Arrows may be accompanied by notes describing the specific action required. Two opposing arrows placed next to each other indicate that the hand should be passed in and out of the sensor area once quickly.

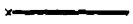


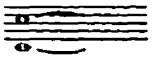
- Noteheads without stems are to be sung in a Gregorian Chant style. In *VIII. Postlude*, the singer's voice is tracked by the computer which produces an accompanying whistling sound. The singer is urged to experiment with this effect during rehearsal in order to find interesting tempo and dynamic variations upon which the computer can react.

Performance Note for the Singer: *From Heaven, Through the World, to Hell* is more challenging in a psychological sense than in a technical sense, as it requires much more from the "actress" part of the performer than from the "singer" part. The performer must recognize the different kinds of characters needed for each movement, and be able to switch between these characters very rapidly (a useful analogy is of switching quickly between several television stations with a remote control). In order to accomplish this, the performer needs to build for herself a well defined character for each section of the piece, based on individual study of each movement. It is only with careful attention and dedication that the singer can deliver a truly effective theatrical performance.

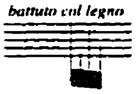
Performance Notes and Special Notation

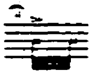
All Instruments:

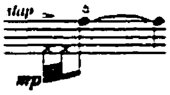

- The note or effect is to be sustained until the end of the line.


- The note or chord is to be sustained until a new note or chord appears in the music.

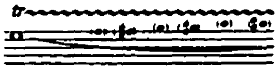
String instruments:


battuto col legno
- Tap the strings with the wood of the bow, producing random pitches.


- Play behind the bridge, on all four strings, in the indicated rhythm.

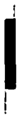


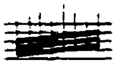
- "*slap*" indicates that the notes with the "x" heads are to be slapped with the thumb of the right hand, on the open string indicated *(Double Bass only)*. "ȸ" = snap pizzicato.



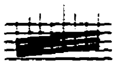
- The small noteheads in brackets indicate the upper note of the trill.

Keyboard instruments:

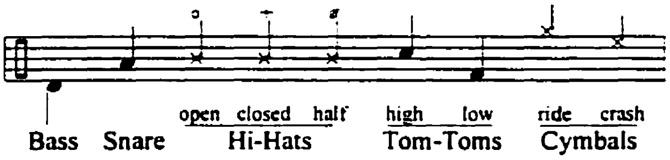

- Chromatic cluster, spanning approximately the range indicated on the staff.


- Chromatic random notes, played as fast as possible.

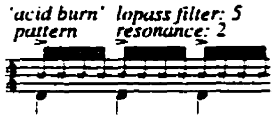
Percussion instruments:


- Chromatic random notes, played as fast as possible.

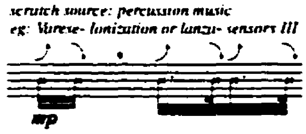
Drum Kit:

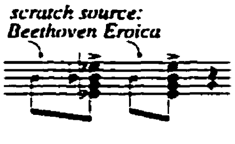

open
closed
half
high
low
ride
crash
Bass
Snare
Hi-Hats
Tom-Toms
Cymbals

Drum machine:

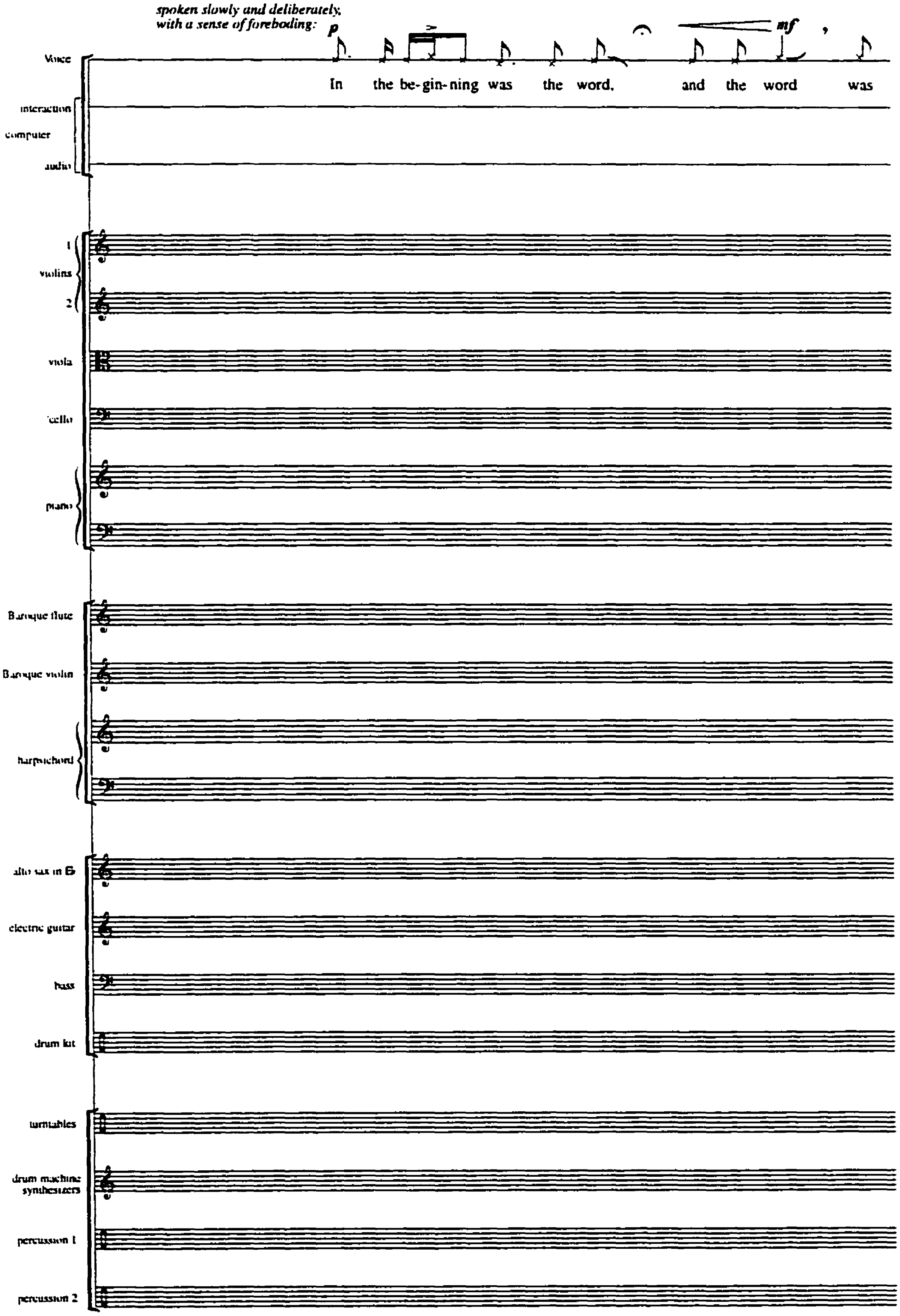

'acid burn' pattern
lopass filter: 5
resonance: 2
- Set the Roland TR-808 (or similar) drum machine to the "*acid burn*" preset, with the low pass filter and resonance controls to the indicated levels. Modulate these settings as indicated in the score ("*5* ⟨ *10*" = gradual change from one value to another).

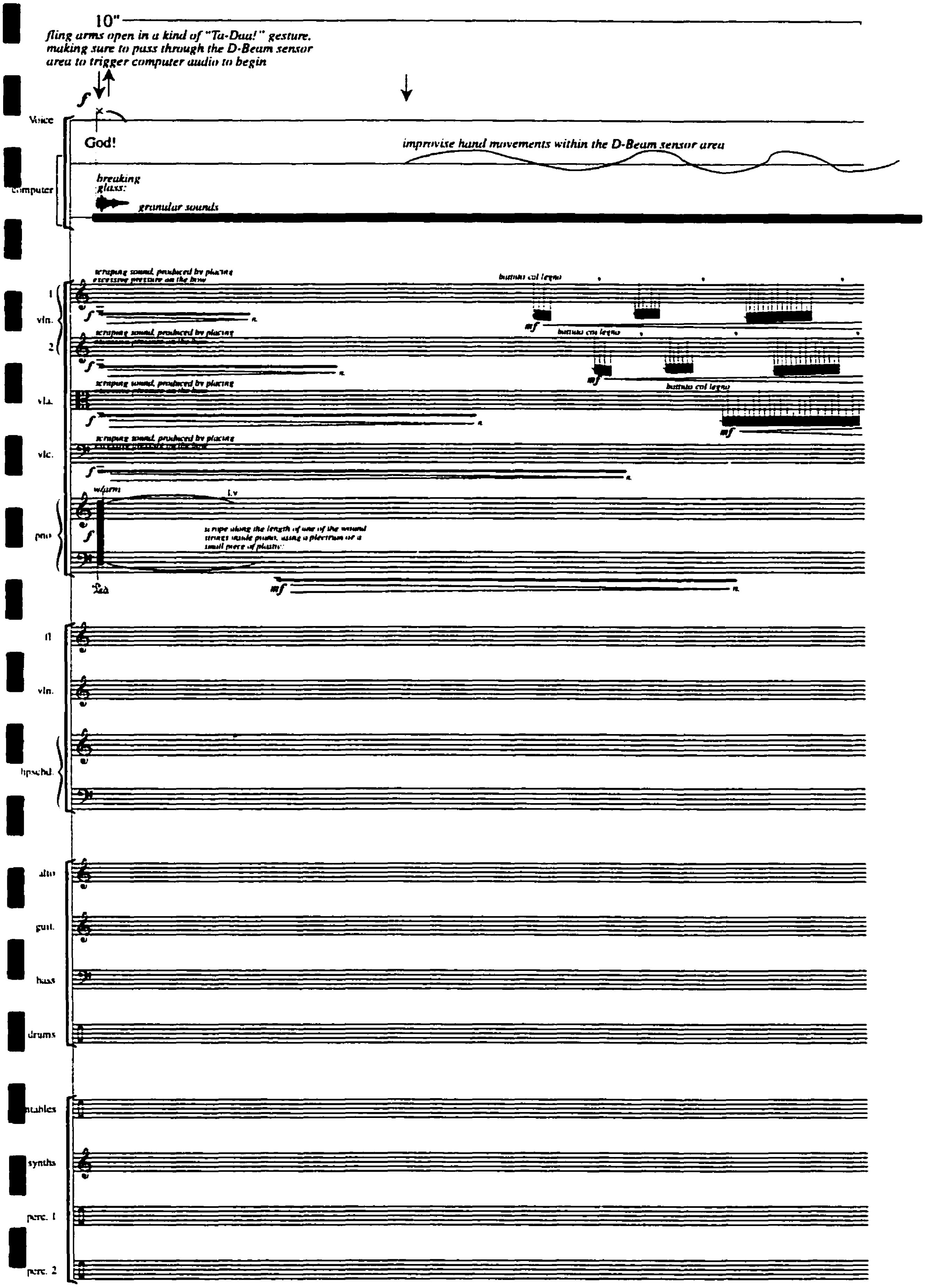
Turntables:

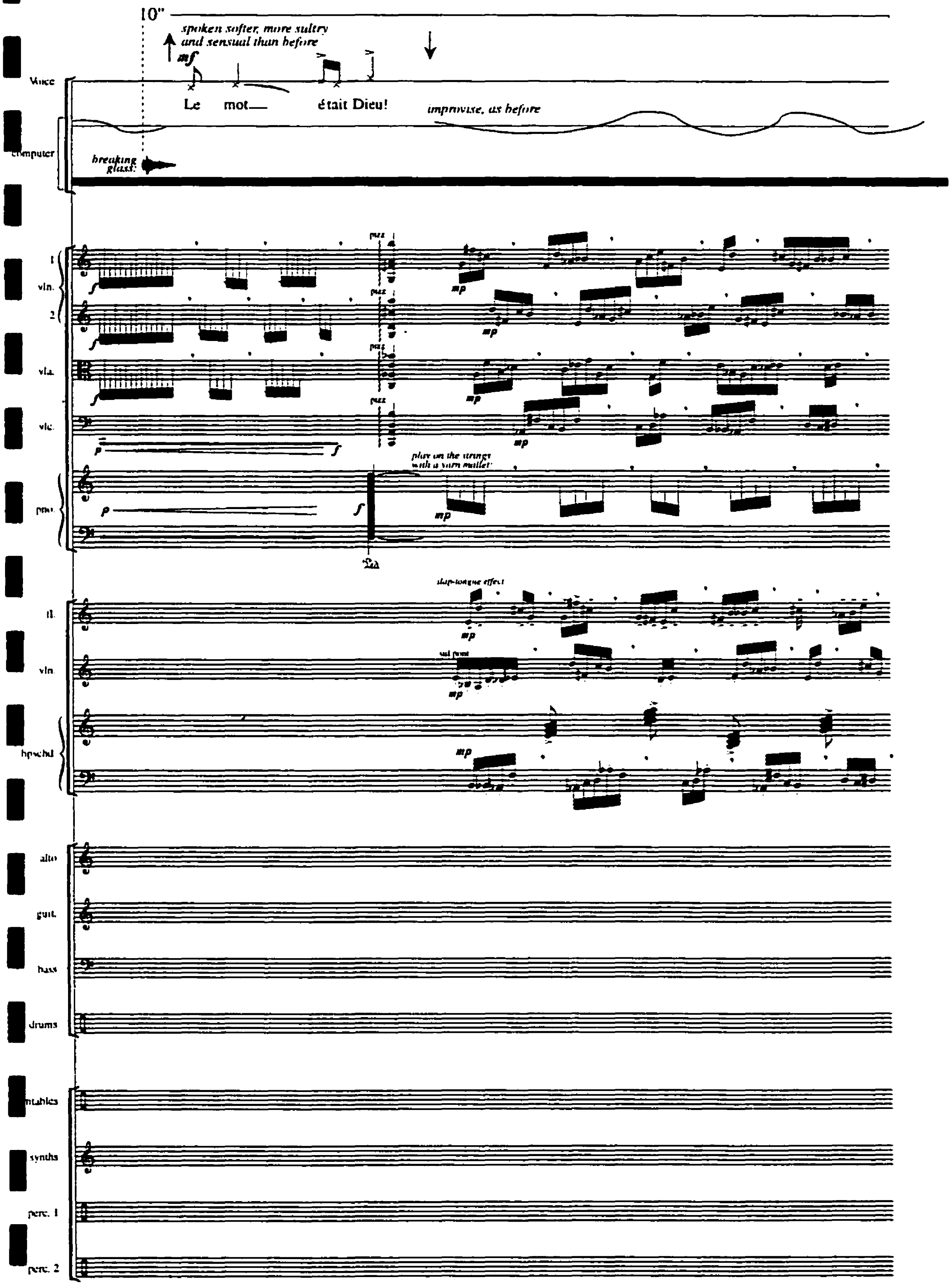

scratch source: percussion music
eg: Varese- Ionization or Lanza- sensors III
mp
- "*scratch source*" indicates what kind of source material to use for scratching the given rhythm. Source material is *ad libitum* within the genre indicated, and possible source LPs are suggested in the score (with the exception noted below). Curved arrows above the notes indicate what kind of sonority to produce - an upward arrow implies a sound that rises in pitch while a downward arrow implies a descending pitch.

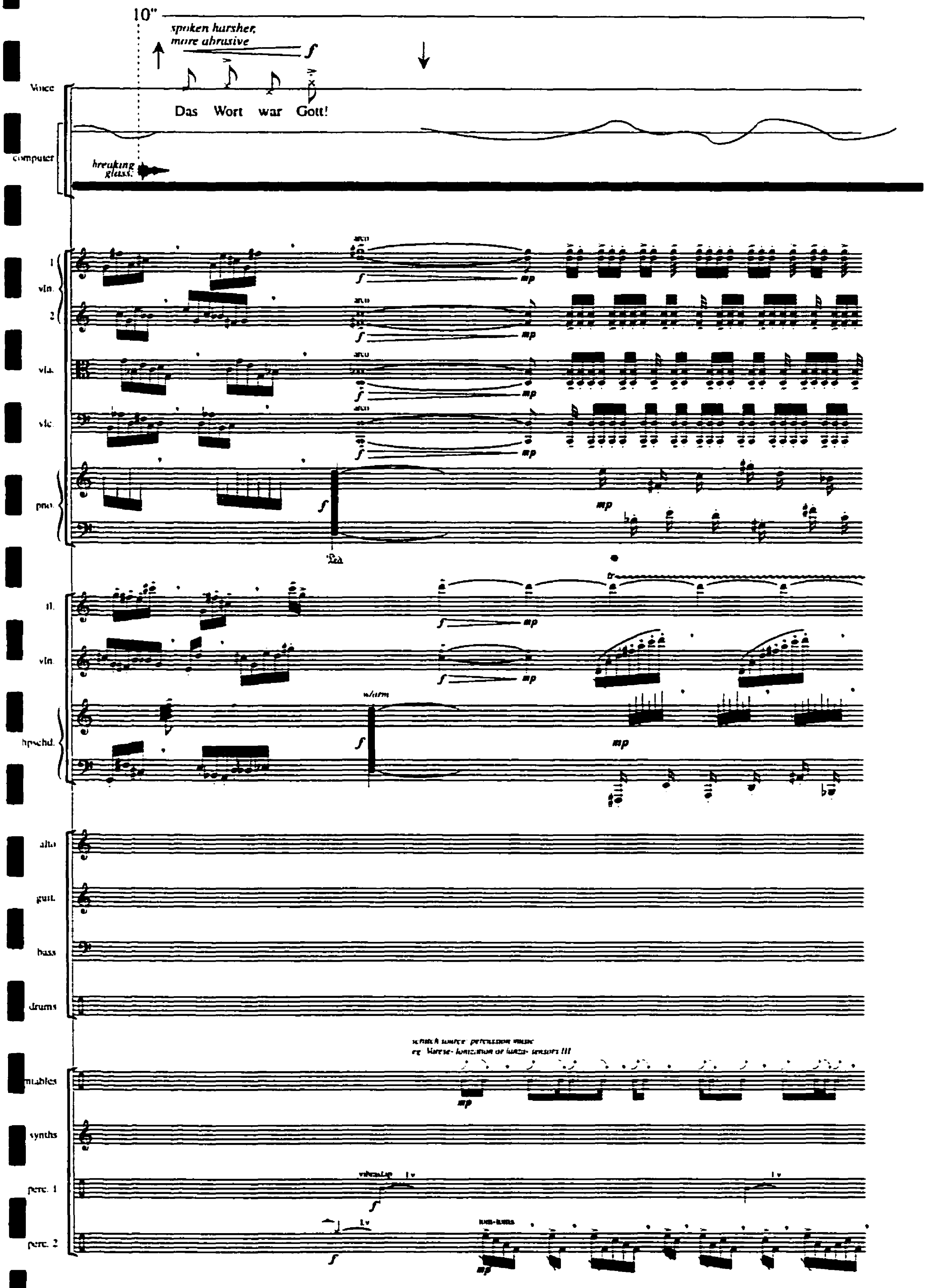

scratch source:
Beethoven Eroica
- Use the opening chord of Beethoven's *Eroica* Symphony as source material. "x" noteheads with downward curved arrows indicate a spin-back to the beginning of the chord, while the notated E♭ major chord indicates normal speed playback of the chord itself.

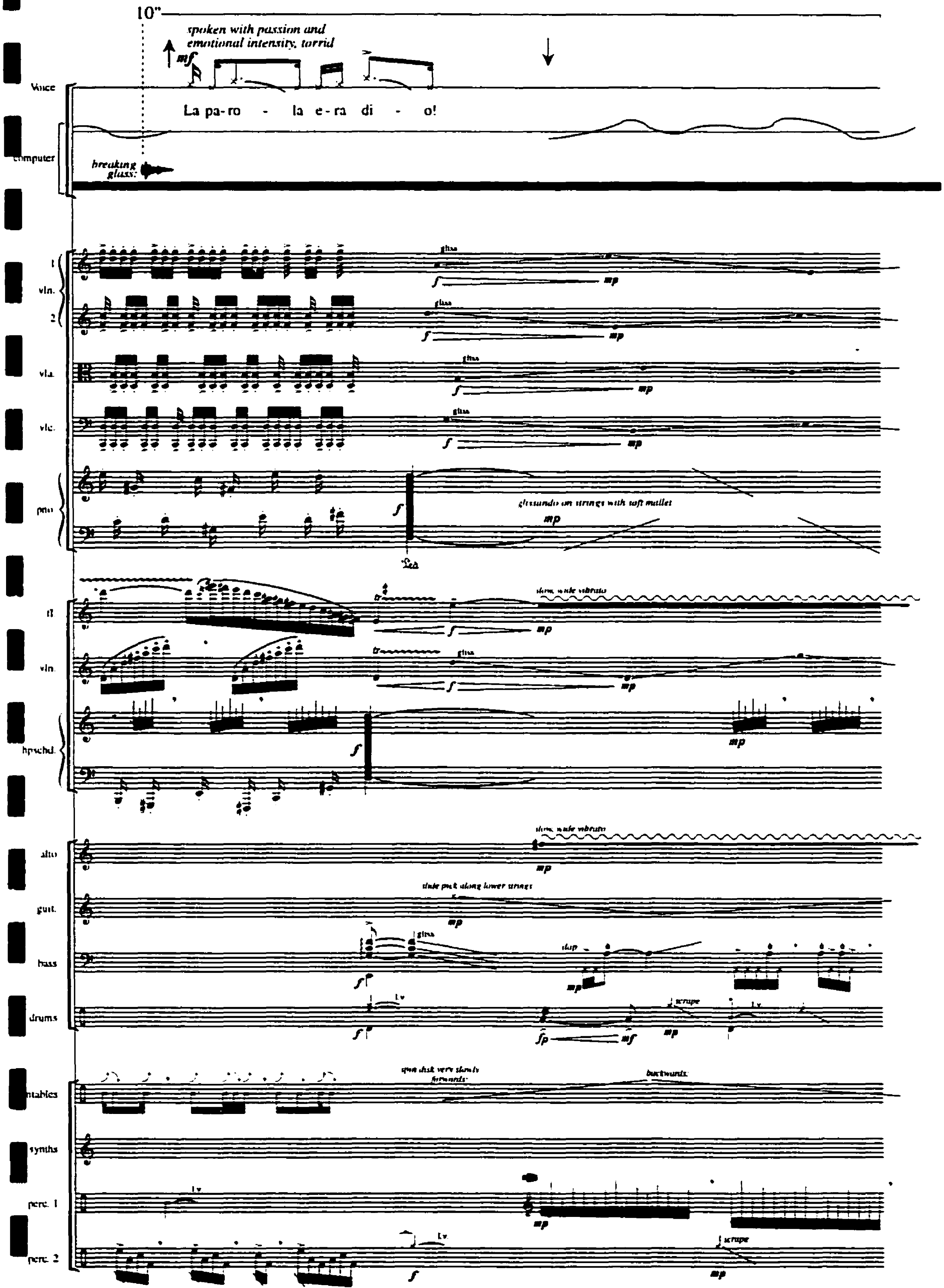
I. Overture

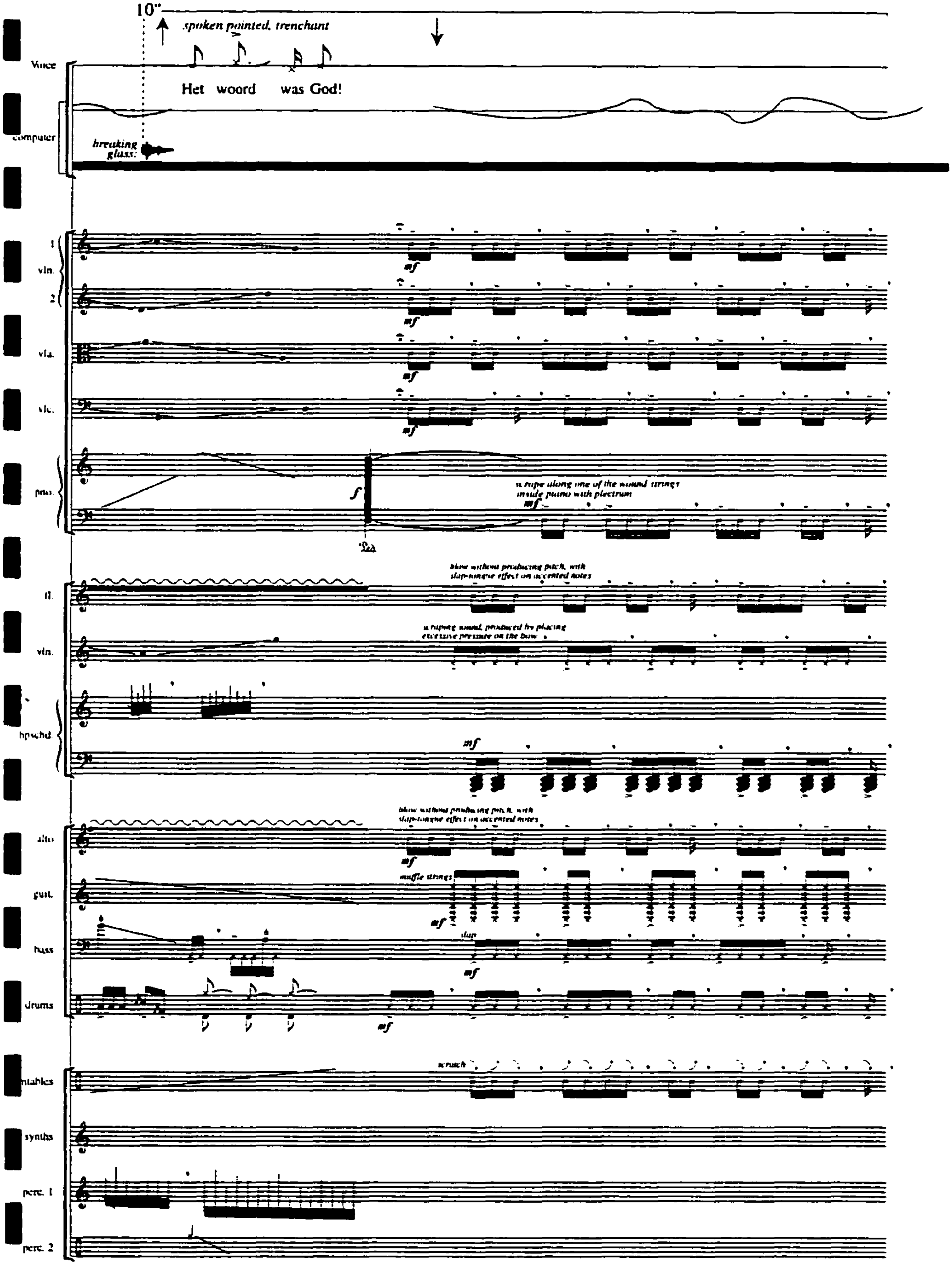

spoken slowly and deliberately, with a sense of foreboding:
p
mf
In the be-gin-ning was the word, and the word was
Voice
interaction computer audio
violins 1 2
viola
'cello
piano
Baroque flute
Baroque violin
harpsichord
alto sax in E♭
electric guitar
bass
drum kit
turntables
drum machine synthesizers
percussion 1
percussion 2

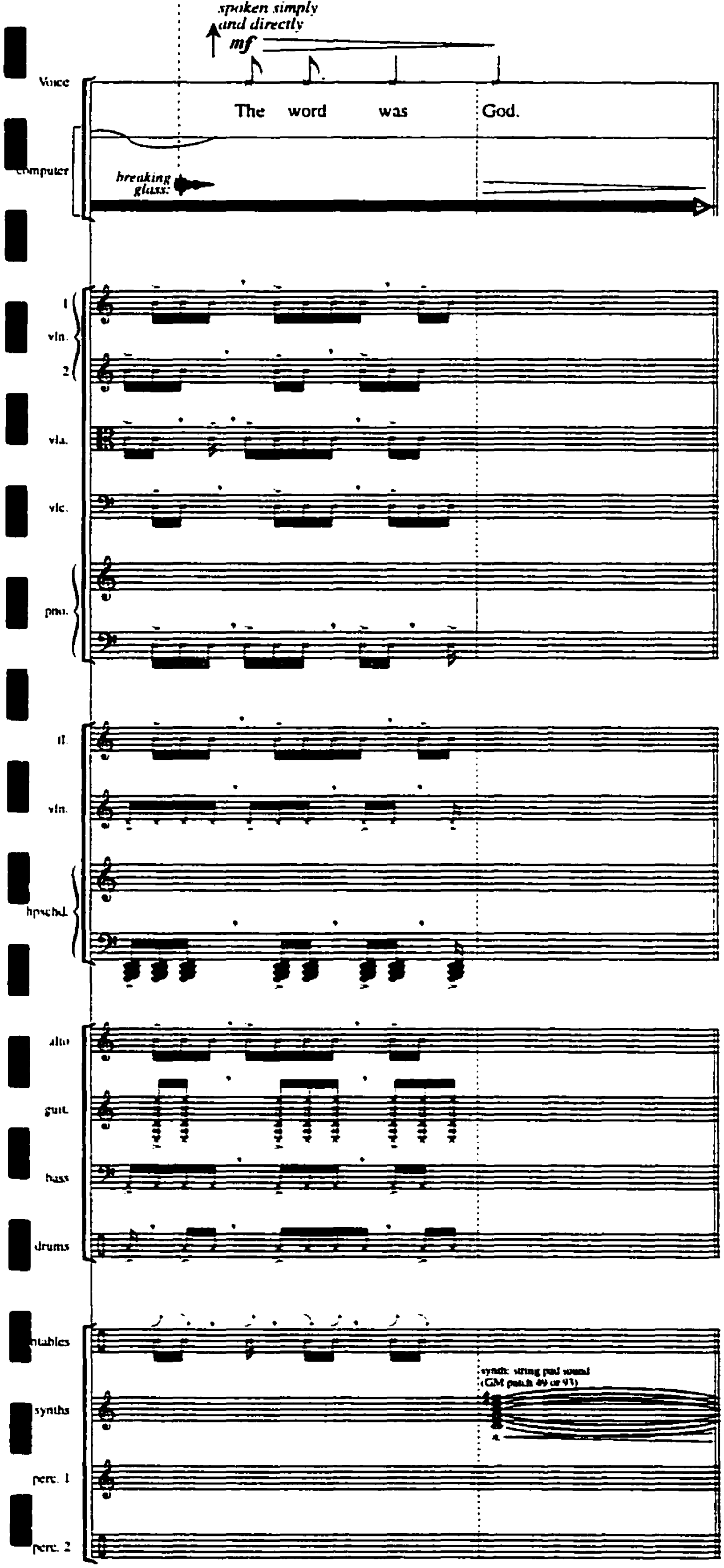

10"
fling arms open in a kind of "Ta-Daa!" gesture, making sure to pass through the D-Beam sensor area to trigger computer audio to begin
f
Voice
God!
improvise hand movements within the D-Beam sensor area
computer
breaking glass:
granular sounds
scraping sound, produced by placing excessive pressure on the bow
battuto col legno
vln.
1
2
f
mf
n.
scraping sound, produced by placing excessive pressure on the bow
battuto col legno
vla.
scraping sound, produced by placing excessive pressure on the bow
battuto col legno
vlc.
scraping sound, produced by placing excessive pressure on the bow
w/arm
l.v
scrape along the length of one of the wound strings inside piano, using a plectrum or a small piece of plastic
pno
Ped.
fl
vln.
hpschd.
alto
guit.
bass
drums
turntables
synths
perc. 1
perc. 2


10"
spoken softer, more sultry and sensual than before
mf
Le mot— était Dieu!
improvise, as before
breaking glass:
Voice
computer
vln. 1
vln. 2
vla.
vlc.
pizz
f
p
mp
pno.
play on the strings with a yarn mallet:
fl.
slap-tongue effect
vln.
sul pont
hpschd
alto
guit.
bass
drums
ntables
synths
perc. 1
perc. 2


10"
spoken harsher, more abrasive
f
Das Wort war Gott!
Voice
computer
breaking glass
1 vln. 2
vla.
vlc.
pno.
arco
f
mp
Ped.
fl.
vln.
hpschd.
w/arm
tr
alto
guit.
bass
drums
turntables
scratch source: percussion music
eg. Varese- Ionization or [illegible]
synths
perc. 1
perc. 2
vibraslap
l.v.
tom-toms

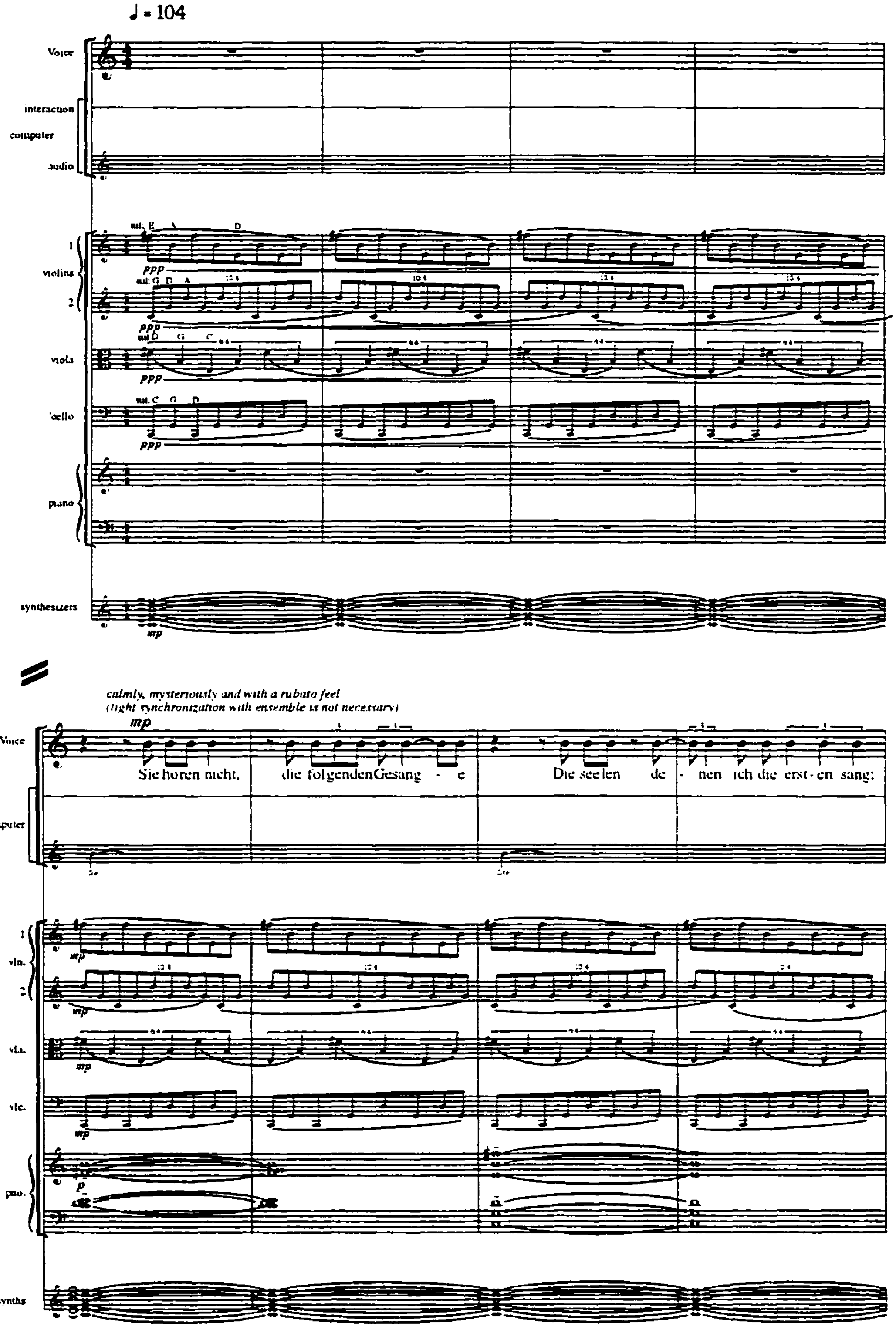
10"
spoken with passion and emotional intensity, torrid
mf
Voice
La pa-ro - la e-ra di - o!
computer
breaking glass:
vln. 1
vln. 2
gliss
f
mp
vla.
vlc.
pno
glissando on strings with soft mallet
Ped.
fl.
slow, wide vibrato
tr
vln.
hpschd.
alto
guit.
slide pick along lower strings
bass
slap
drums
l.v.
scrape
fp
mf
ntables
spin disk very slowly forwards
backwards
synths
perc. 1
perc. 2

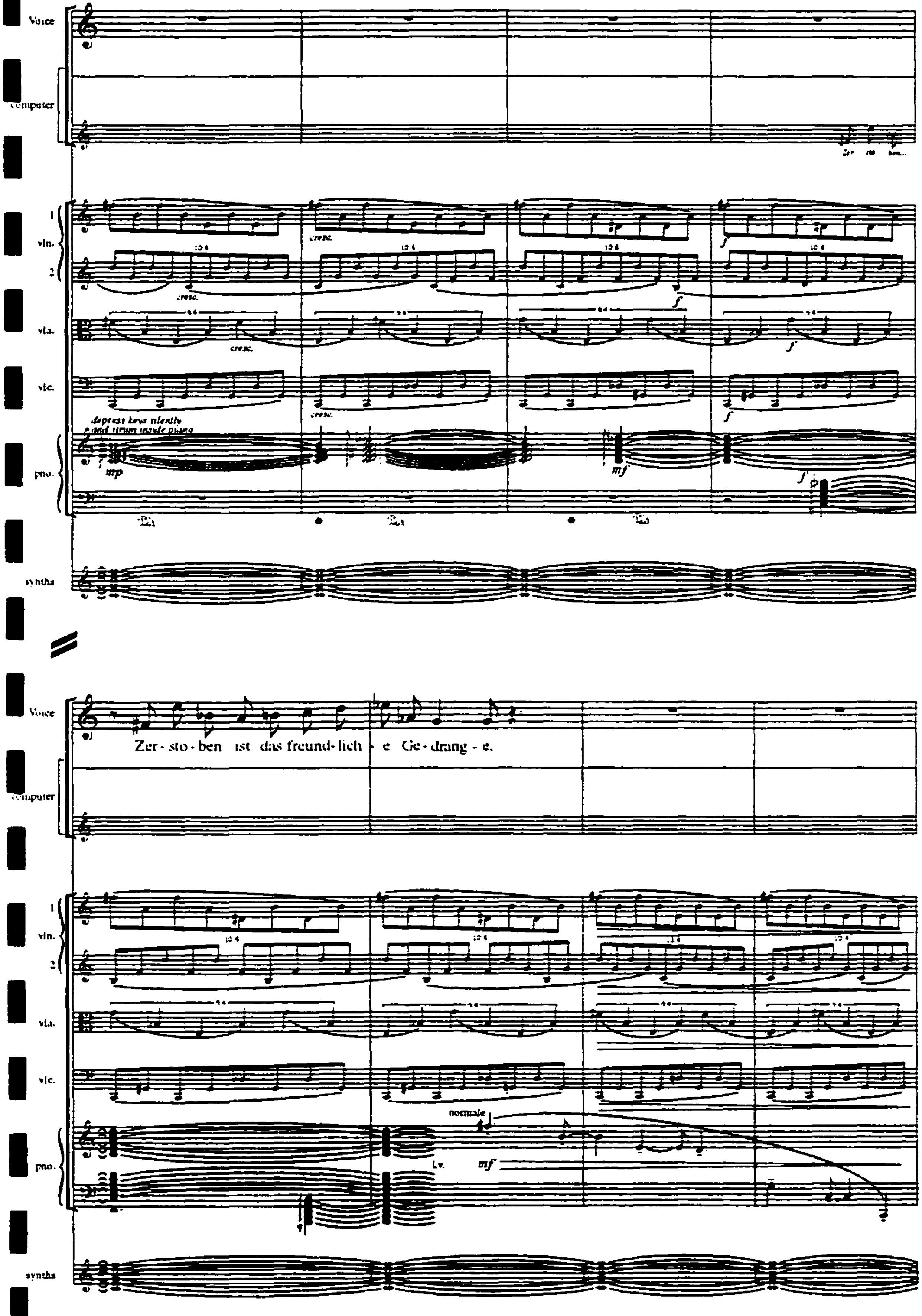

10"
spoken pointed, trenchant
Het woord was God!
Voice
computer
breaking glass:
1
vln.
2
vla.
vlc.
pno.
f
scrape along one of the wound strings inside piano with plectrum
mf
Ped
fl.
blow without producing pitch, with slap-tongue effect on accented notes
vln.
scraping sound, produced by placing excessive pressure on the bow
hpschd.
mf
alto
blow without producing pitch, with slap-tongue effect on accented notes
mf
guit.
muffle strings
mf
bass
slap
mf
drums
mf
turntables
scratch
synths
perc. 1
perc. 2

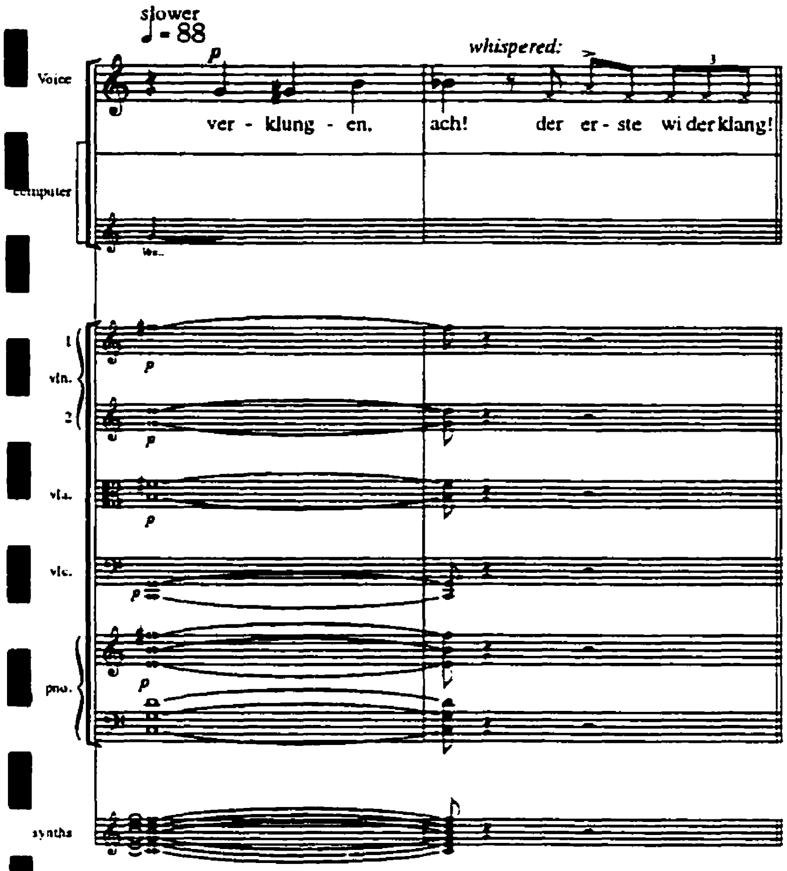

10"
spoken simply and directly
mf
Voice
The word was God.
computer
breaking glass:
vln. 1
vln. 2
vla.
vlc.
pno.
fl.
vln.
hpschd.
alto
guit.
bass
drums
tables
synths
synth: string pad sound (GM patch 49 or 93)
perc. 1
perc. 2

attacca II

II. Dedication

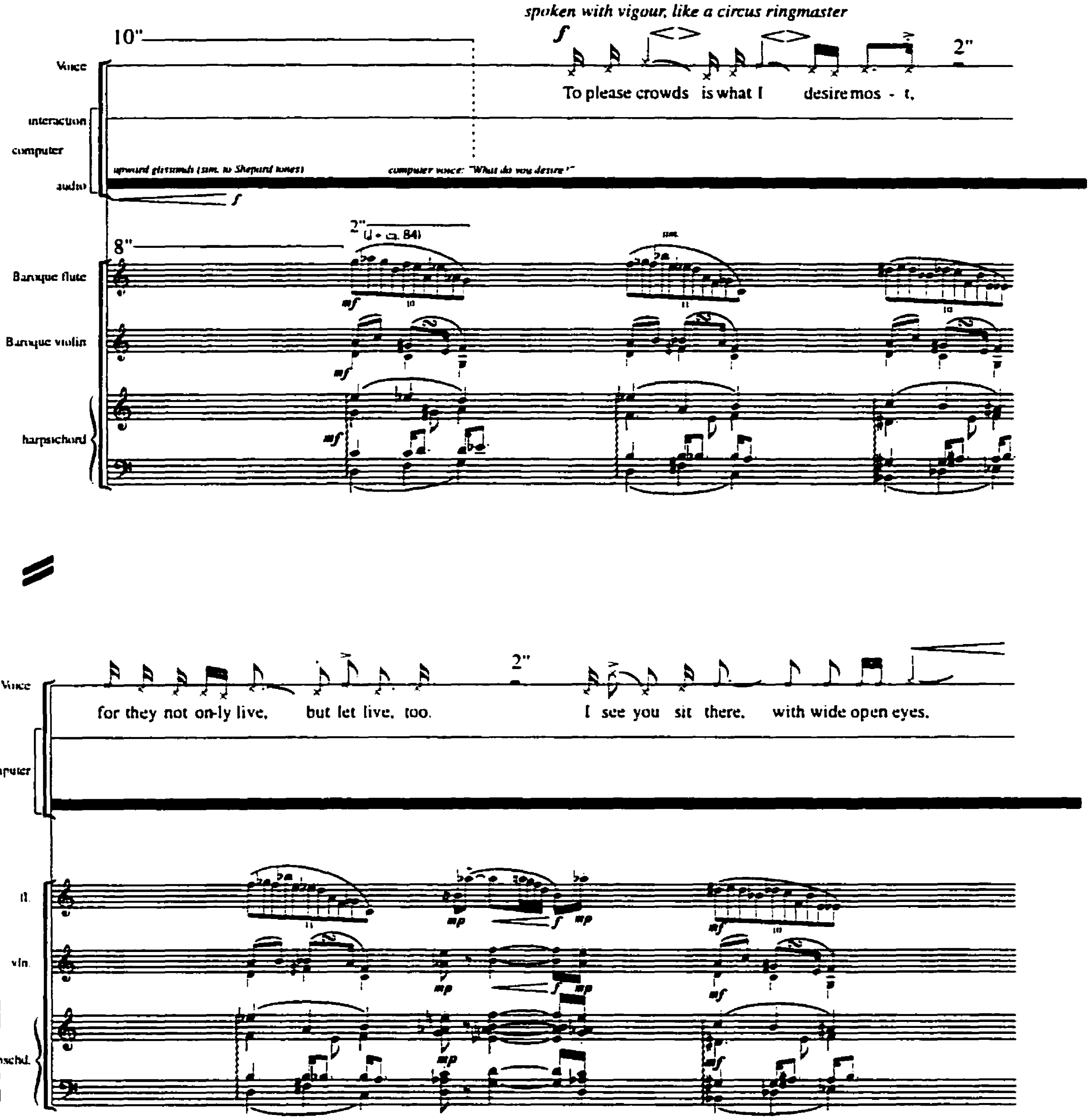

♩ = 104
Voice
interaction
computer
audio
violins
1
2
viola
'cello
piano
synthesizers
sul E A D
sul G D A
sul D G C
sul C G D
ppp
mp
calmly, mysteriously and with a rubato feel
(tight synchronization with ensemble is not necessary)
Sie horen nicht, die folgenden Gesang - e
Die seelen de - nen ich die erst - en sang;
computer
vln.
vla.
vlc.
pno.
p
synths

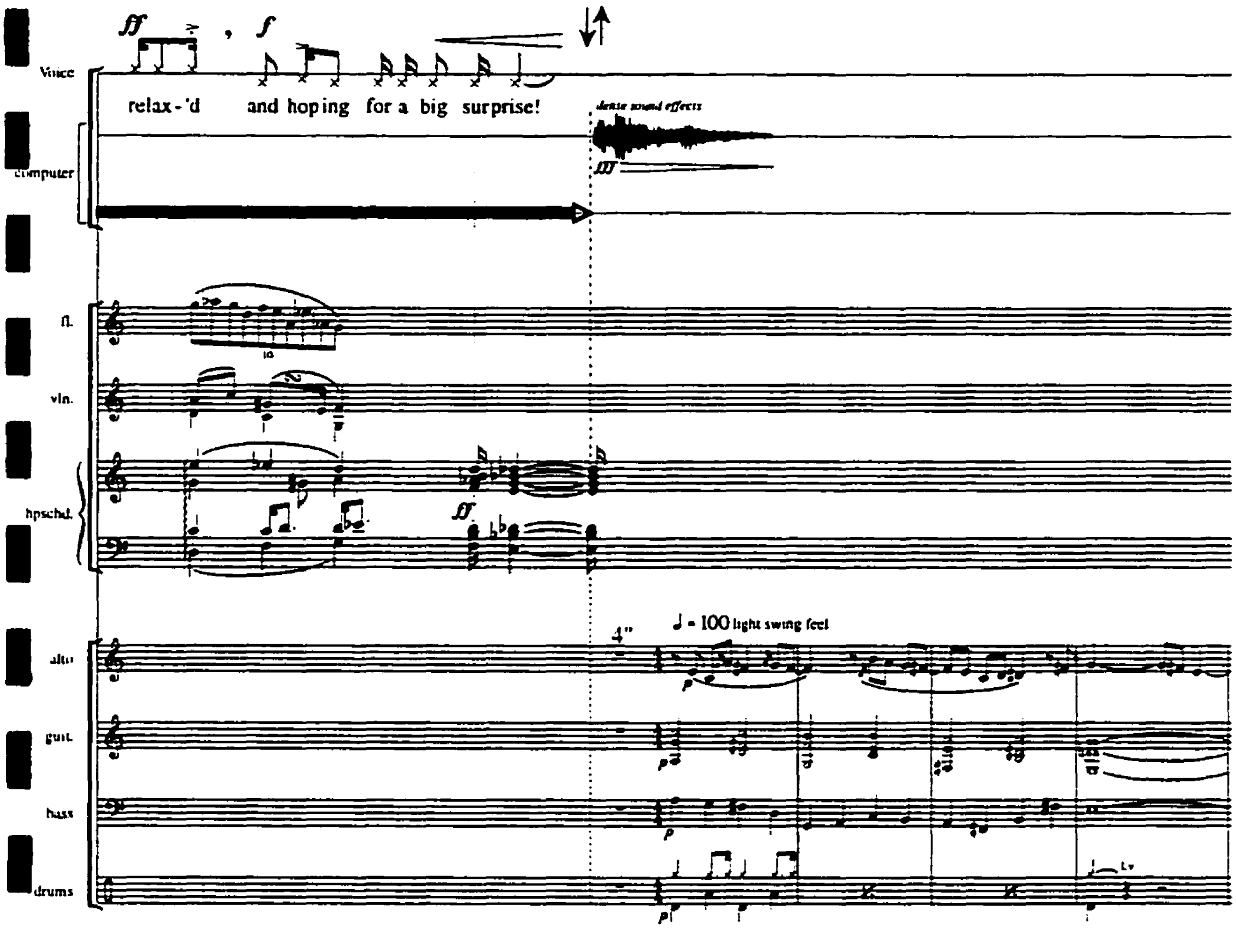

Voice
computer
Zer- sto- ben...
1
vln.
2
vla.
vlc.
pno.
synths
cresc.
cresc.
cresc.
cresc.
f
f
f
f
depress keys silently and strum inside piano
mp
mf
f
Voice
Zer- sto- ben ist das freund- lich - e Ge- drang - e.
computer
vln.
vla.
vlc.
pno.
normale
l.v.
mf
synths

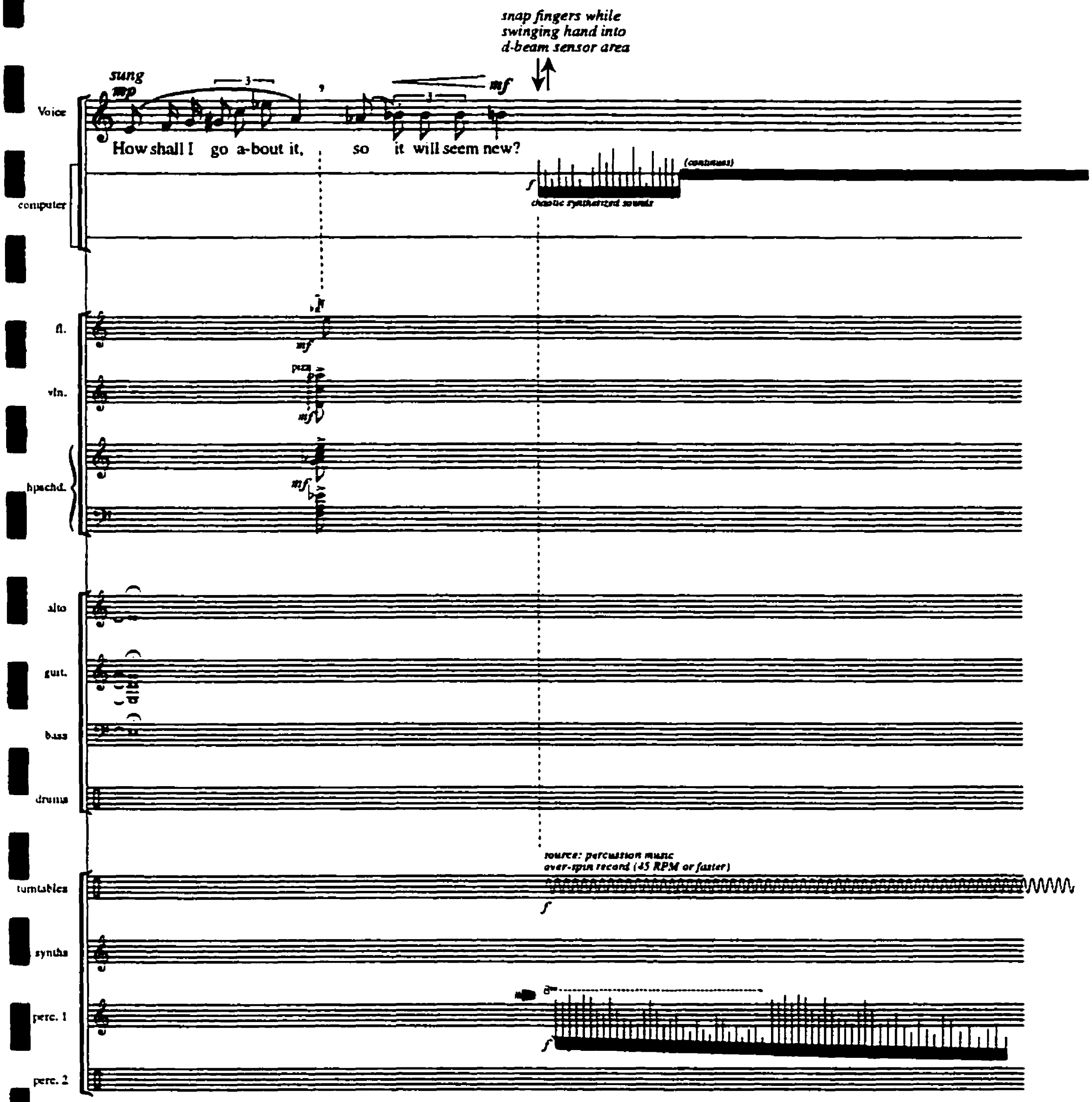

slower
♩ = 88
p
whispered:
Voice
ver - klung - en. ach! der er - ste wi der klang!
computer
vln.
1
2
vla.
vlc.
pno.
synths

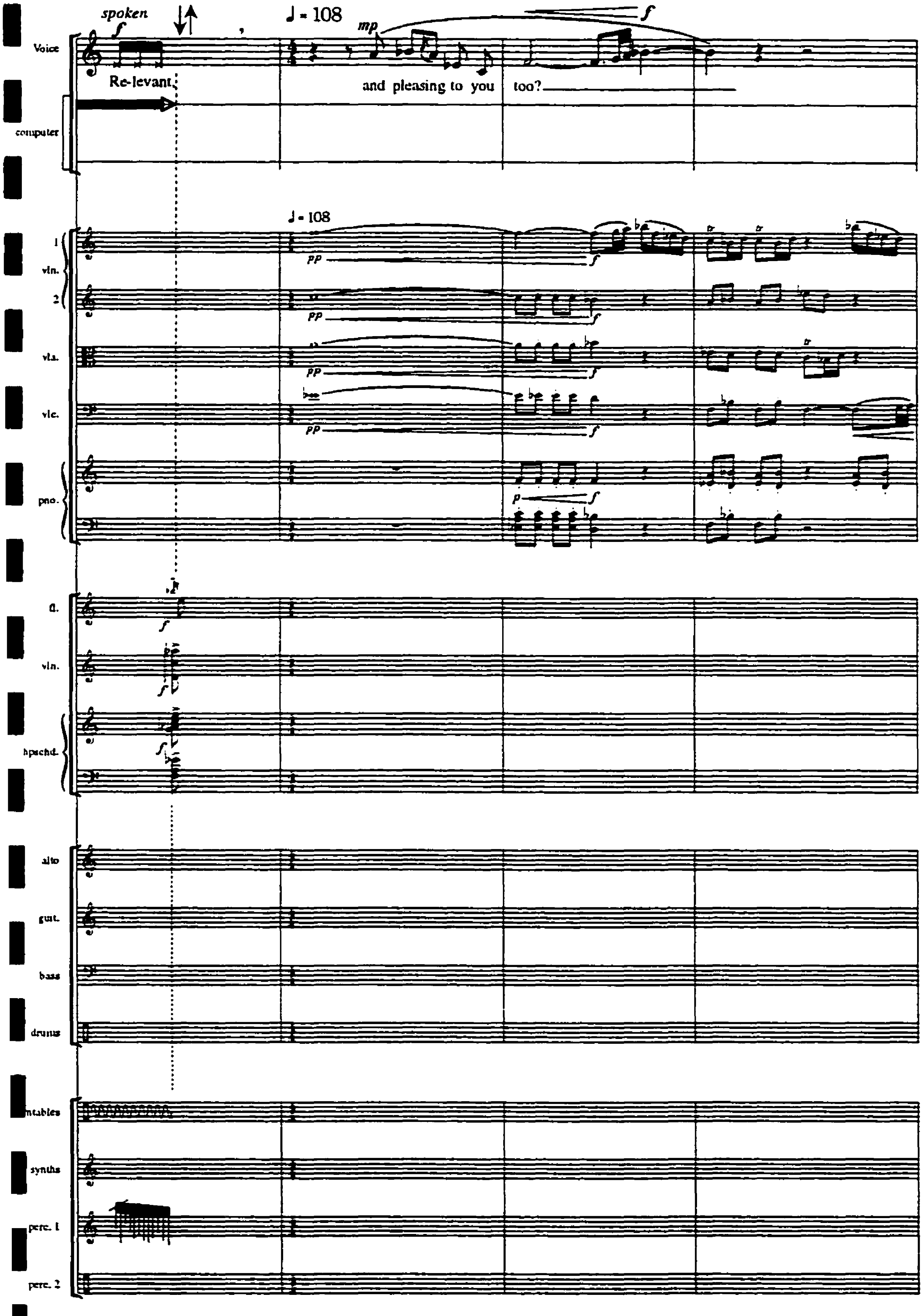
attacca III

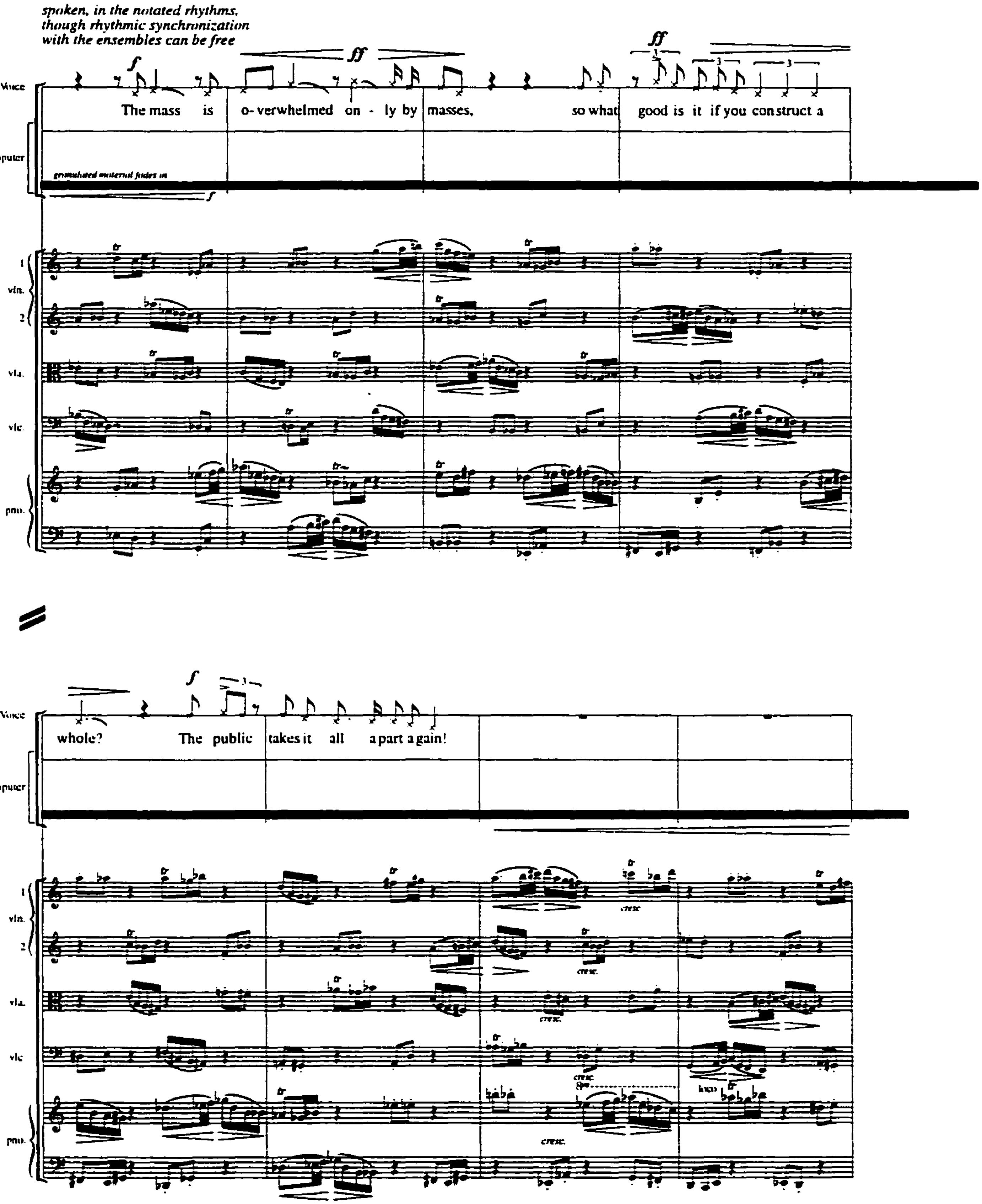
III. Prologue: In the Theatre

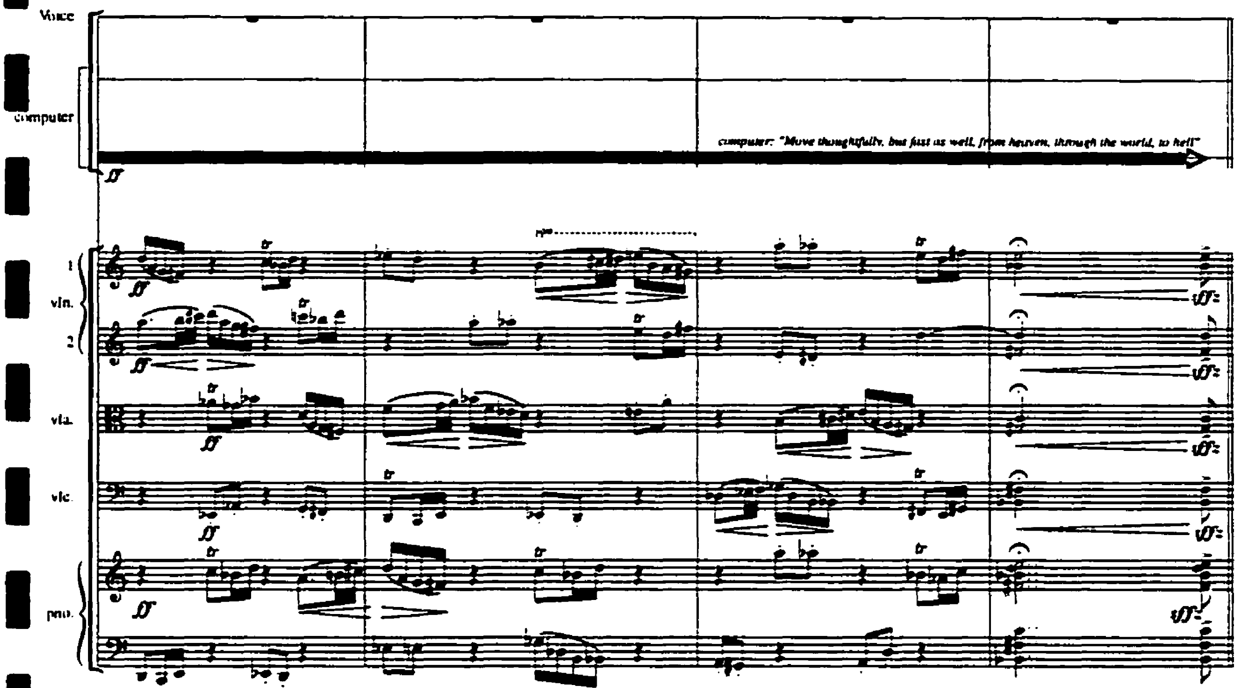

spoken with vigour, like a circus ringmaster
10"
2"
Voice
To please crowds is what I desire mos - t,
interaction
computer
audio
upward glissandi (sim. to Shepard tones)
computer voice: "What do you desire?"
8"
2" (♩ = ca. 84)
Baroque flute
Baroque violin
harpsichord
for they not on-ly live, but let live, too.
I see you sit there, with wide open eyes.
computer
fl.
vln.
hpschd.


ff
f
Voice
relax-'d and hoping for a big surprise!
dense sound effects
computer
fff
fl.
10
vln.
hpschd.
ff
alto
4"
♩ = 100 light swing feel
p
guit.
bass
drums
l.v.


snap fingers while
swinging hand into
d-beam sensor area
sung
mp
3
mf
3
How shall I go a-bout it, so it will seem new?
Voice
computer
(continues)
f
chaotic synthesized sounds
fl.
mf
vln.
pizz.
mf
hpschd.
mf
alto
guit.
bass
drums
source: percussion music
over-spin record (45 RPM or faster)
turntables
f
synths
perc. 1
f
perc. 2

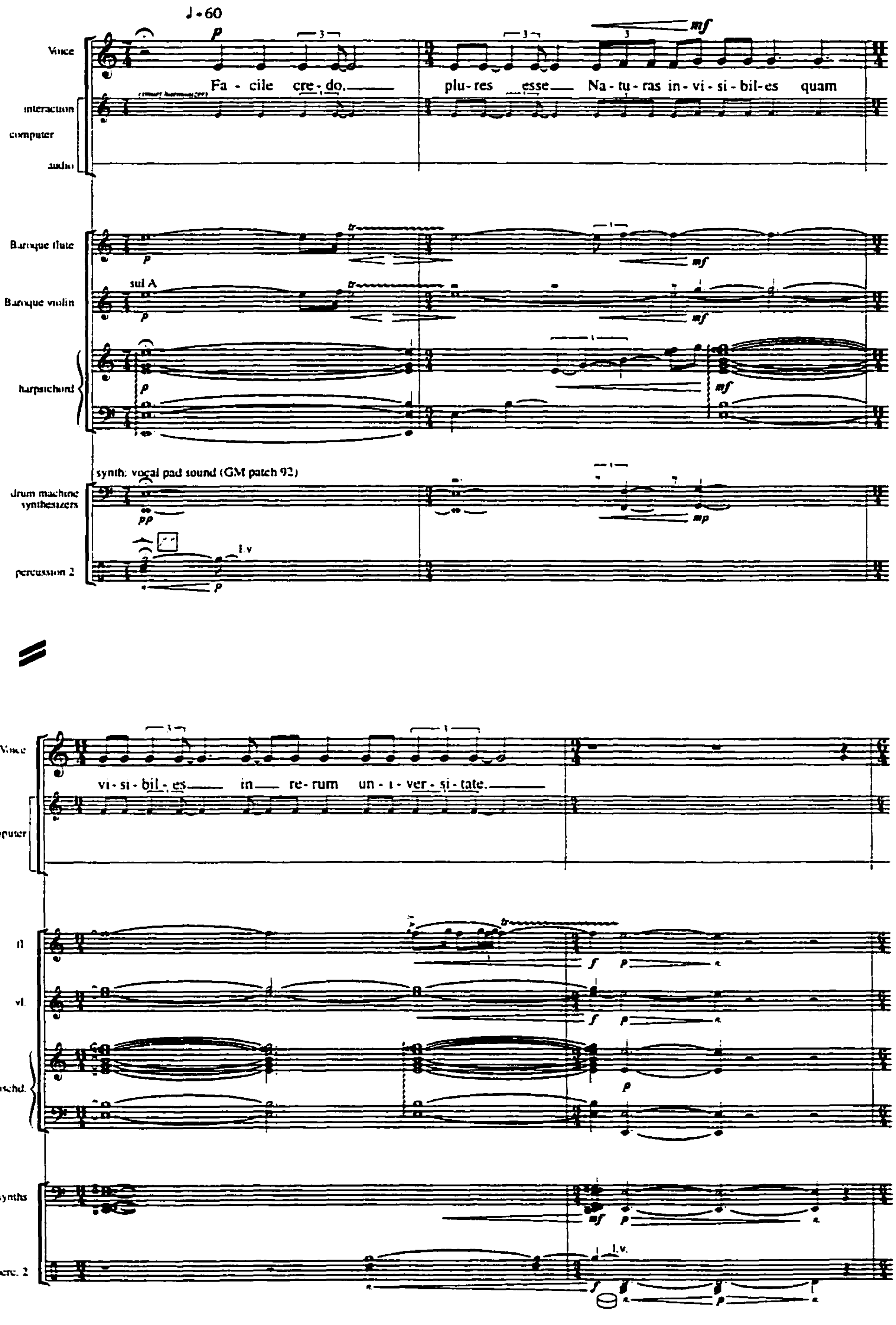

spoken
f
Re-levant:
♩ = 108
mp
f
and pleasing to you
too?
Voice
computer
♩ = 108
pp
f
1
vln.
2
vla.
vlc.
pno.
p
fl.
vln.
hpschd.
alto
guit.
bass
drums
ntables
synths
perc. 1
perc. 2

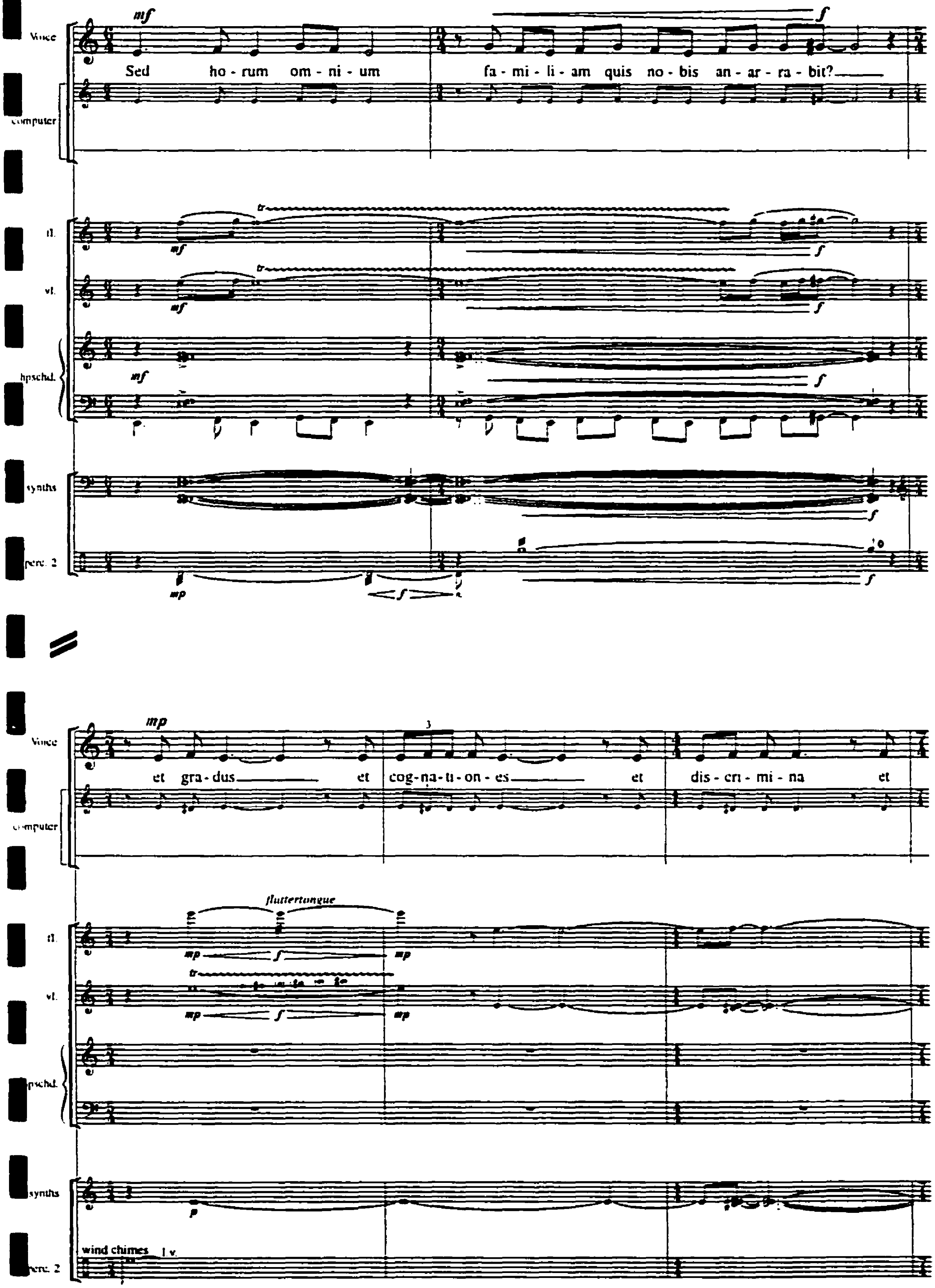

spoken, in the notated rhythms, though rhythmic synchronization with the ensembles can be free
Voice
computer
granulated material fades in
f
ff
ff
The mass is o-verwhelmed on - ly by masses, so what good is it if you construct a
vln. 1
vln. 2
vla.
vlc.
pno.
tr
whole? The public takes it all apart again!
cresc.
loco

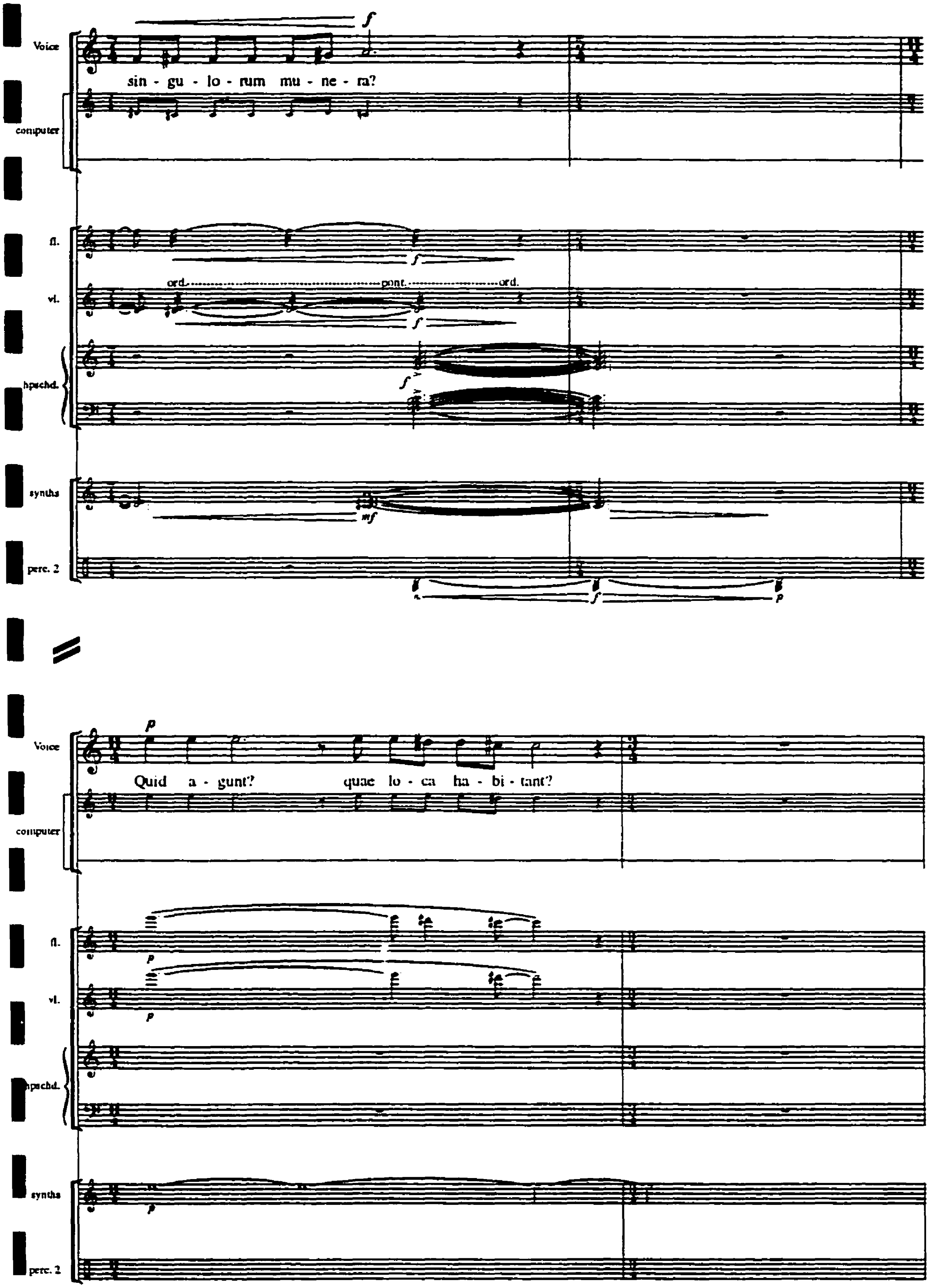

Voice
computer
computer: "Move thoughtfully, but just as well, from heaven, through the world, to hell"
ff
1
vln.
2
vla.
vlc.
pno.
ff
tr
fff

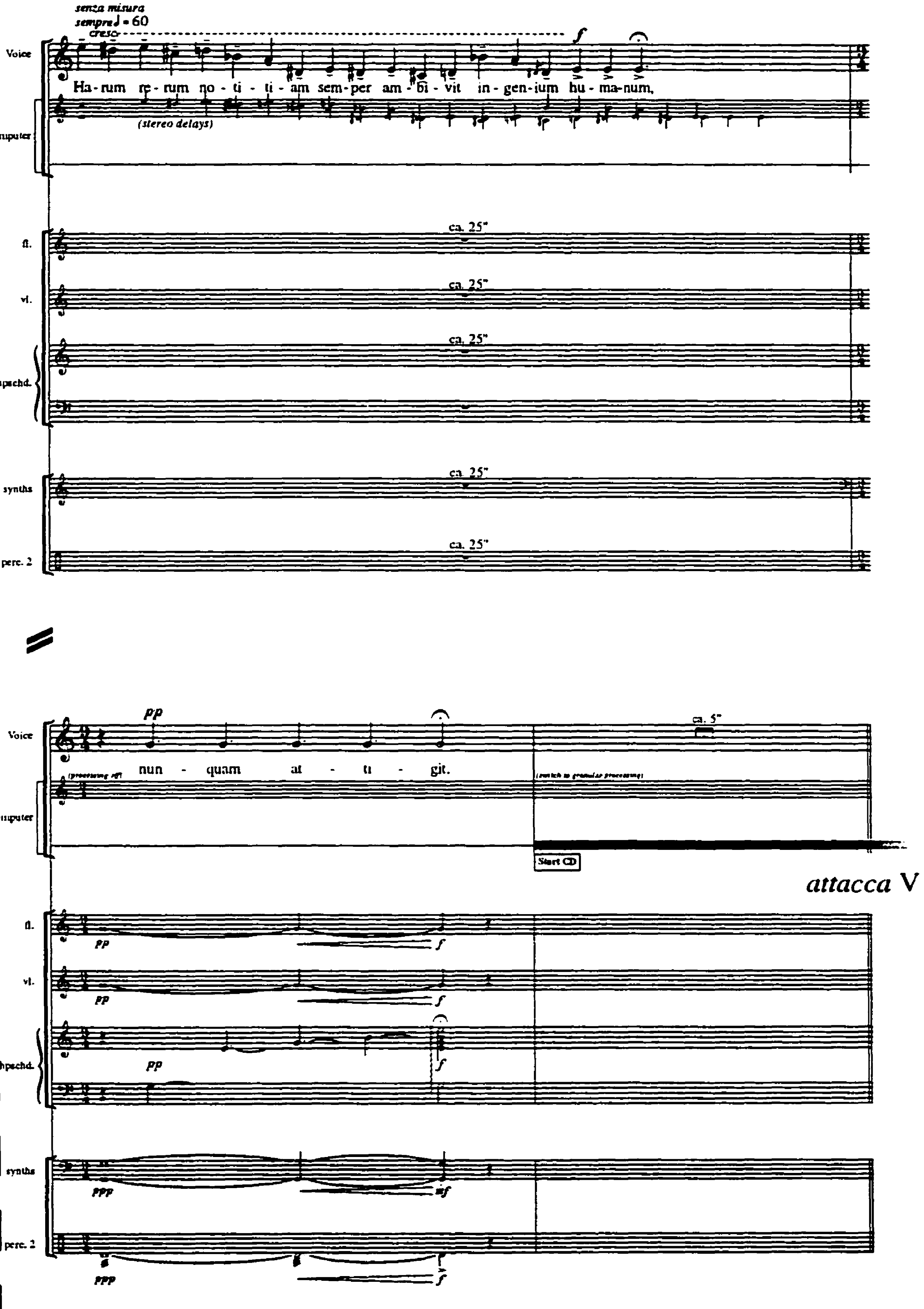
Pause before IV

IV. Prelude: *Facile Credo*

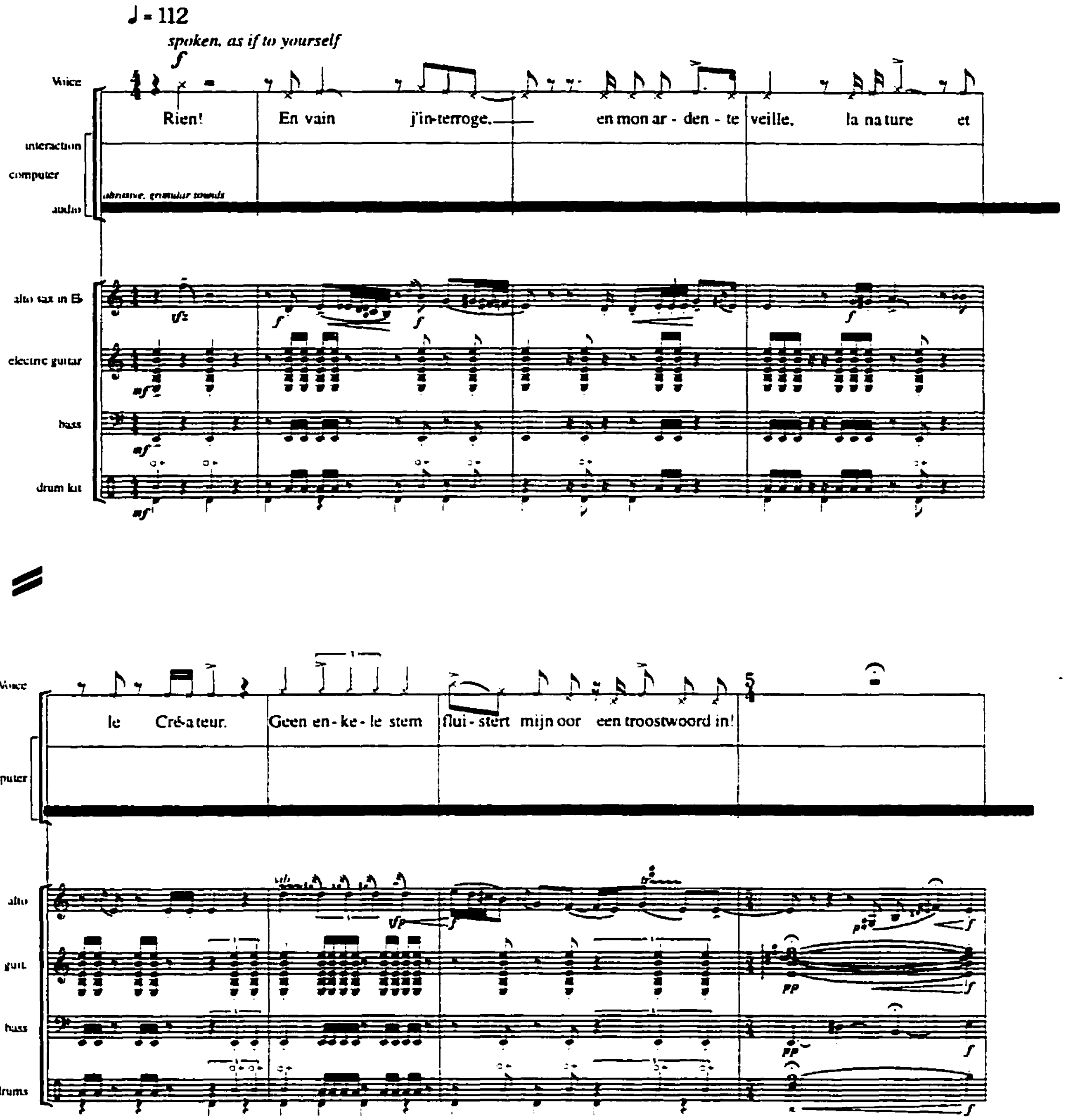

♩= 60
Voice
interaction
computer
audio
Baroque flute
Baroque violin
sul A
harpsichord
drum machine synthesizers
synth: vocal pad sound (GM patch 92)
percussion 2
l.v.
Fa - cile cre - do.
plu - res esse Na - tu - ras in - vi - si - bil - es quam
vi - si - bil - es in re - rum un - i - ver - si - tate.
Voice
computer
fl.
vl.
hpschd.
synths
perc. 2
l.v.
p
mf
pp
mp
f
tr

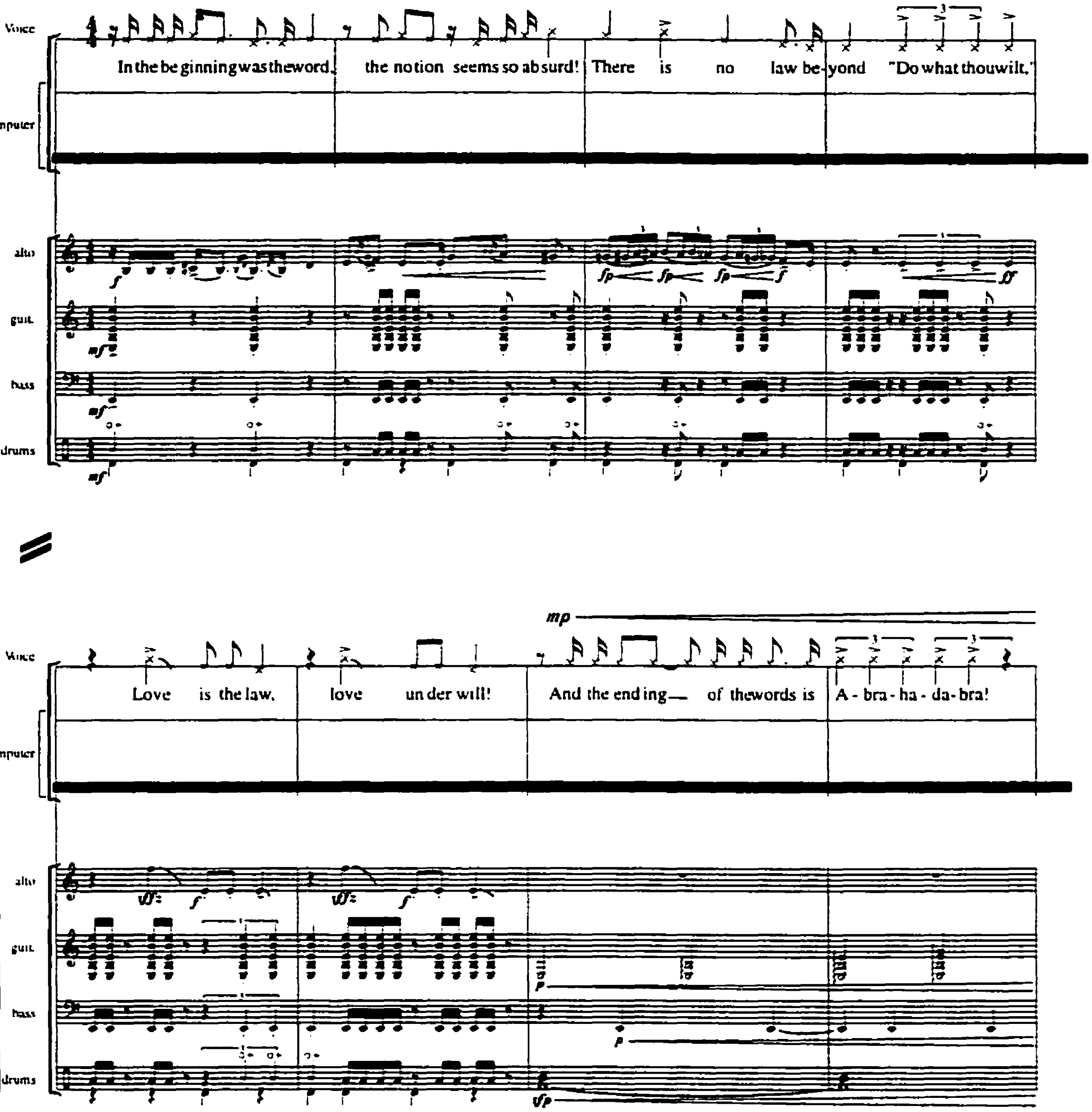
Voice
computer
fl.
vl.
hpschd.
synths
perc. 2
mf
Sed ho - rum om - ni - um fa - mi - li - am quis no - bis an - ar - ra - bit?
f
tr
mf
f
tr
mf
f
mf
f
mp
f
f
mp
et gra - dus et cog - na - ti - on - es et dis - cri - mi - na et
3
fluttertongue
mp
f
mp
tr
mp
f
mp
p
wind chimes
l.v.

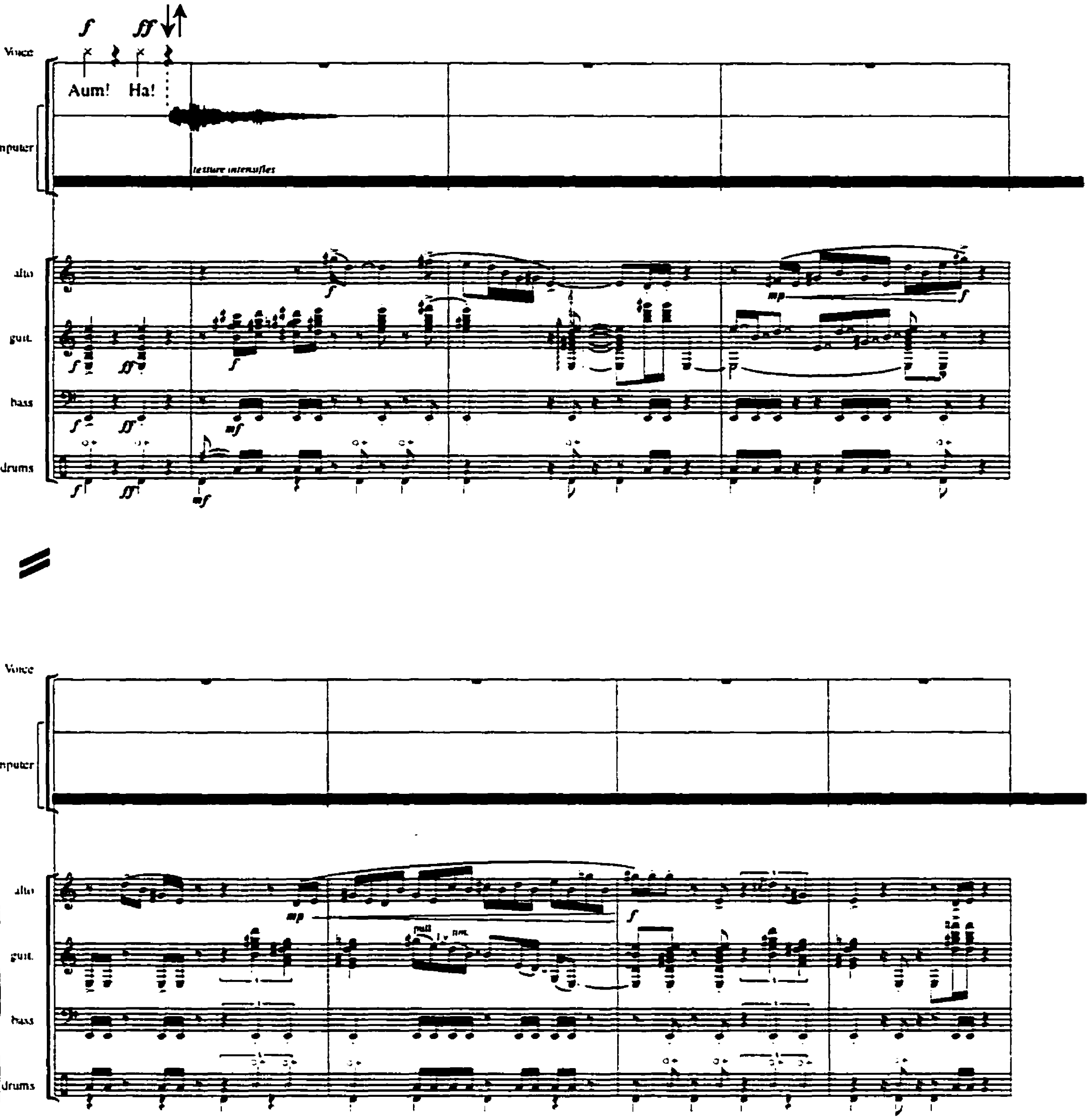

Voice
computer
fl.
vl.
hpschd.
synths
perc. 2
sin - gu - lo - rum mu - ne - ra?
f
ord.
pont.
ord.
f
f
mf
f
p
Quid a - gunt? quae lo - ca ha - bi - tant?
p
p
p
p


senza misura
sempre ♩ = 60
cresc.
f
Voice
Ha-rum re-rum no-ti-ti-am sem-per am-bi-vit in-gen-ium hu-ma-num,
computer
(stereo delays)
fl.
ca. 25"
vl.
ca. 25"
hpschd.
ca. 25"
synths
ca. 25"
perc. 2
ca. 25"
Voice
pp
nun - quam at - ti - git.
ca. 5"
computer
(processing off)
(switch to granular processing)
Start CD
attacca V
fl.
pp
f
vl.
pp
f
hpschd.
pp
f
synths
ppp
mf
perc. 2
ppp
f

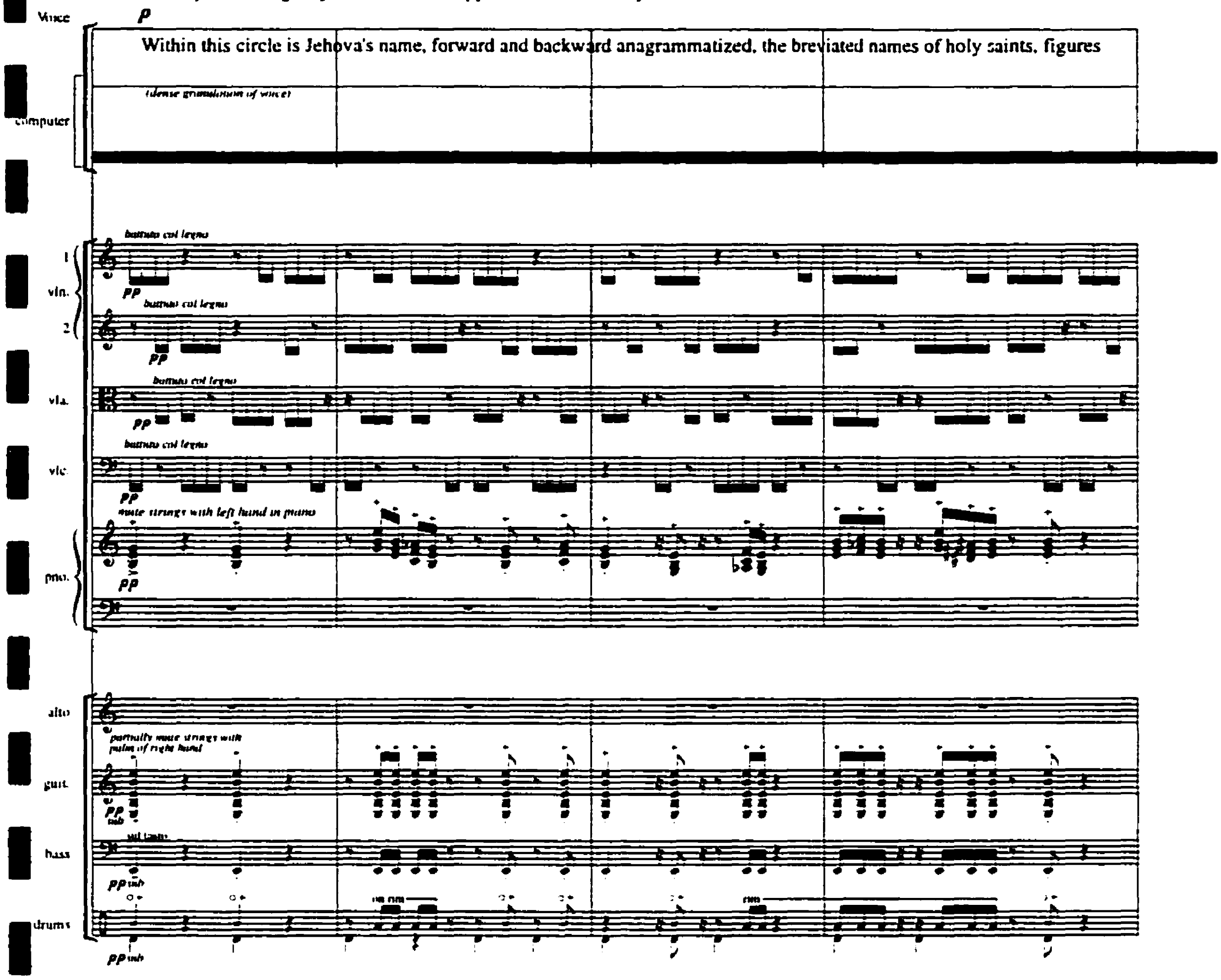
V. Incantations

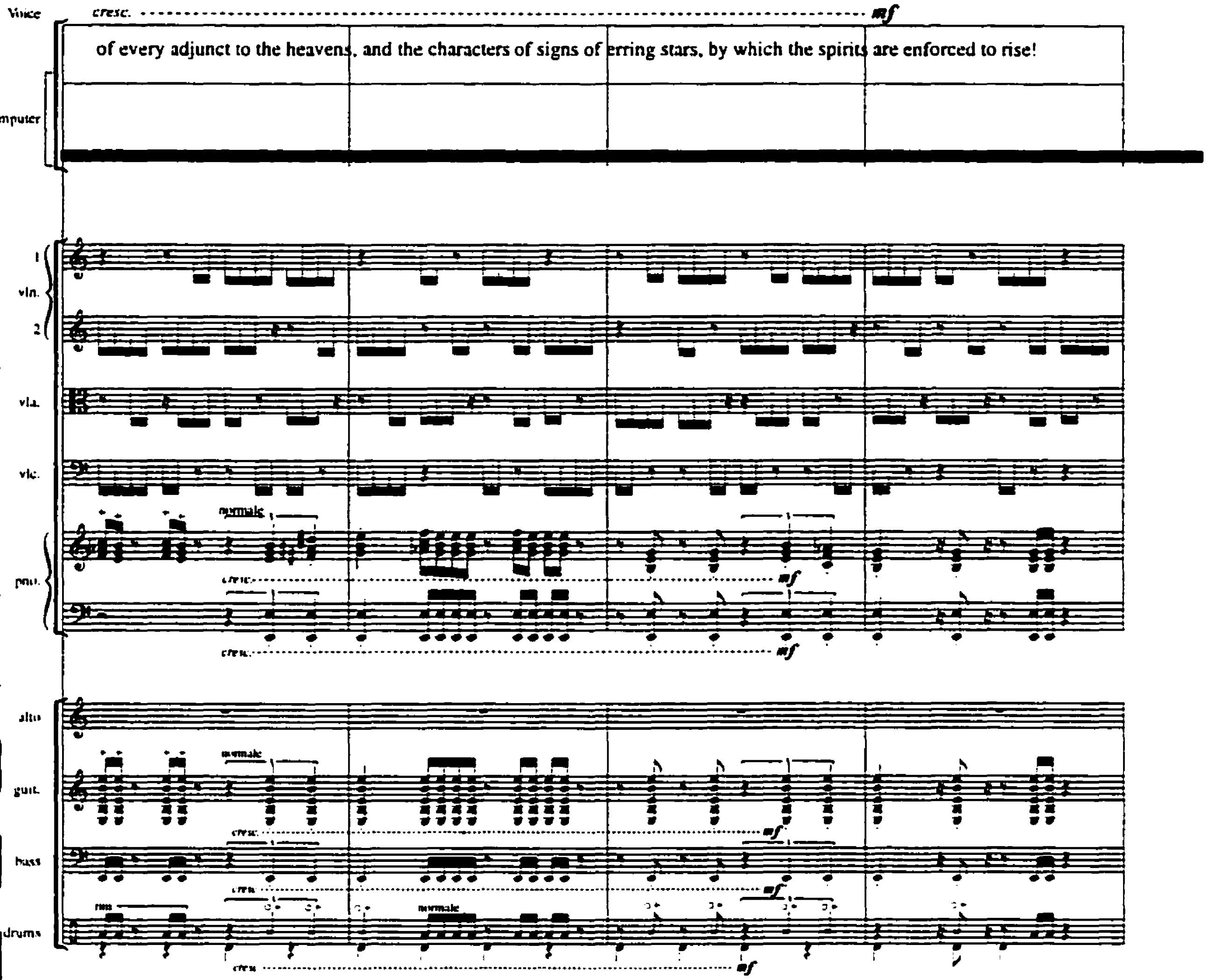

♩ = 112
spoken, as if to yourself
Voice
Rien! En vain j'in-terroge, en mon ar - den - te veille, la na ture et
interaction
computer
audio
vibrative, granular sounds
alto sax in E♭
electric guitar
bass
drum kit
Voice
le Cré-a teur. Geen en - ke - le stem flui - stert mijn oor een troostwoord in!
computer
alto
guit.
bass
drums

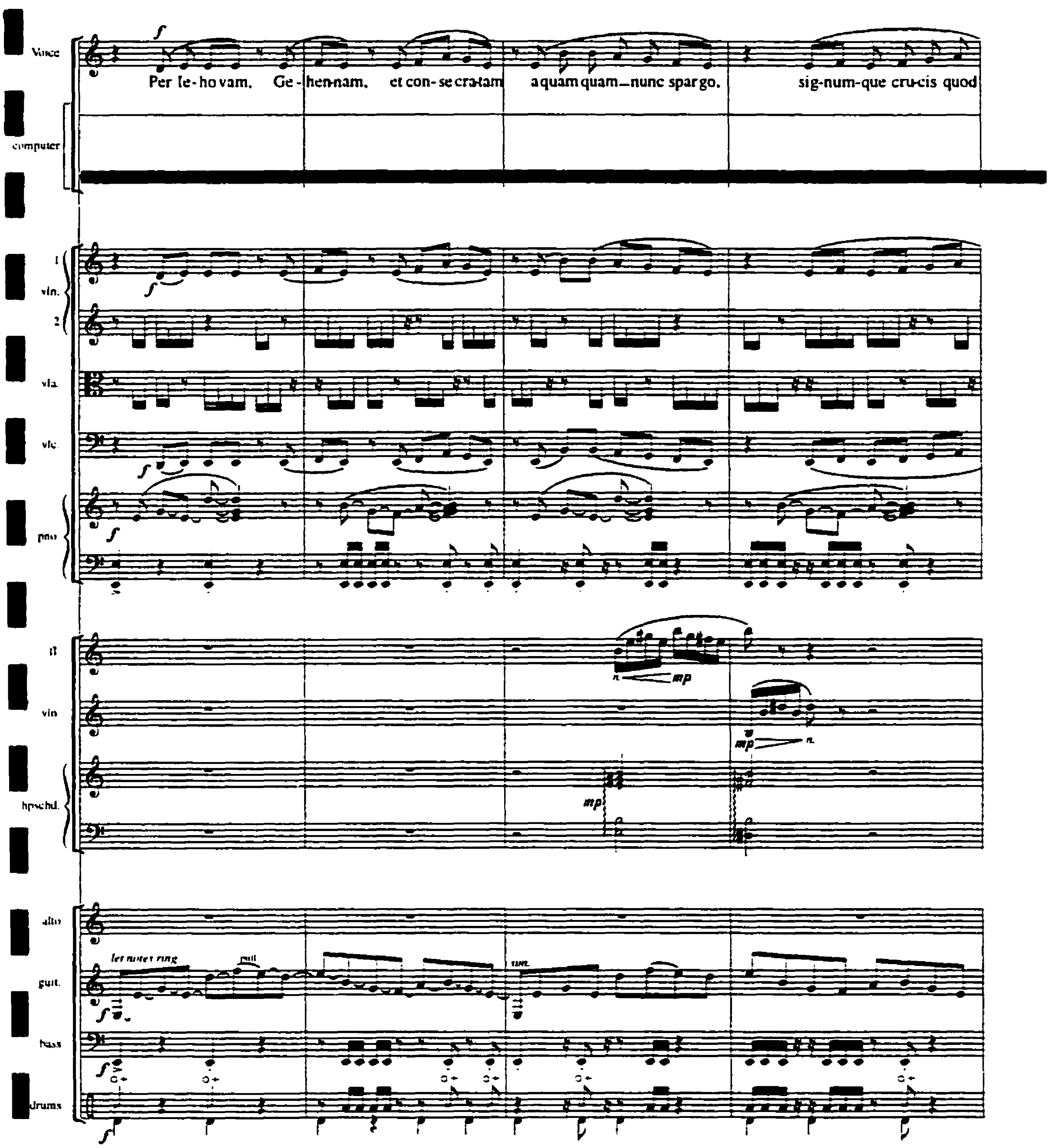

Voice
computer
alto
guit.
bass
drums
In the beginning was the word, the notion seems so absurd! There is no law beyond "Do what thou wilt,"
Love is the law, love under will! And the ending— of the words is A-bra-ha-da-bra!
mf
f
fp
ff
sff
mp
p
sfp

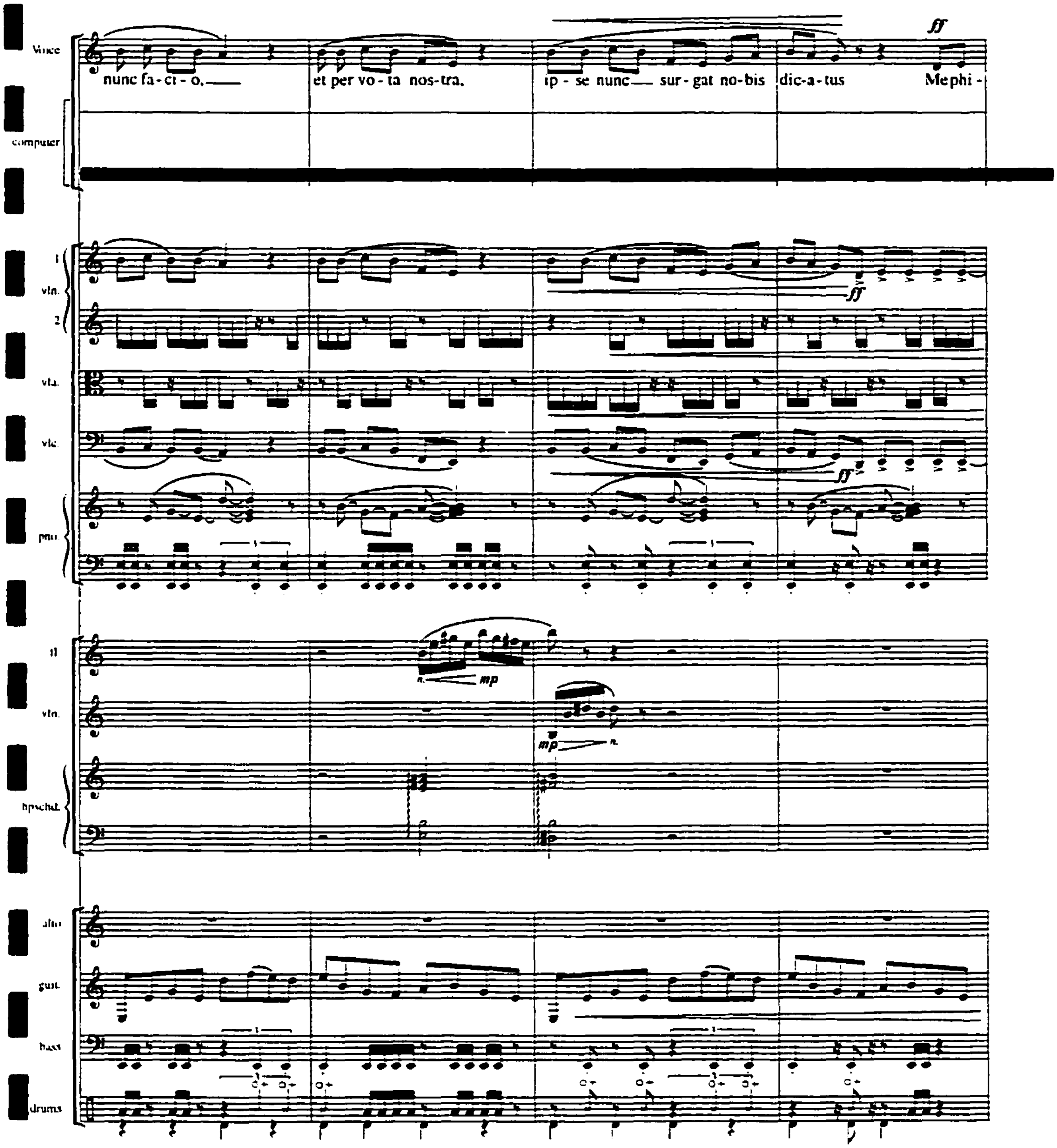

f
ff
Voice
Aum!
Ha!
computer
texture intensifies
alto
guit.
bass
drums
f
ff
mf
mp
f
Voice
computer
alto
guit.
bass
drums
mp
pull
harm.
f

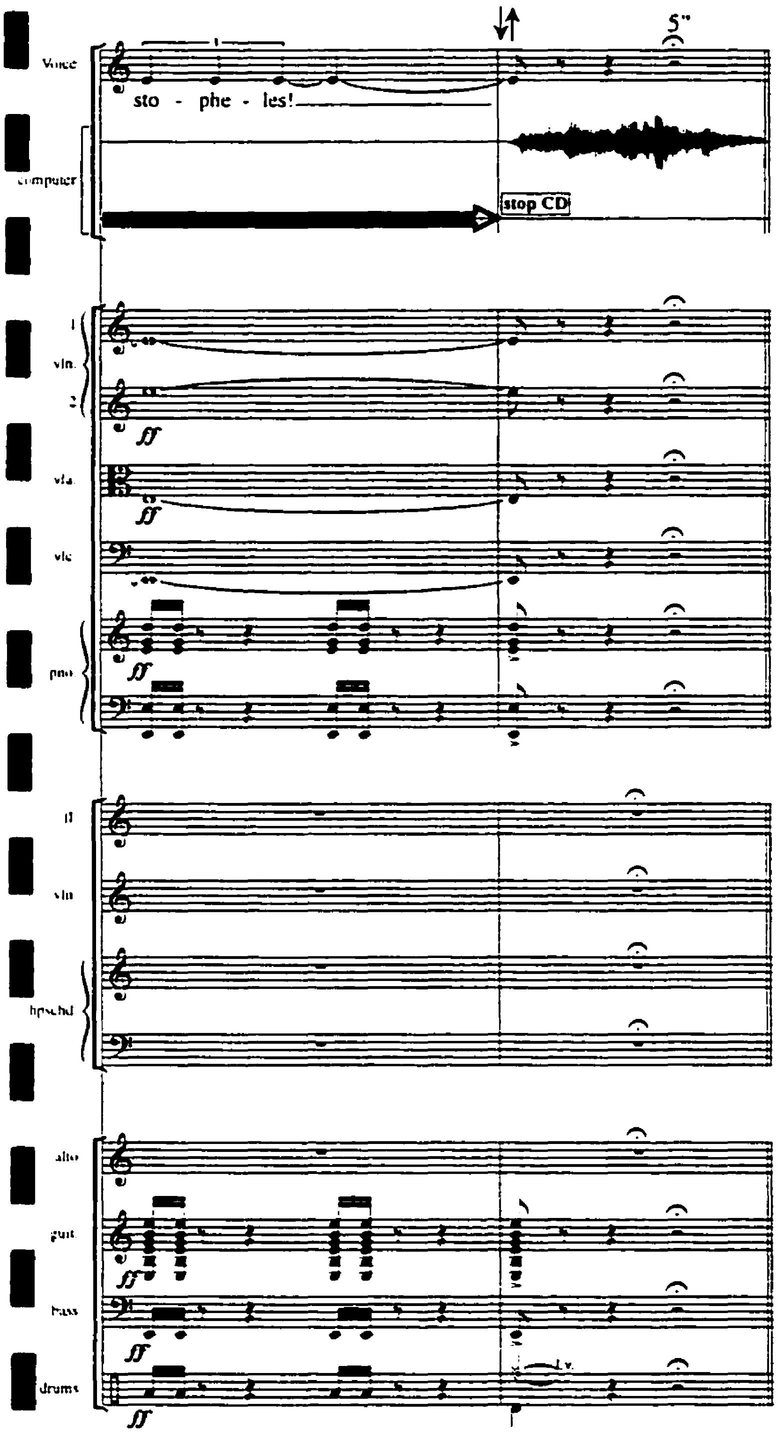
spoken, more freely than before
(not in rhythm, though try to maintain an approximate vertical syncronization)


Voice
p
Within this circle is Jehova's name, forward and backward anagrammatized, the breviated names of holy saints, figures
computer
(dense granulation of voice)
vln. 1
vln. 2
battuto col legno
pp
vla.
vlc.
mute strings with left hand in piano
pno.
alto
partially mute strings with palm of right hand
guit.
bass
drums
pp sub
rim


Voice
cresc.
mf
of every adjunct to the heavens, and the characters of signs of erring stars, by which the spirits are enforced to rise!
computer
1
vln.
2
vla.
vlc.
pno.
normale
cresc.
mf
alto
guit.
normale
cresc.
mf
bass
cresc.
mf
drums
rim
normale
cresc.
mf


Voice
Per Ie-ho vam. Ge-hen-nam. et con-se cra-tam a quam quam_nunc spar go. sig-num-que cru-cis quod
computer
1
vln.
2
vla.
vlc.
pno
fl
vln
hpschd.
alto
guit.
bass
drums
f
mp
n.
let notes ring
pull
uni.


Voice
nunc fa-ci-o,
et per vo-ta nos-tra,
ip-se nunc sur-gat no-bis
dic-a-tus
Mephi-
ff
computer
1
vln.
2
vla.
vlc.
pno.
fl
vln.
mp
hpschd.
alto
guit.
bass
drums



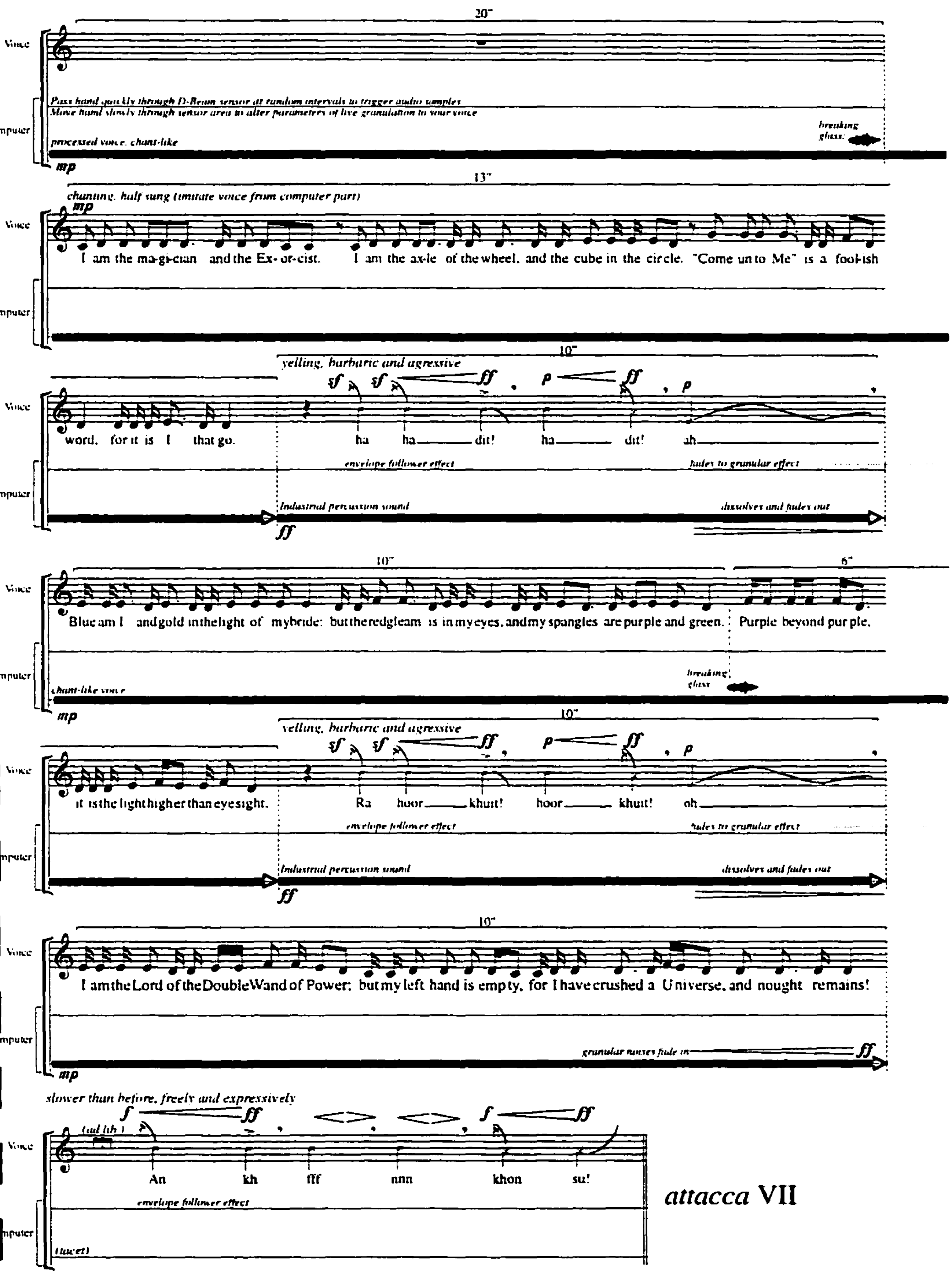
5"
Voice
sto - phe - les!
computer
stop CD
1
vln.
2
ff
vla.
ff
vlc
pno
ff
fl
vln
hpschd
alto
guit
ff
bass
ff
drums
l.v.
ff

attacca VI

VI. Mephistopheles

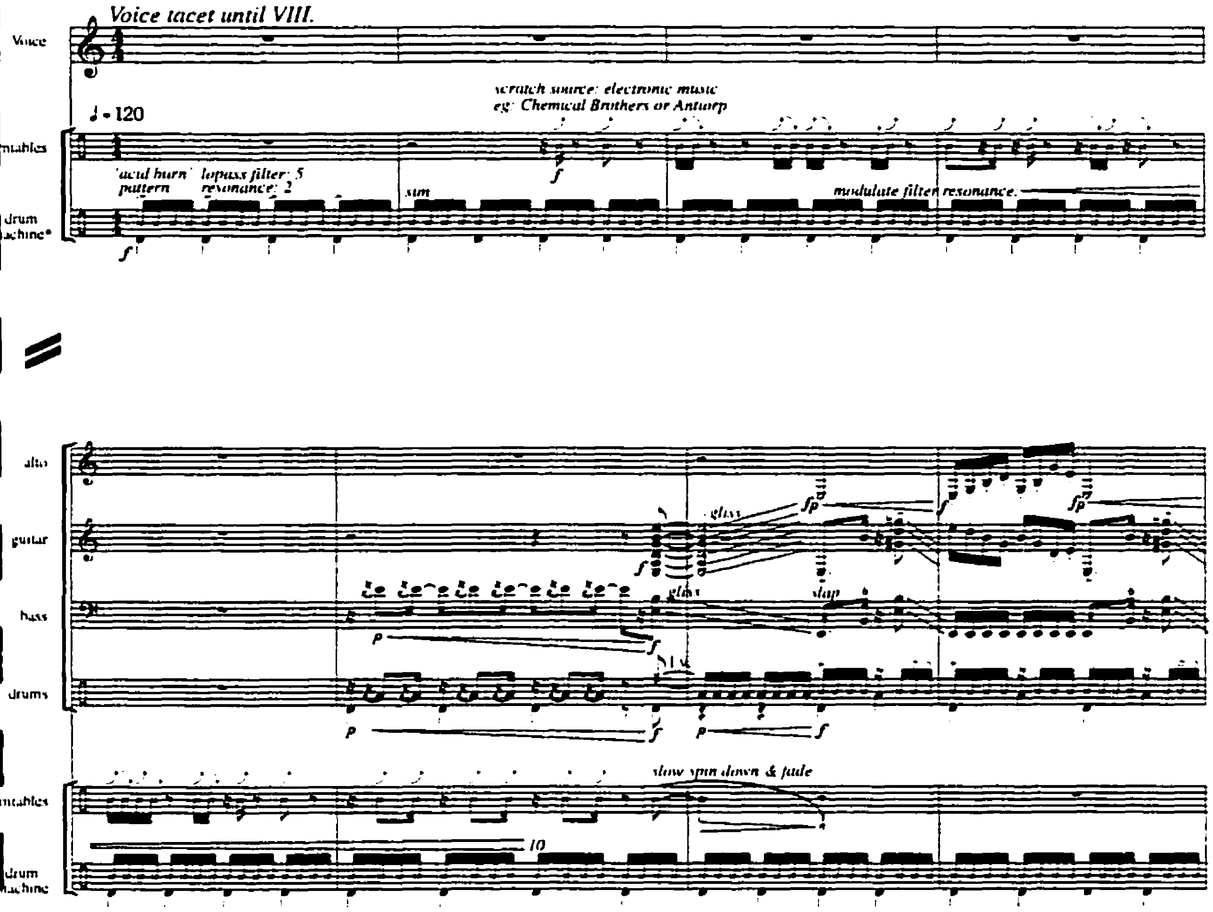
voice and computer solo

(ensembles tacet)


Voice
Computer
20"
Pass hand quickly through D-Beam sensor at random intervals to trigger audio samples
Move hand slowly through sensor area to alter parameters of live granulation to your voice
processed voice, chant-like
breaking glass:
mp
13"
chanting, half sung (imitate voice from computer part)
mp
I am the magician and the Ex-or-cist. I am the ax-le of the wheel, and the cube in the circle. "Come unto Me" is a foolish
word, for it is I that go.
10"
yelling, barbaric and agressive
sf sf ff p ff p
ha ha dit! ha dit! ah
envelope follower effect
fades to granular effect
Industrial percussion sound
dissolves and fades out
ff
10"
Blue am I and gold in the light of my bride: but the red gleam is in my eyes, and my spangles are purple and green.
6"
Purple beyond purple,
breaking glass
chant-like voice
mp
it is the light higher than eyesight.
10"
yelling, barbaric and agressive
sf sf ff p ff p
Ra hoor khuit! hoor khuit! oh
envelope follower effect
fades to granular effect
Industrial percussion sound
dissolves and fades out
ff
10"
I am the Lord of the Double Wand of Power: but my left hand is empty, for I have crushed a Universe, and nought remains!
granular noises fade in
ff
mp
slower than before, freely and expressively
f ff f ff
(ad lib.)
An kh fff nnn khon su!
envelope follower effect
(tacet)

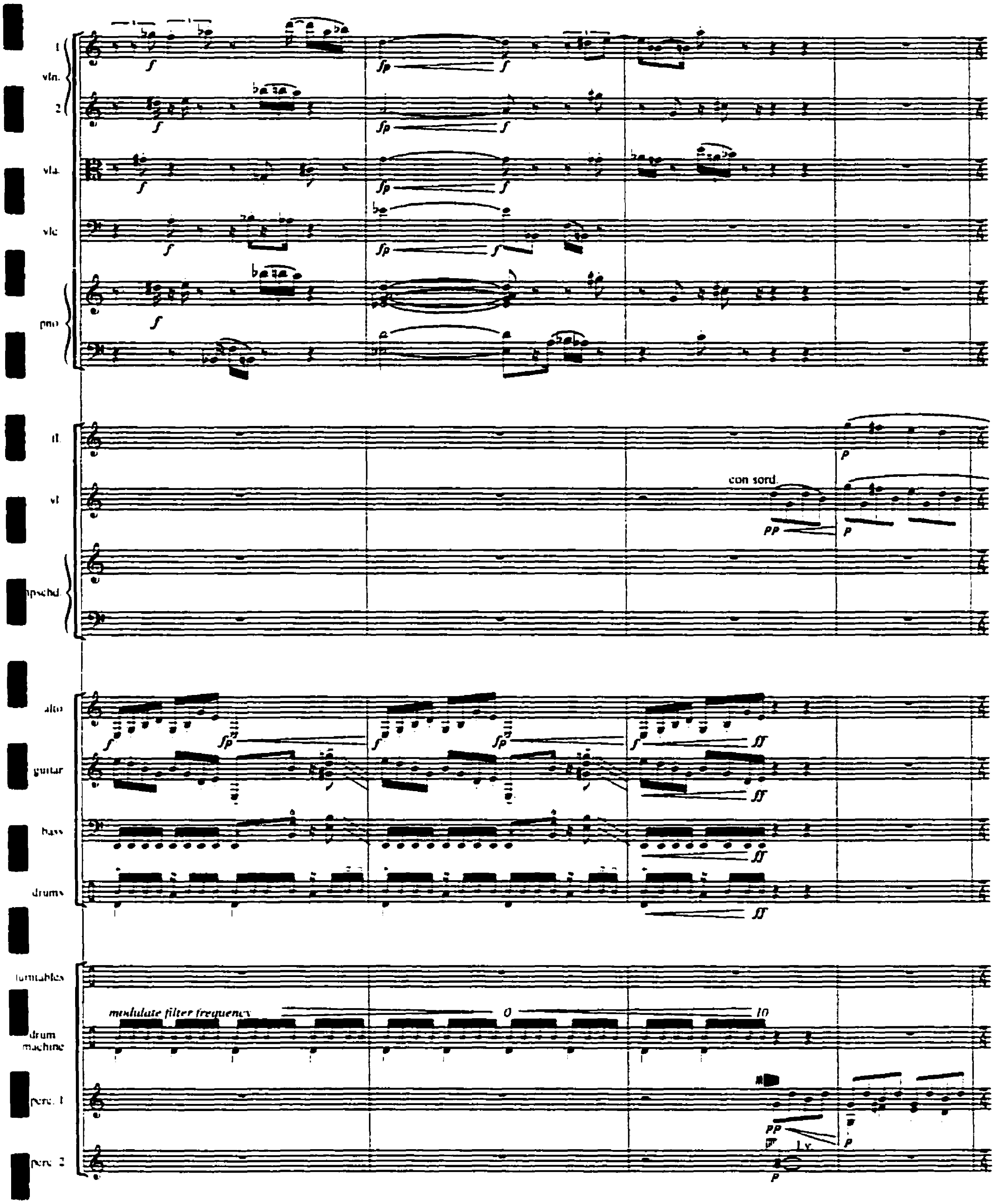
attacca VII

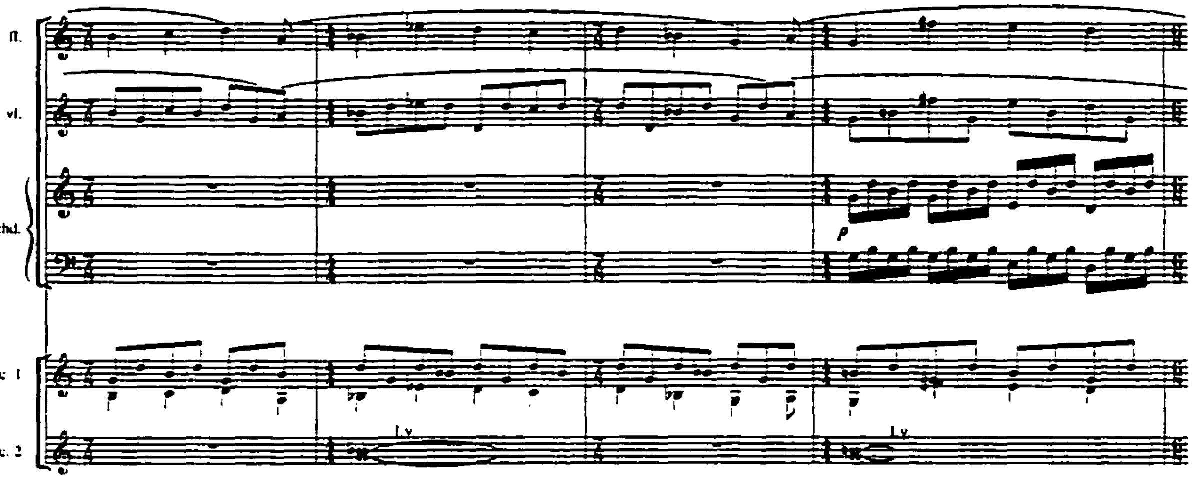
VII. Walpurgis Night's Dream

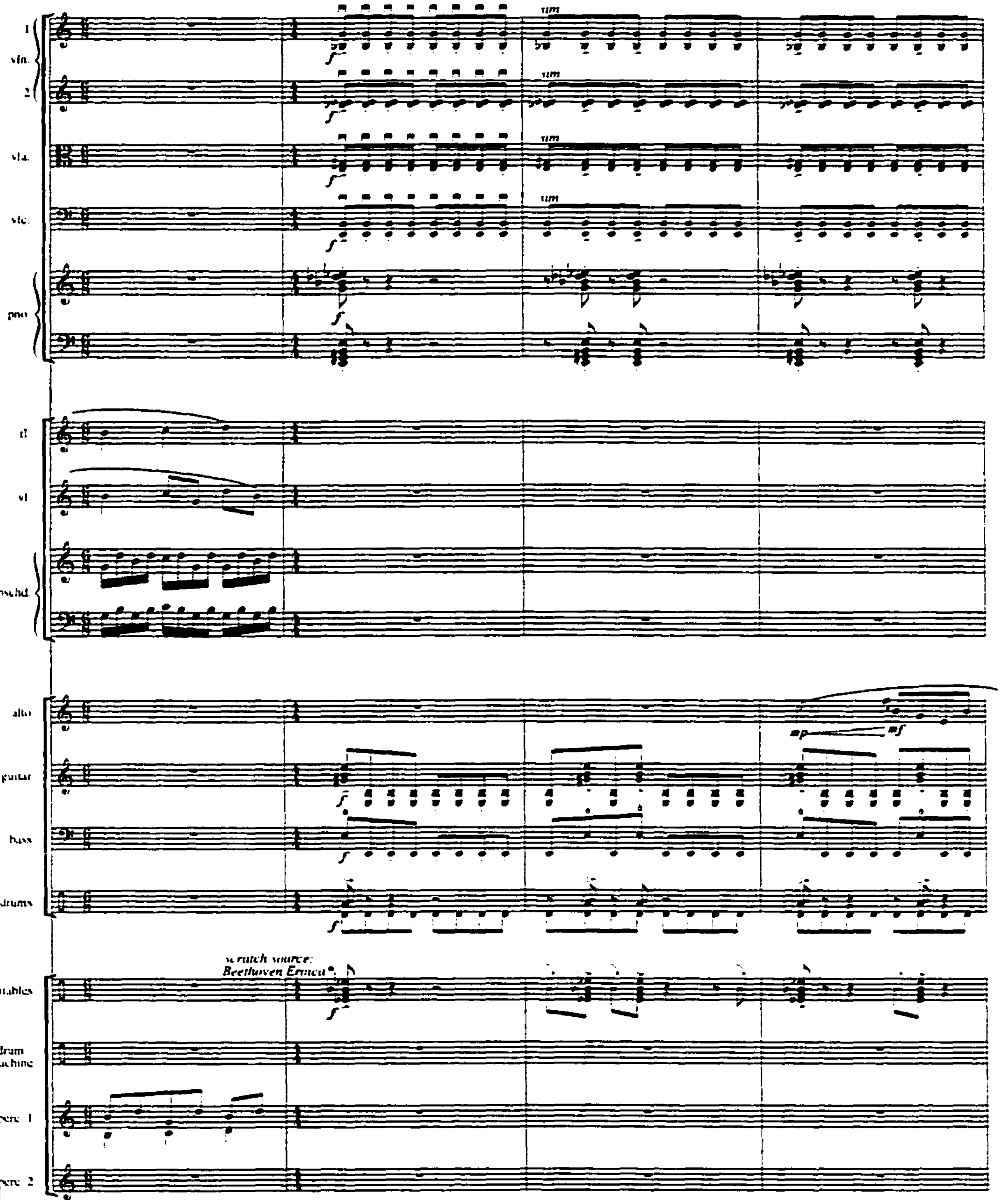

Voice tacet until VIII.
Voice
♩= 120
scratch source: electronic music
eg: Chemical Brothers or Antwerp
ntables
'acid burn' pattern
lopass filter: 5
resonance: 2
sim
modulate filter resonance.
drum
achine*
f
alto
guitar
bass
drums
gliss
fp
slap
p
f
turntables
slow spin down & fade
10
drum
machine

---

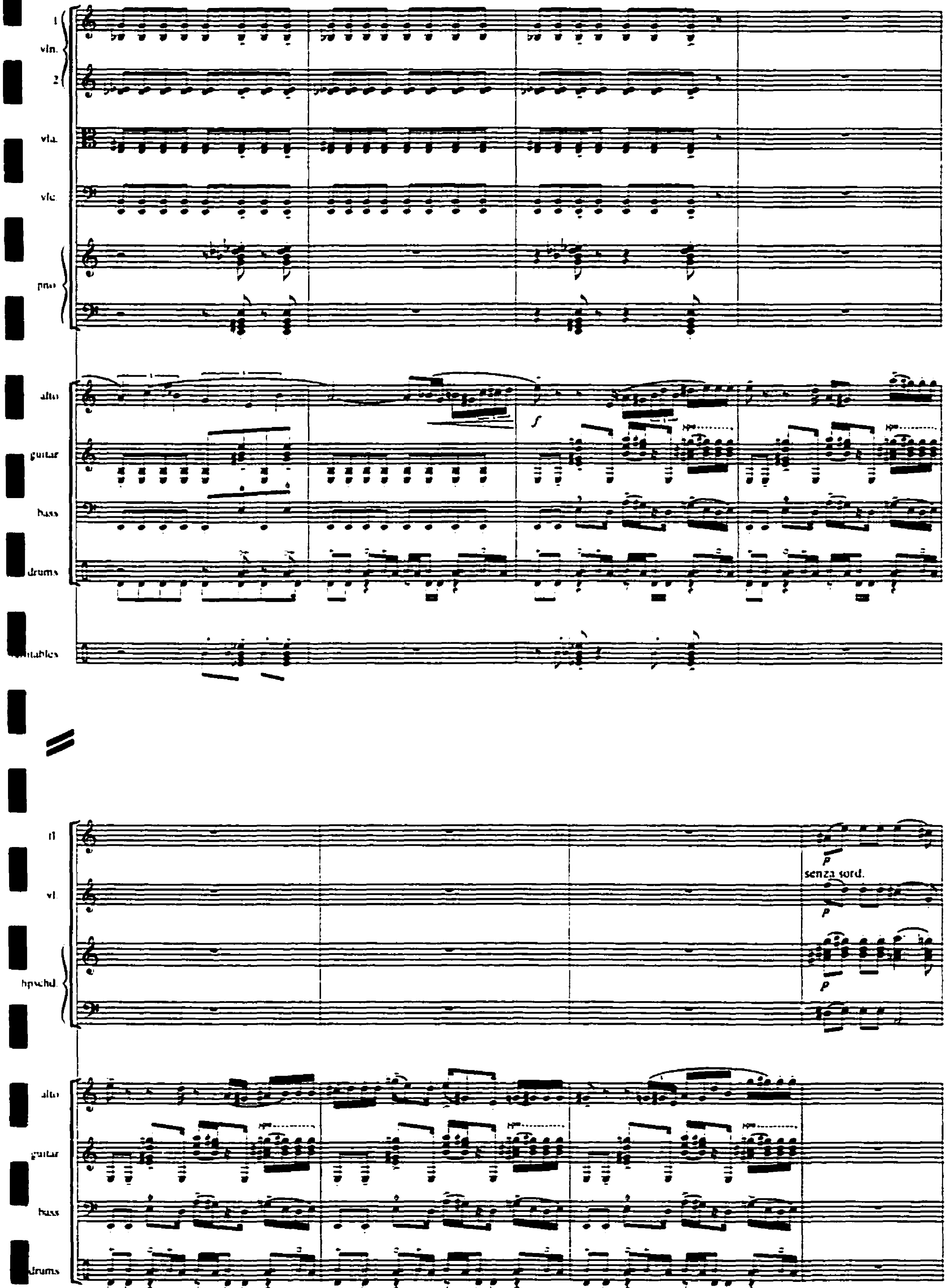
* see performance notes for drum machine instructions

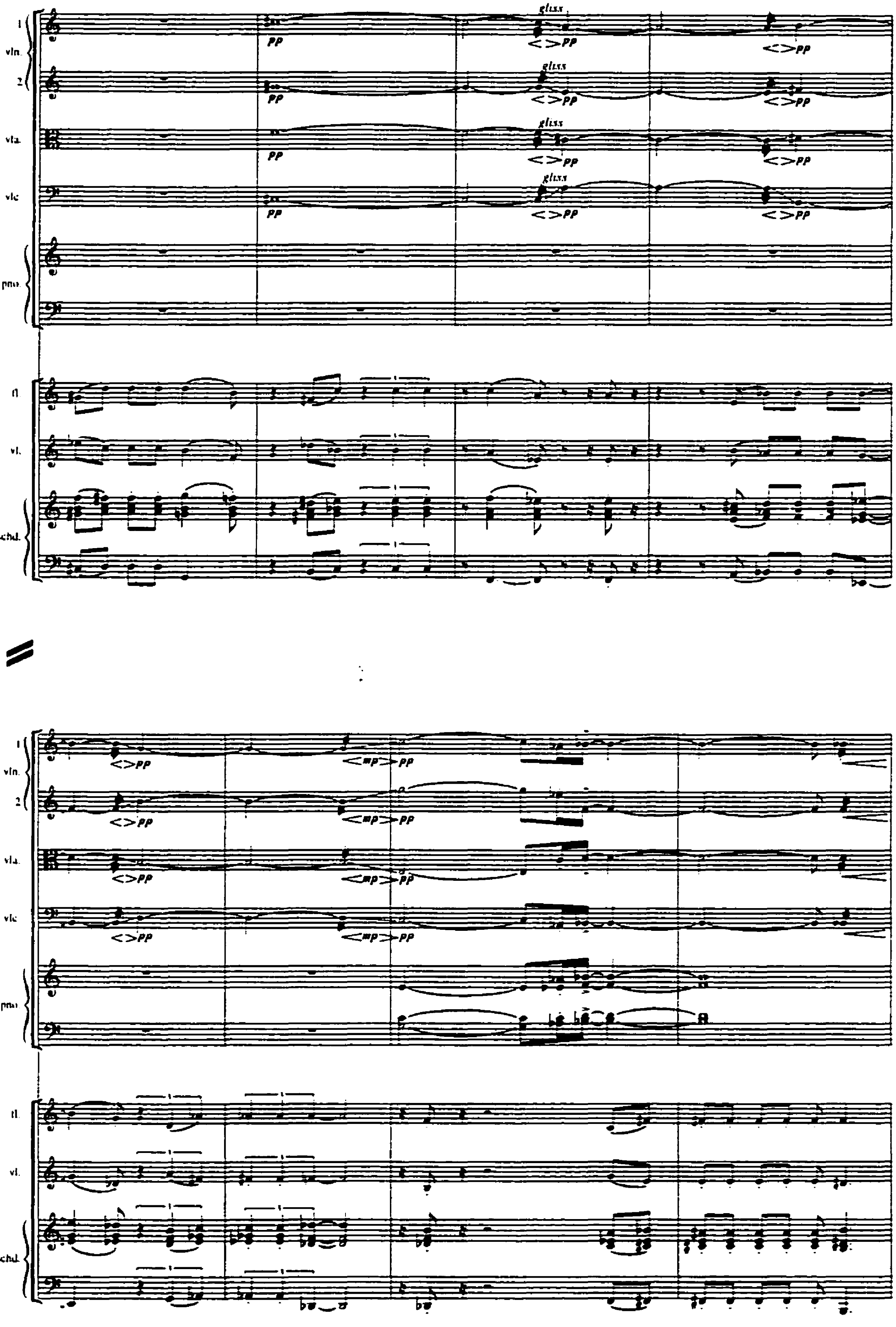

1
vln.
2
vla.
vlc
pno
fl.
vl
hpschd.
alto
guitar
bass
drums
turntables
drum machine
perc. 1
perc. 2
f
fp
pp
p
ff
con sord.
modulate filter frequency
0
10

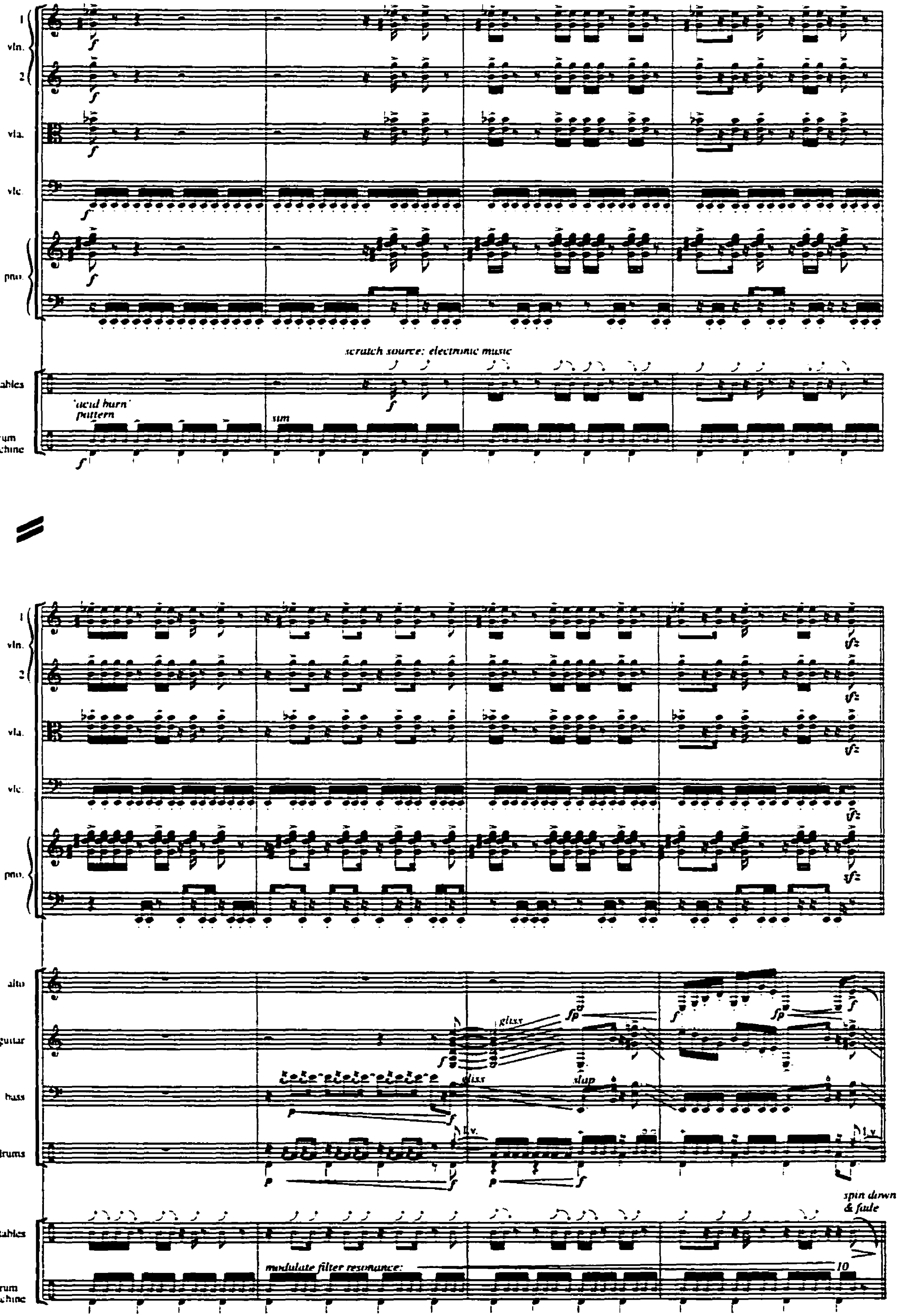

fl.
vl.
hpschd.
p
perc. 1
perc. 2
l.v.
l.v.


1
vln.
2
vla.
vlc.
pno
fl
vl
hpschd.
alto
guitar
bass
drums
turntables
drum machine
perc 1
perc 2
sim
f
mp
mf
scratch source:
Beethoven Eroica*

* see performance notes for specific instructions regarding this section

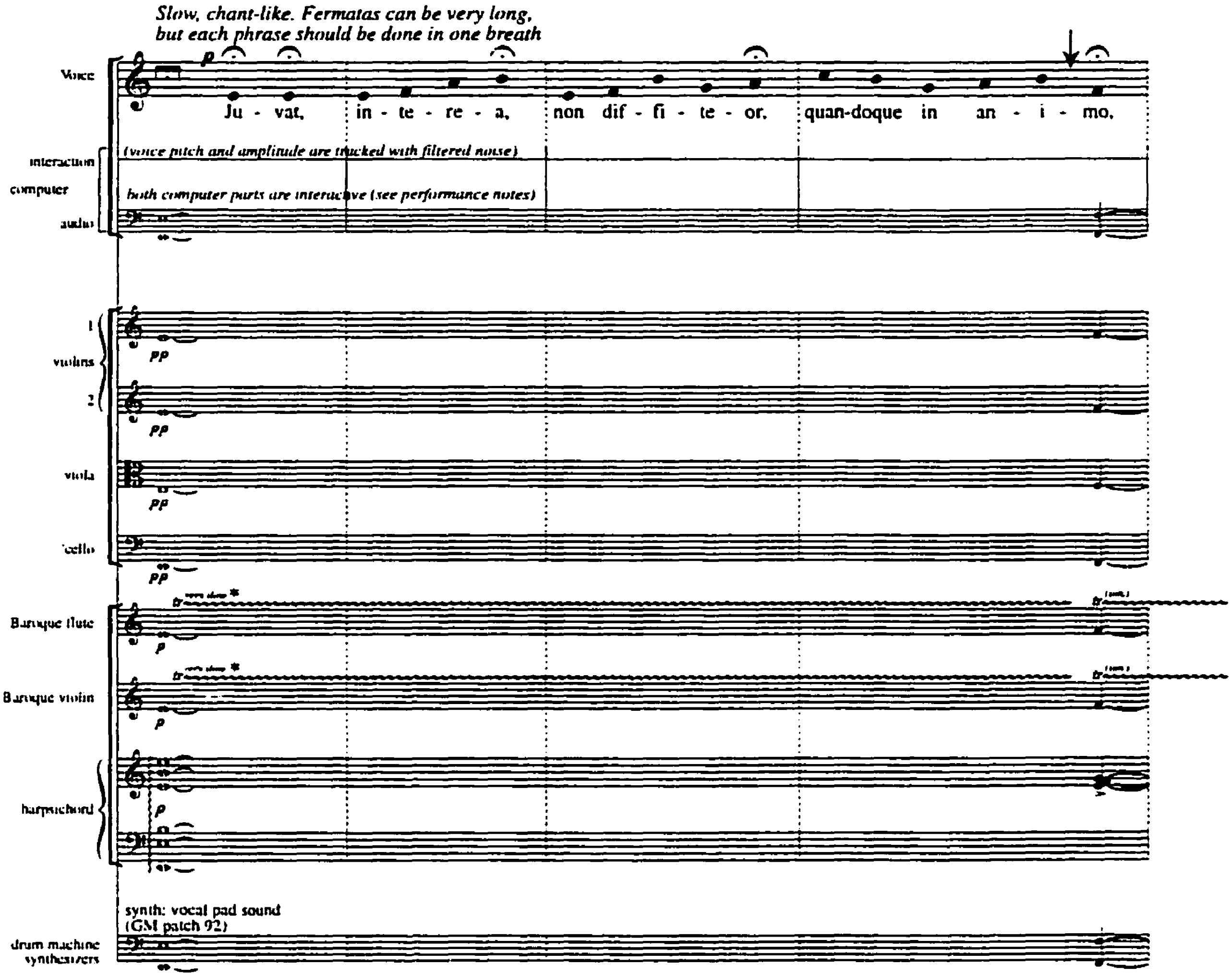

1
vln.
2
vla.
vlc.
pno
alto
f
guitar
bass
drums
ntables
fl
p
senza sord.
vl.
p
hpschd.
p
alto
guitar
bass
drums


1
vln.
2
vla.
vlc
pno.
fl.
vl.
hpschd.
gliss
pp
mp


1
vln.
2
vla.
vlc.
pno.
tables
drum
achine
f
scratch source: electronic music
'acid burn' pattern
sim
alto
guitar
bass
drums
gliss
fp
slap
l.v.
p
sfz
spin down & fade
modulate filter resonance:
10
ables
rum
chine

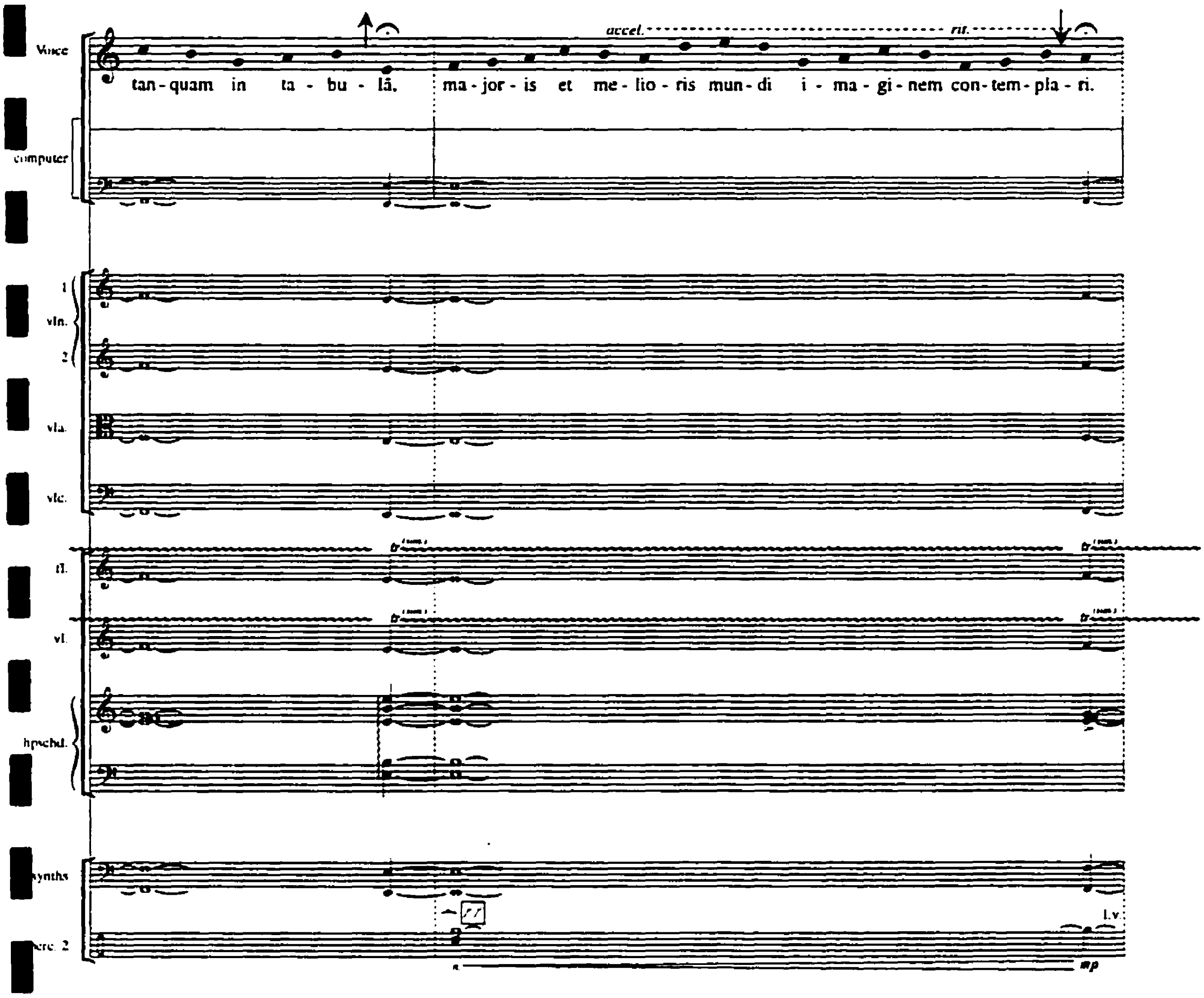
Pause before VIII

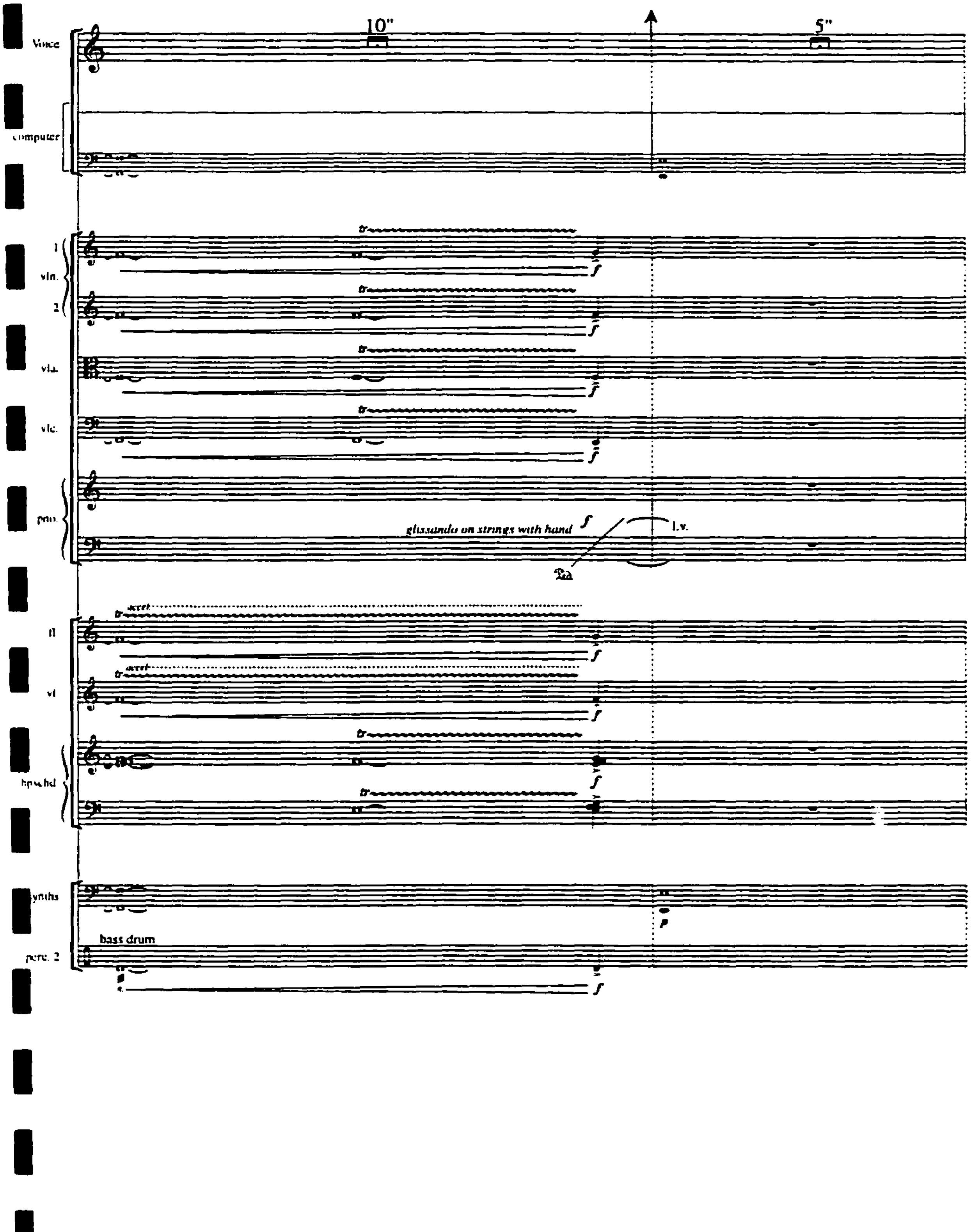
VIII. Postlude: *Juvat, interea, non diffiteor*

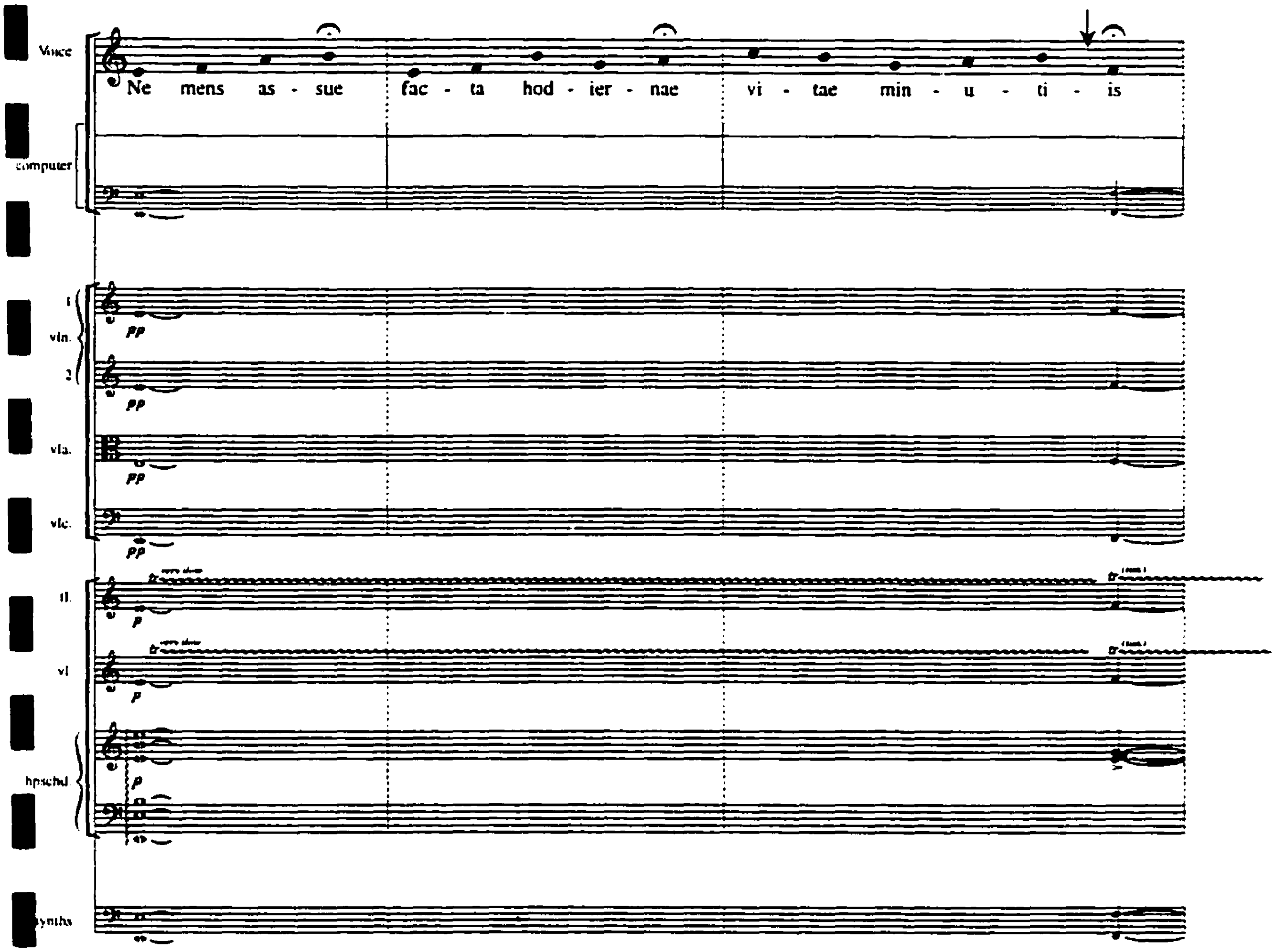

Slow, chant-like. Fermatas can be very long, but each phrase should be done in one breath
Voice
p
Ju - vat, in - te - re - a, non dif - fi - te - or. quan-doque in an - i - mo.
interaction
(voice pitch and amplitude are tracked with filtered noise)
computer
both computer parts are interactive (see performance notes)
audio
violins
1
2
viola
'cello
pp
Baroque flute
Baroque violin
tr very slow *
tr (sim.)
p
harpsichord
synth: vocal pad sound
(GM patch 92)
drum machine
synthesizers

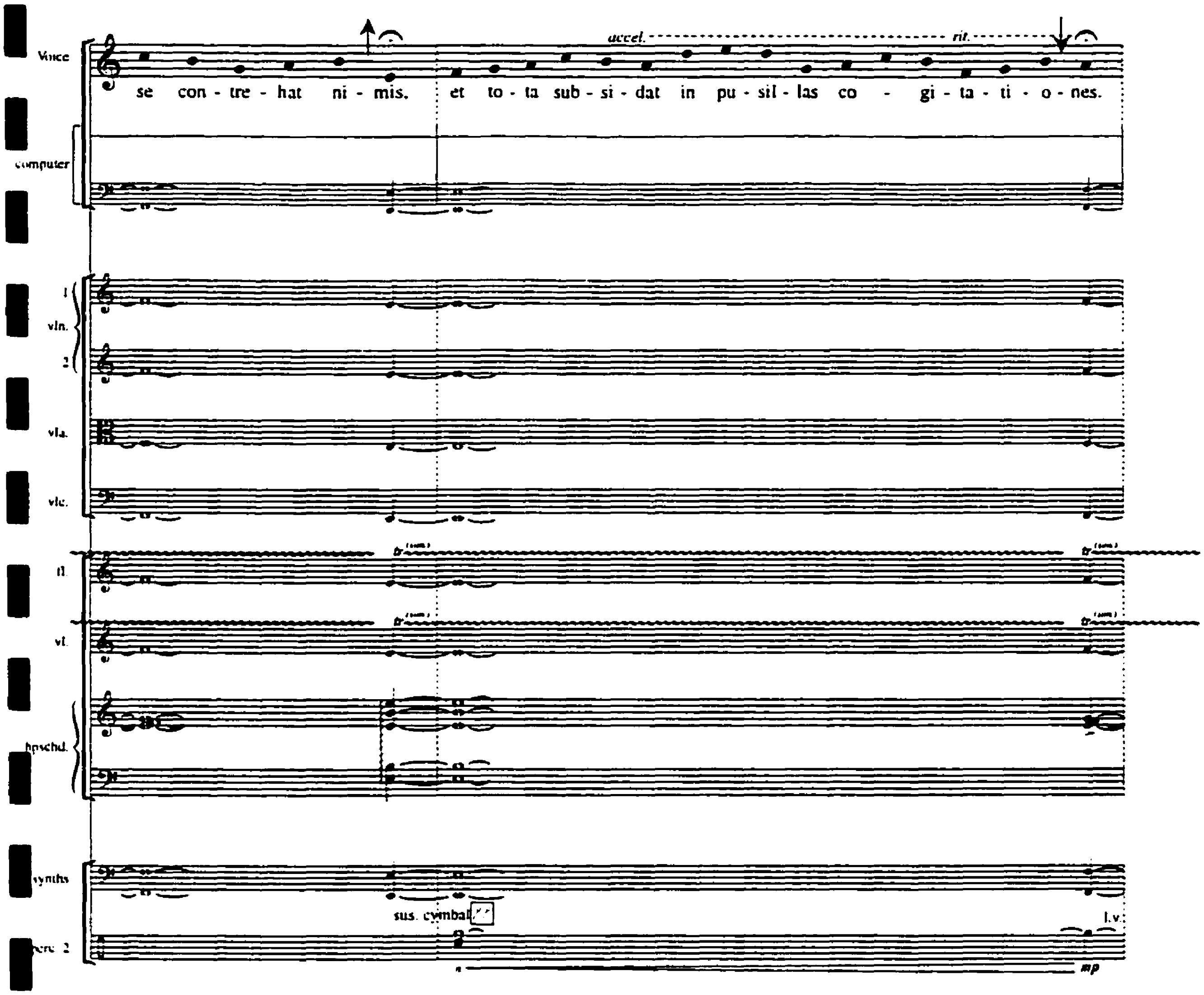
---

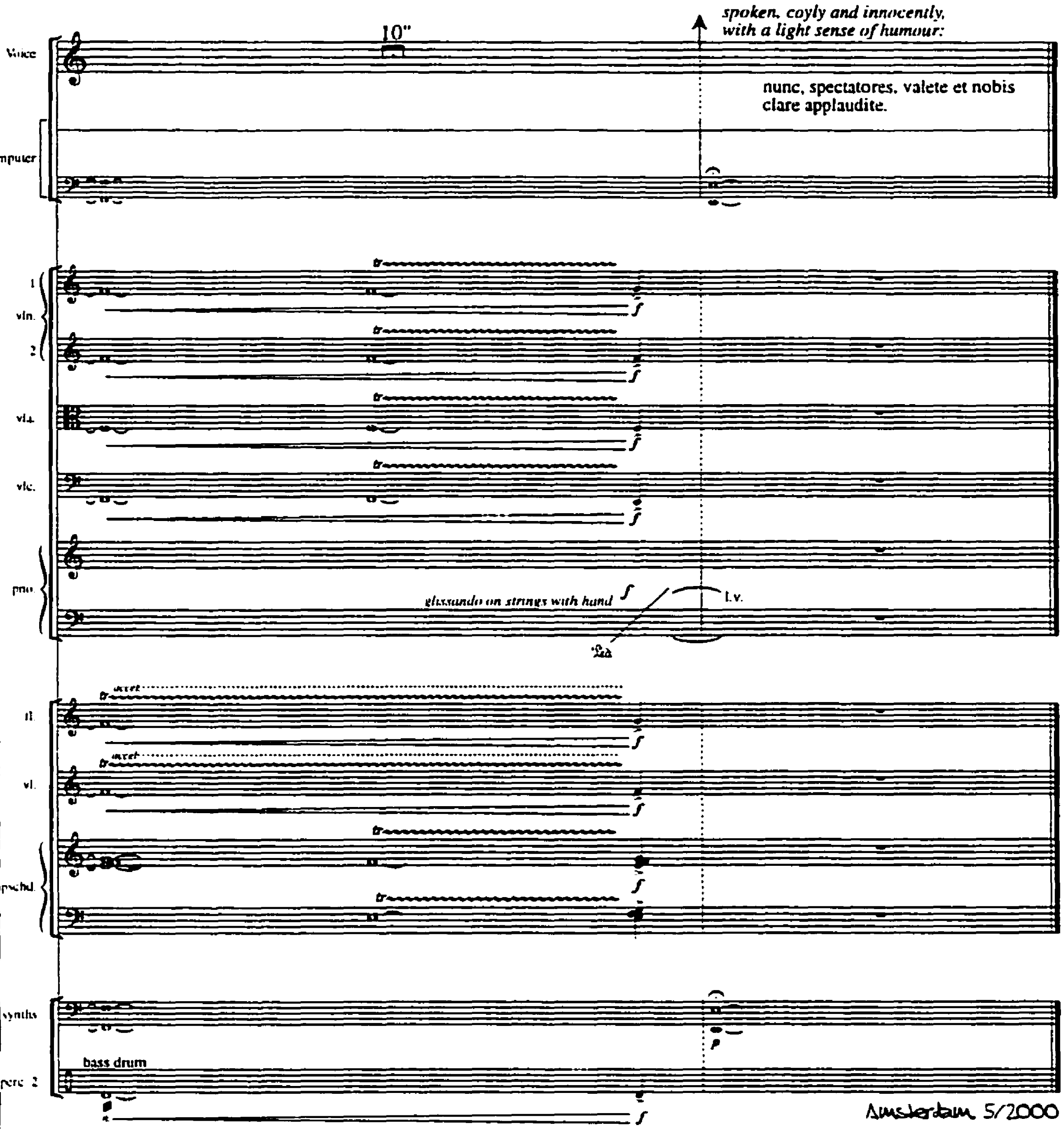
* *flute and violin should trill slowly at different speeds, producing a phasing effect.*


Voice
computer
1
vln.
2
vla.
vlc.
fl.
vl.
hpschd.
synths
perc. 2
accel.
rit.
tan-quam in ta-bu-lā, ma-jor-is et me-lio-ris mun-di i-ma-gi-nem con-tem-pla-ri.
tr
tr
l.v.
mp


10"
5"
Voice
computer
1
vln.
2
vla.
vlc.
pno.
tr
f
glissando on strings with hand
l.v.
Ped
fl
vl
accel.
hpschd
synths
p
bass drum
perc. 2


Voice
Ne mens as - sue fac - ta hod - ier - nae vi - tae min - u - ti - is
computer
1
vln.
2
pp
pp
vla.
pp
vlc.
pp
fl.
tr
p
vl
tr
p
hpschd
p
ynths


Voice
computer
vln. 1
2
vla.
vlc.
fl.
vl.
hpschd.
synths
perc. 2
accel.
rit.
se con - tre - hat ni - mis. et to - ta sub - si - dat in pu - sil - las co - gi - ta - ti - o - nes.
tr
sus. cymbal
l.v.
mp


10"
spoken, coyly and innocently, with a light sense of humour:
Voice
nunc, spectatores, valete et nobis clare applaudite.
computer
vln. 1
vln. 2
vla.
vlc.
pno.
glissando on strings with hand
l.v.
Ped.
fl.
vl.
accel.
hpschd.
synths
perc 2
bass drum
tr
f
p

Amsterdam 5/2000