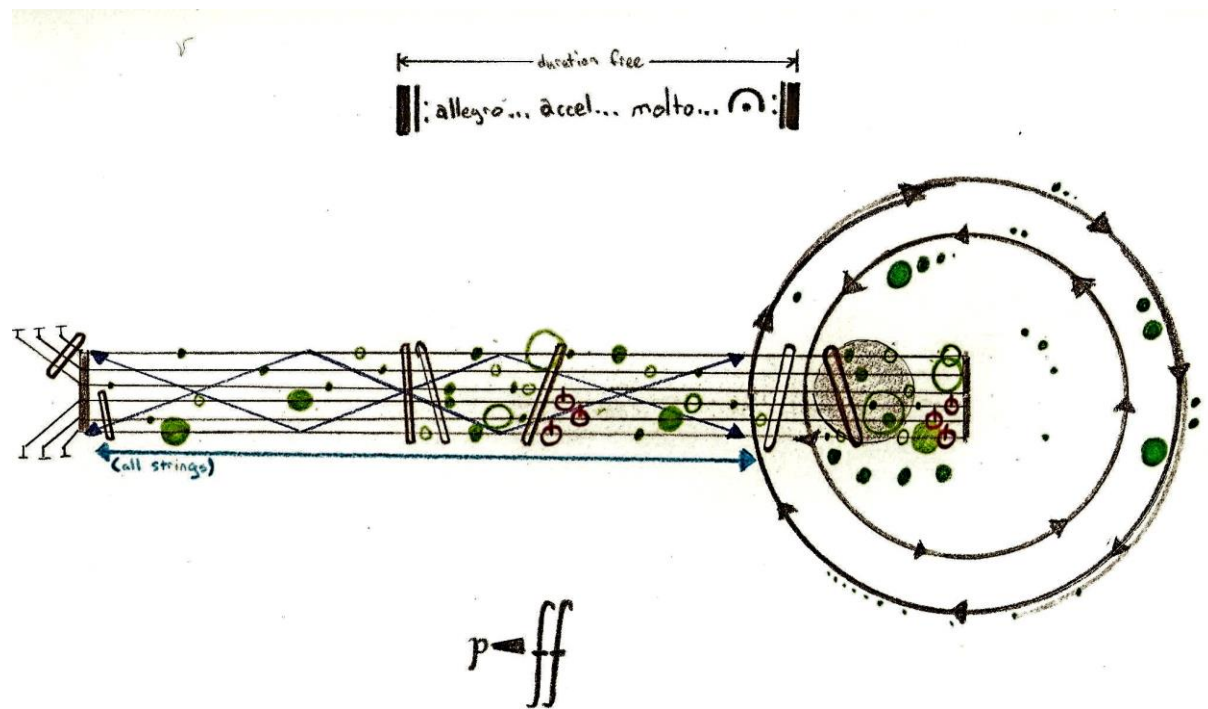
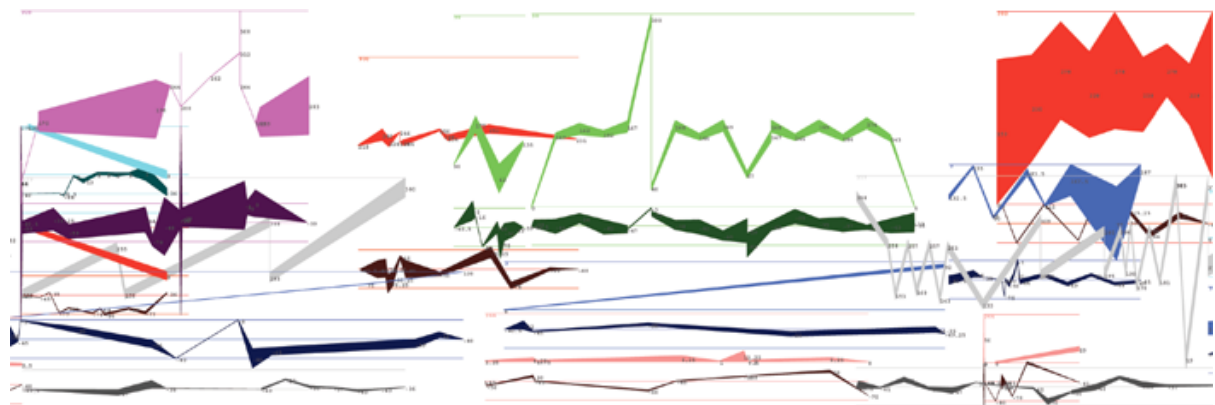


Aleksei Stevens – Study 1-Amplified Acoustic Guitar

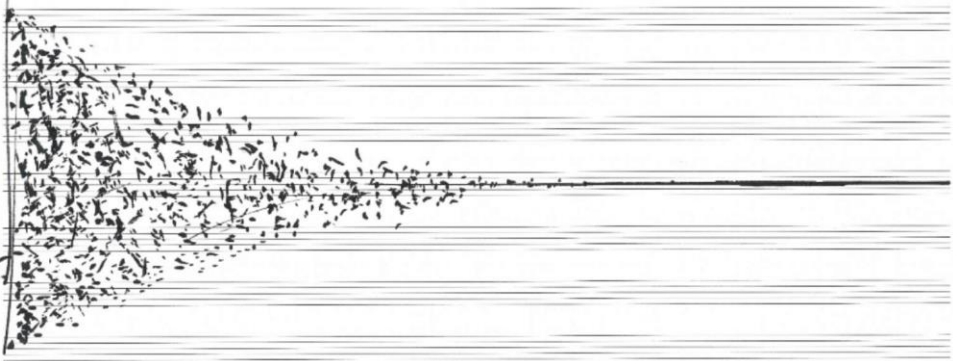


Hans-Cristoph Steiner – Solitude



John Teske – Six Graphic Scores –No. 5

no. 5

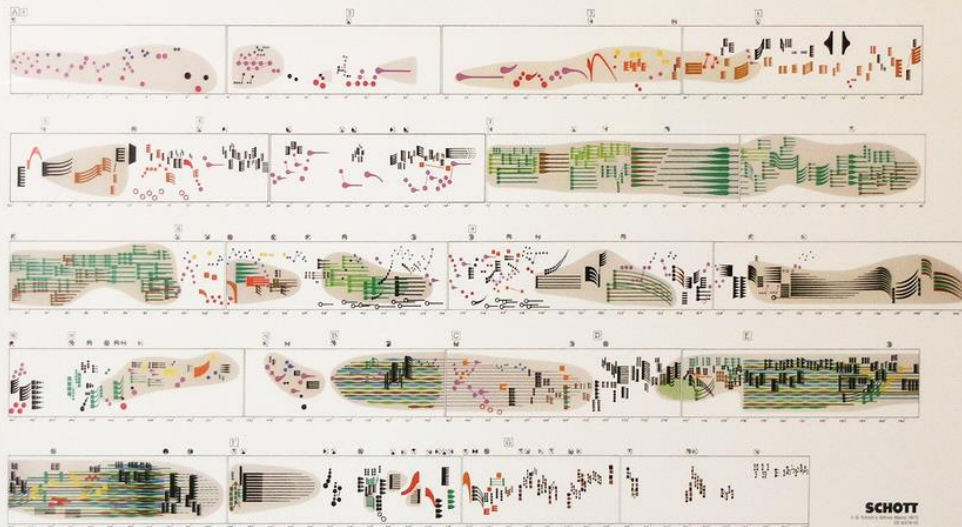


sempre *pp*

 pitch center

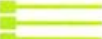
Elektronische Musik
Electronic Music

Electronic Music



SCHOTT
Schott's School Music Store
22 N. 17th St.

Systems of symbols

A	B	C	D	
Rauschen noise	harmonische und subharmonische Spektren harmonic and subharmonic spectra	ungefilterter Impuls unfiltered impulse	gefilterter Impuls filtered impulse	
erkenntbare Tonhöhe recognizable pitch 6  Sinuston sinus tone 5  20 Hz-gefiltert 20 Hz-filtered 4  terzgefiltert third-filtered 3  oktavgefiltert octave-filtered 2  grob gefiltert rough-filtered 1  weißes Rauschen white noise keine erkennbare Tonhöhe no recognizable pitch	weniger geräuschhaft lesser proportion of noise 7  8  9  10  11  12  mehr geräuschhaft greater proportion of noise	13 	Tonhöhe pitch hoch high mittel middle tief low	16  15  14 

OPX.FOR STUART DEM'STER ORNAWMENTIK FOR ONE OR MORE PERFORMERS NO.1

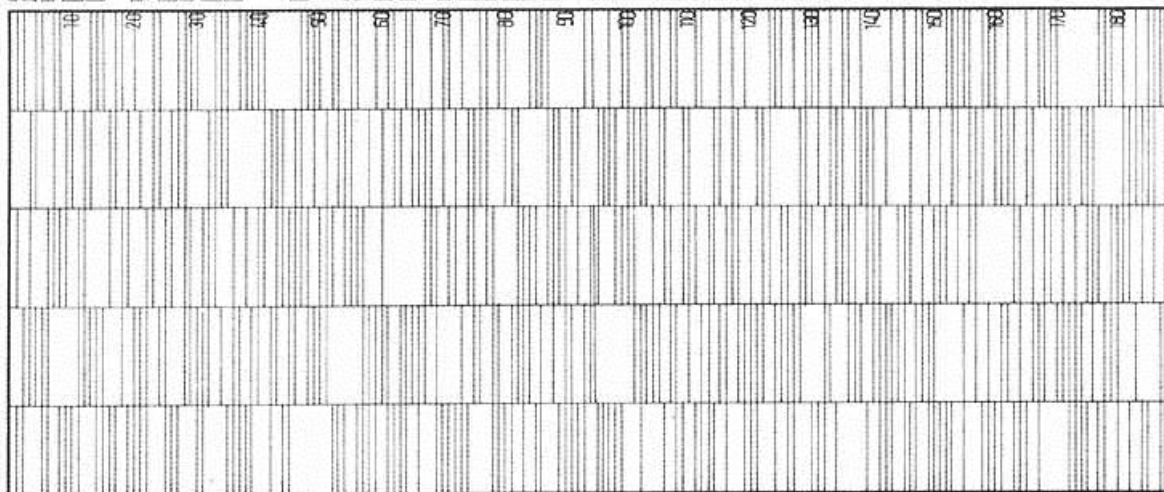
ON THE PERFORMANCE: the piece may last any length of time, determined in advance. The piece consists of a held, sustained, or otherwise maintained note, chord or sound, which is decorated [ascertainable time intervals] by brief ornamental flourishes derived from the symbols opposite, each ornament to be played once only. Where there is more than one player, the ornaments should be shared out more or less equally between the performers, any instruments or sound-sources may be used. As far as possible the ornaments should be read from left to right, with vertical alignment indicating simultaneity. Melody instruments or simple sources of sound may be augmented to cope with this: the ornaments may if necessary be adapted. The held sound is implied by the horizontal band which appears at either side of each ornament. Octave or timbre may change as well as dynamic, basically mp with a range between pp and mf: such changes can only take place at the end of an ornament. The piece should begin and end with the same timbre, octave etc.

note: the colour given to the ornaments in this score is that suggested by William Gardiner [The Music of Nature] (London 1832) to signify the trombone playing mp. (cf pp.183-50)

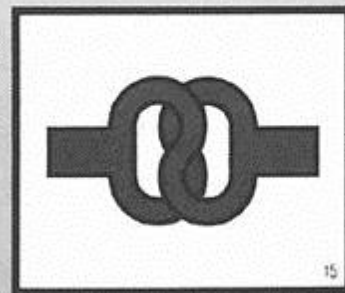
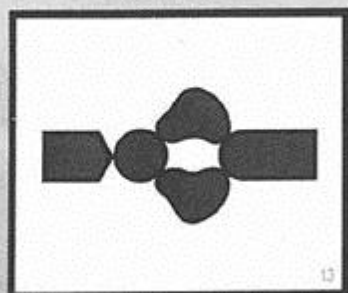
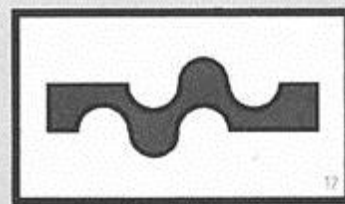
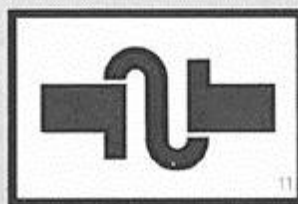
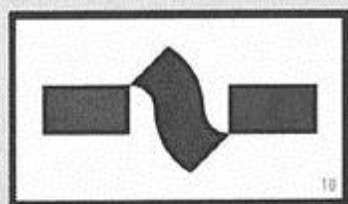
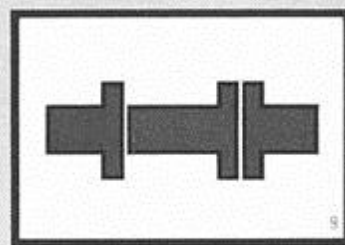
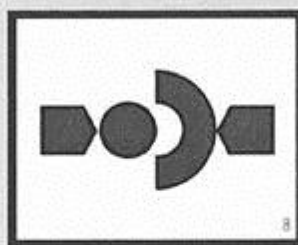
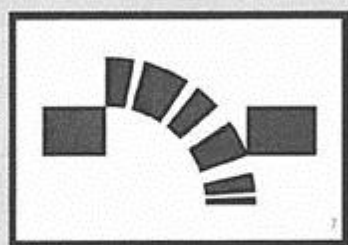
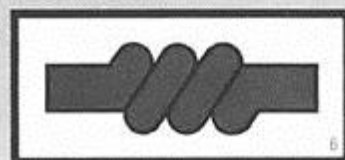
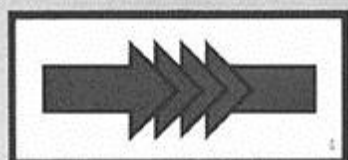
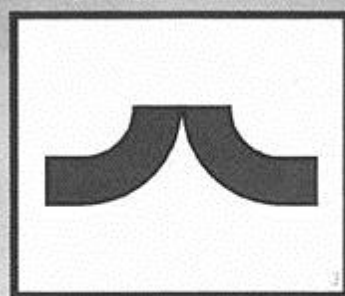
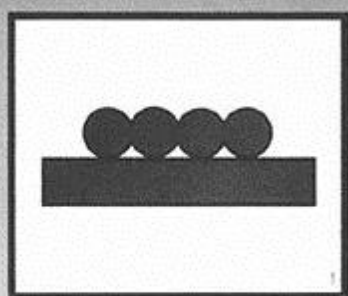
USE OF GAPMAP: occurrence of ornaments can be plotted with reference to the gapmap below: it can also be used, optionally, and ad lib., for any other measurements that the piece seems to call for. Taking the top band, the player makes any position along the line above as the starting point: sixteen* verticals excluding that at the starting point should be counted to the right: the number of units occupied by the lines is then counted: the time the piece is to take is divided by this number. This gives the relative positions of the ornaments. The sixteenth line marks the end of the piece. Other players take lower bands and the same starting point; they also share the first player's point of ending. Any lines left over in such cases should be ignored, the held note to be continued to the the end. When equal sharing of ornaments is impossible, the reader of the top band takes the one left over *i.e. when there is one performer. When more than one player, each counts his allotted no. of ornaments plus one: as in the example for two players which follows:—

EXAMPLE: Two players to give a 10 min. performance: A takes 8 ornaments, B 7. A starts at 90, reads 9 verticals to 110: 20 units, each 30 secs. A's first ornament occurs after 2 mins. B takes the second band and also starts at 90. His first ornament occurs after 30 secs., his last after 6 minutes. He then plays his initial sound for the remaining 4 minutes of the piece.

GAPMAP FOR ALL MEASUREMENTS: X



TOM PHILLIPS: MCMLXVIII



Coda. Hay ganas de quedarse plantado en este verso ...

cue 24



...pero yo no me quedo!

cue 25

No Me Quedo ... (plantado en este verso)
(I am not staying ... [stuck in this verse]): a
work consisting of five continuous sections
and a coda.

Rajmil Fischman; *No Me Quedo*.... For saxophone or clarinet, bassoon, violoncello, percussion, and tape.
Used by permission of the composer of Rajmil Fischman, © 2000.

These take their titles from the text of
a poem by the Peruvian César Vallejo
(1892-1938). Dedicated to Dalit Fischman.

24

Air tones

1-2 3-4 5-6 7-8 9-10

Click!

actual pitch

notated pitch

Slap tongue ram *ff* "CH" *p* *mf* *ff* *f* *mp* "SS" *mf* *f* *p*

11"

11-12 13-14 15-16 17-18 19-20 21-22 23-24

(pitch)

"CH" *ff* *mf*

Incastro di Mondi was written in December 2006 to be performed at iXem Festival in Rome, Italy.

The piece was based on a set of 2 improvising rules over which an electronic part has been developed:

Very short and loud notes, and expressive couples of notes. To those were added a third figure that's the same as the first one, but with slow/fast crescendo/diminuendo around the short loud note.

The first ensembles to play it were saxophone, flute, and percussion, but then it changed to something that could be more harmonically oriented.

All the score has been developed accordingly to the special characteristics of the players and their ways to react to electronic transformations.

Many of the musical figures suggested come from direct experience with the improvising techniques of the players, but the score still maintains a generality, so it can be played by other performers.

The electronic part is related to my personal research on timbre and music, and in a few words, it has been created for morphing acoustic sound in a way that can respect its strength, adding something hard but funny to the ears. Imagine that the best environment to play the piece is a large hall with very high volumes on 4 loudspeakers.

The interactive part is performed by a Gamepad player, which originally was invented for a dancer captured by a video. It can still be played in that way.

In concerts, I decided to perform on the Gamepad, as it was easier and faster to set-up.

Additionally, this score is called *Incastro di Mondi (Wedged Worlds)* because the personal worlds of the 3 players are mixed with electronics and with the gamepad player mind, who is changing electronic reactions to players' sounds, making the mix and the game more dense. It's a mental game, in a very loud situation, and has something related to the human reality of the mixing of cultures, developing interaction, even in an extreme context.

FLUTE: Musical notation with a short note and a crescendo/diminuendo line. Max Rest allowed. About 30" long.

BASS CL.: Musical notation with a short note and a crescendo/diminuendo line. Max Rest allowed. About 30" long.

VLN: Musical notation with a short note and a crescendo/diminuendo line. Max Rest allowed. About 30" long.

GAMEPAD: A diagram showing a gamepad layout with buttons 1-6 and a 'SET ALL' button. Below it is a waveform representing the gamepad's output.

FLUTE: Musical notation with a short note and a crescendo/diminuendo line. Max Rest allowed. About 50" long.

BASS CL.: Musical notation with a short note and a crescendo/diminuendo line. Max Rest allowed. About 50" long.

VLN: Musical notation with a short note and a crescendo/diminuendo line. Max Rest allowed. About 50" long.

GAMEPAD: A diagram showing a gamepad layout with buttons 1-6 and a 'SET' button. Below it is a waveform representing the gamepad's output.

Tommaso Perego; *Incastro Di Mondi*. For flute, bass clarinet, violin, and wireless gamepad.

Used by permission of Tommaso Perego, © 2007.



Stephen Vitiello; "Vertical" from *First sketches of Beta Collide*.
For piano, trumpet, flute, and electronics. Used by permission
of Stephen Vitiello and Courtesy of The Project, New York, ©
2007.



Stephen Vitiello; "First Horizontal" from *First sketches of Beta Collide*. For piano, trumpet, flute, bass and electronics.
Used by permission of Stephen Vitiello and Courtesy of The Project, New York, © 2007.

First sketches for Beta Collide:

"Vertical"

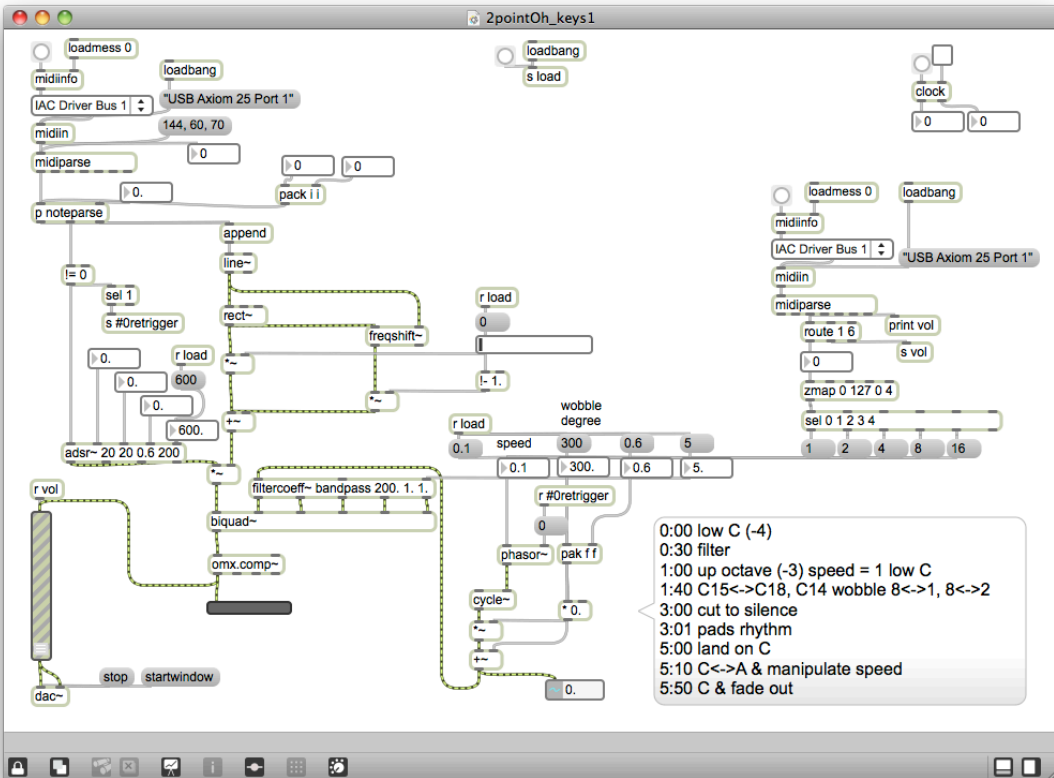
faster

- piano is fingers on wood, not keys at least for first half
- trumpet is extremely close mic'd, similar, pops of breath
- flute is horizontal (where vertical above), percussive taps at first until taps become notes
- electronics fill in the bass content with low-frequency oscillations and high-frequency with fast filter

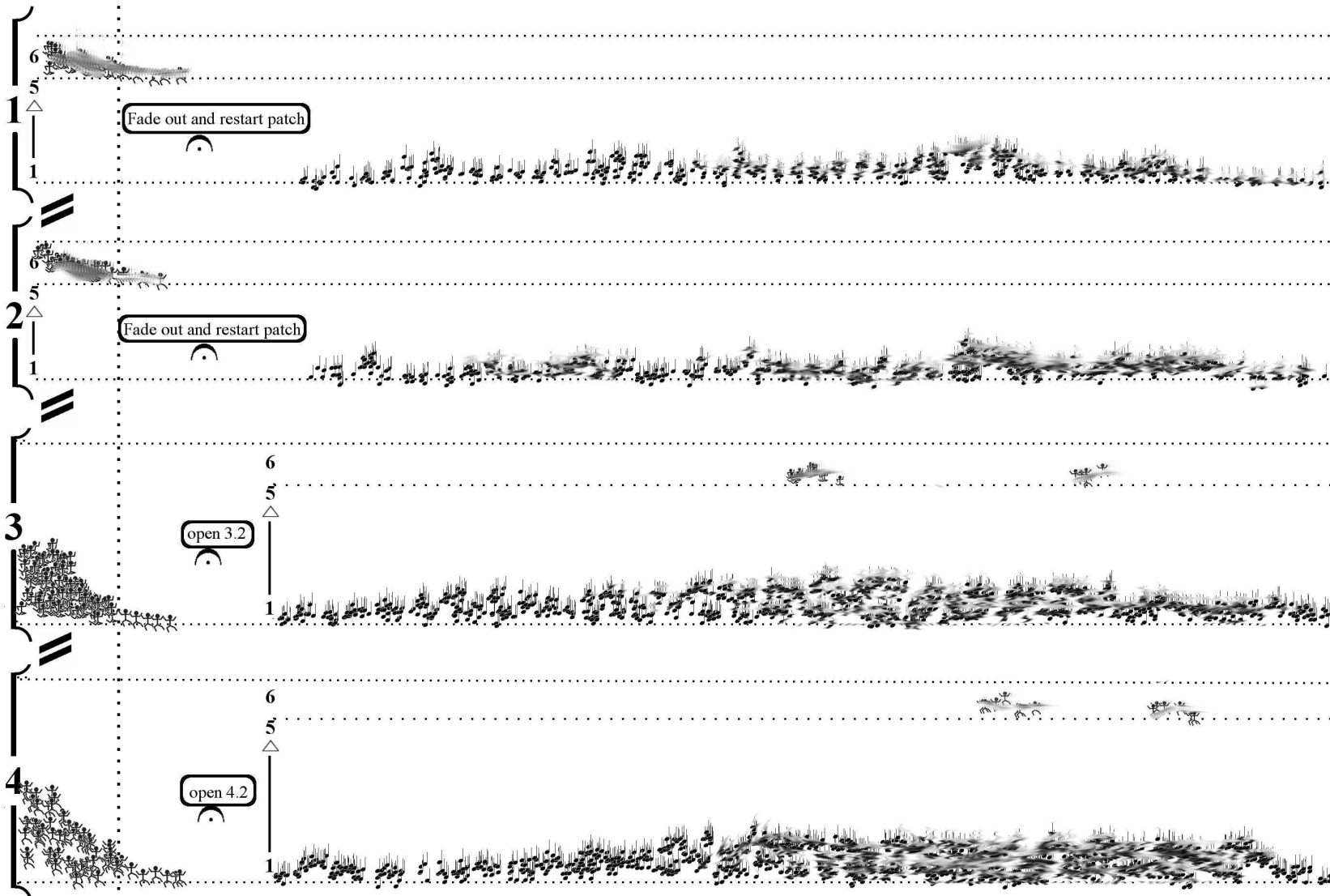
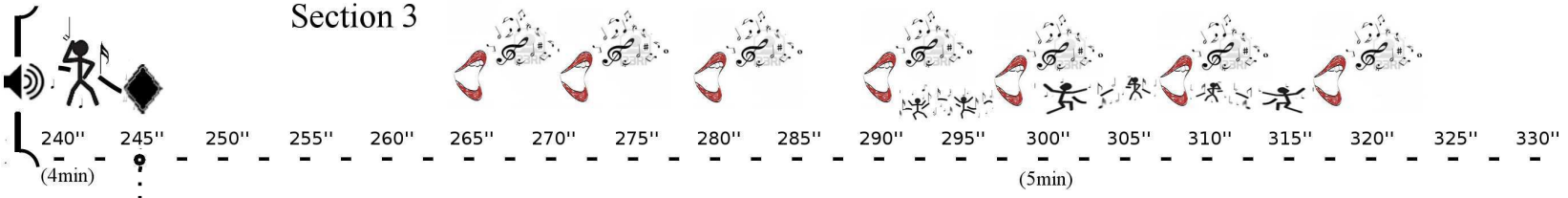
"First Horizontal"

medium tempo

- piano is percussive, repetitions from ripples
- trumpet floats—and then collides with flute (sliding notes not full scale but x number of whole steps)—trumpet has largest room to improvise on this piece
- flute slides up along, crossing with trumpet toward middle and end. Sound is between a drone and a slide-whistle if a slide-whistle had grit
- bass if it's there plays to piano
- electronics sample all of the above, jagged and coming apart, splits wired, occasionally filling in silence with silence



Section 3



You will each have a window of 20 seconds to either restart or open up a new patch. There is no set time on which you have to re enter, just whenever you have everything ready.

Players 1 & 2 - remember to turn the blur times back to zero before restarting the patch, as the point of restarting the patch is to reset the blurring effect.

3

Fl.

sustain note on pauses

W.T (whistle tone)
[imitate brakes]

Cl.

8^{va}

breathy tone

Vln.

8^{va}

15^{ma}

1:42

gliss.

Vc.

8^{va}

1:03 - 1:06

1:12 - 1:16

1:18 - 1:21

1:31 - 1:32

1:35 - 1:37

1:38 - 1:42

1:42 initial scratch tone

gliss.

Pno.

sustain notes on pauses

(15)

1:03 - 1:06

1:12 - 1:16

1:18 - 1:21

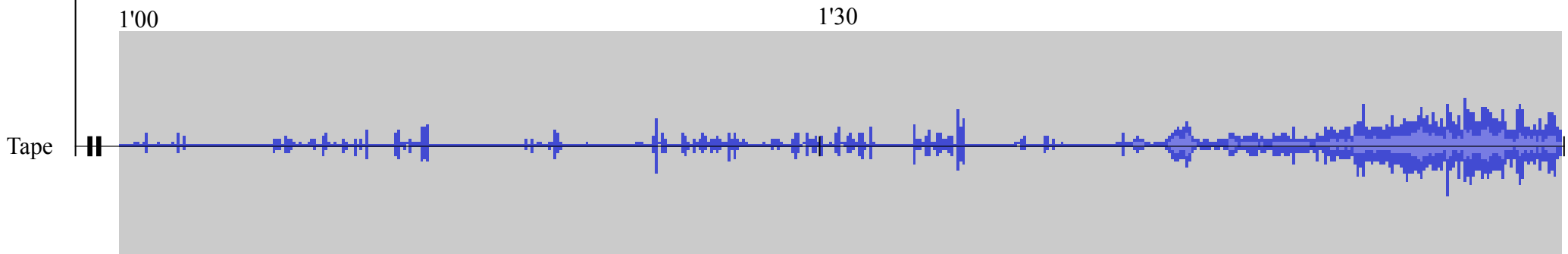
1:34 - 1:36

1:37 - 1:38

1:39 - 1:41

hit piano. alternate: boom / knock / tap
[imitate wheel rhythm]

Ped.



XVII. Taped (Prerecorded) Sound

<i>Electronic Notation</i>	316	<i>Continuous versus Interrupted</i>	320
<i>Cuing of Taped Sounds</i>	317	<i>Tape</i>	
A. <i>Notation of Sounds</i>	317		
B. <i>Notation of Rhythm and Meter, etc.</i>	318		

Electronic Notation

In the field of prerecorded or taped sound, notation serves four purposes:

1. As a composer's worksheet.
2. As a visual aid to the listener's understanding of the music. These "listeners' scores" may omit a great deal of secondary or background material in order to focus more effectively on important "themes" or other primary ingredients. In other words, such scores need not be (and in fact seldom are) *complete* records of *all* occurrences.

The notation of a listeners' score may range from very freely invented graphics (which reinterpret the taped sounds, with or without the aid of colors) all the way to highly controlled and detailed drawings, such as graphs, calibrations, curves and other lines and shapes, letters, numerals, and abbreviations, plus an arsenal of symbols which occasionally even includes conventional notation.

3. As entrance cues for performers (musicians, actors, dancers) of works in which taped sounds and performance actions have to be coordinated.
4. As permanent graphic documents for use by theorists and students who wish to reenact the process of producing a tape from a composer's notation.

The least frequent use of electronic notation, at least at the present state of development, is for instant, live performance, and since this guidebook deals exclusively with notation for live performance, electronic notation is covered rather briefly and selectively. The following chapter concentrates on the third of the categories above.

Cuing of Taped Sounds

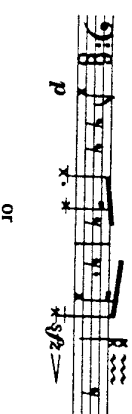
The virtually unlimited possibilities for taped sounds preclude any universally appropriate system of notation. This, in turn, presents problems regarding entrance cues for the performer of any live music that has to be synchronized with the taped sounds. The choice of the notational method for such cues must always be decided from case to case, depending on the particular kinds of taped sounds involved and the kinds of interactions required for the performance.

A. Notation of Sounds

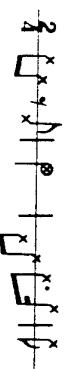
1. ORDINARY PITCHED SOUNDS
Cues are notated the same as cues for ordinary live music.
2. UNCONVENTIONALLY PITCHED SOUNDS (MICROTONES, SLIDES, ETC.)
See the section on Microtones, page 67 ff.

3. APPROXIMATE PITCHES OR PITCH LEVELS
X-shaped note-heads or headless stems are best suited (encircled x's for half and whole notes):

Symbolic notation



or



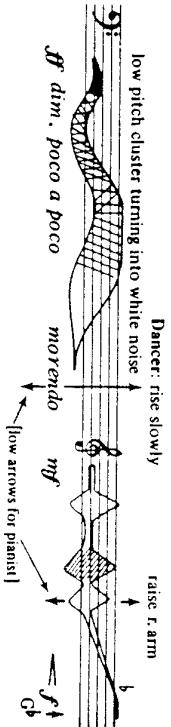
Spatial notation



4. INDEFINABLY PITCHED SOUNDS

These are bands of sound, gradually rising or falling, growing wider or narrower, vacillating between definable and indefinable pitches, but without rhythmic impulses or patterns. Lines or bands suggesting expansions and contractions, as well as up and down movements, should be used. Degrees of density, pitch definition, and other characteristics, can be suggested by changing the bands' in-

side areas from blank, via hatching and cross hatching, or via different degrees of grey, to black. Dynamics should be placed below the staff. Verbal descriptions should be added. In short, visual analogues must be created which trace the changing sounds:



It is helpful to use arrows to indicate points at which live sounds or actions should enter, coincide, or drop out.

5. WHITE NOISE AND RELATED SOUNDS

White noise is a hissing sound consisting of an infinitely close, equidistant "cluster" of frequencies through the entire audible sound spectrum. White noise is best represented by a broad horizontal band, blank or hatched. (Solid black bands, such as are used for instrumental cluster notation, have been found to be less effective for instant recognition because their darkness contradicts the concept of "white" noise. The band should be labeled *White Noise*, and dynamics should be added below.

Abrupt or gradual modifications, such as narrowing the overall range, or stressing the higher, middle, or lower frequencies ("pink noise," "blue noise," etc.), or changes from discernible pitches or chords to white noise and vice versa, should be shown with changes in the width of the band and/or with changes in the density of the hatching, along with verbal indications.

6. OTHER SOUNDS

Most other electronic sounds are more elusive and do not even fit into the vague categories of shapes and "fillings" of bands mentioned so far. Appropriate analogues must be invented from case to case and supplied with verbal descriptions if at all possible, to help the performer recognize the sounds with which he must coordinate. As mentioned before, labeled arrows for proper coordination are always useful, too, unless the taped sounds are sufficiently obvious in character to make arrows unnecessary.

Concrete sounds, especially if not too distorted, present fewer cuing problems, if any. If distorted beyond recognition, they will automatically fall into the categories dealt with above.

B. Notation of Rhythm and Meter, etc.

1. ORDINARY METRIC/RHYTHMIC ORGANIZATION

Cues are notated as in ordinary live music.

2. SEPARATION OF RHYTHM AND SOUND

Because of the frequent difficulty of notating the sound of taped music efficiently and convincingly, metric/rhythmic notation often emerges as the most dependable means of cuing. In such cases, the sounds are notated separately from the rhythm: the sound notation usually consists of quite free visual analogues with or without descriptive matter, while the rhythmic notation is placed underneath or above (using x-shaped note-heads) and must be as explicit and precise as the sounds permit, whether in symbolic or spatial notation.

3. ARROWS

If the taped sounds do not lend themselves to any rhythmic interpretation, they must be examined for other clearly discernible phenomena. If such can be found, arrows should be drawn at suitable places in the score, pointing to the performer's (i.e., live) material and serving as guideposts.

4. "BEAT-STROKES" OR "BEAT-BARS"

These graphic devices (usually measured in half seconds or seconds) are most effective if used with a metronome or a click track, at least during practicing and rehearsals. Without the help of audible devices, beat-strokes naturally are less reliable, because the musicians are unlikely to count long periods of silent beats with sufficient accuracy to reach certain points in their music at exactly the same moment as the tape.

5. FERMATAS

If the music permits, fermatas are ideally suited to help coordinate entrances of either the tape or the live music or actions. (They can also help "lost" performers to find their places!)

C. Place of Tape Cues in Scores or Parts

It is best to place cues above the music. In piano music and other music notated on two staves, certain cues—especially rhythmic ones—may be placed between the staves as long as they do not interfere with dynamic markings, etc. In full scores, tape cues should be placed in the solo area above the strings.

If the tape sounds come from two or more speakers, cues are often separated, appearing above and below the music. This is not recommended for scores, where all cues, regardless of the number of speakers they represent, should always appear above the strings, on as many lines or staves as necessary.

In case of an unusually large number of speakers and cue lines, decisions will have to be made from case to case. No universally appropriate practices have been developed as yet.

Continuous versus Interrupted Tape

From a purely practical point of view, continuous tape is preferable to interrupted tape because it obviates the need for coordinating the tape operator(s) with the performer(s). Even so, certain tape events must be cued into the live music to assure proper synchronization.

If, on the other hand, the taped sound includes prolonged silences, one or more tape operators become necessary. In such cases, all tape entrances and stops must be cued carefully with identifying letters or numerals, on the tape leaders as well as in the score.

Appendix I: Neumatic Notation (Plainchant or Gregorian Chant) and Later Developments

The earliest music notation of the Christian era dates back to the ninth century and consists of neumes (from the Greek word meaning melody). Neumes are signs which, according to one hypothesis, derived from conductors' hand motions tracing the up and down movement of melody lines. Neumes generally were placed above the liturgical texts intended to be chanted.

Unlike modern notes, early neumes showed neither exact pitches nor durations. The imprecision of pitches was overcome when the neumes were placed on, above, or below horizontal lines which increased in number and eventually became standardized as the four-line staff still in use in modern publications of Roman Catholic plainchant (Gregorian chant).

While exact pitch notation was thus accomplished, no durational information was ordinarily conveyed. Whatever durational signs and interpretations are found in modern editions of Gregorian chant are usually recent additions.

The neume signs themselves became more and more stylized, until by the thirteenth century they had become the square- and diamond-shaped note-heads which to this day are found in publications of Gregorian chants, such as the *Liber Usualis* (LU). This collection, issued by the Benedictine monks of Solesmes, was first published in 1904 and represents the presently most widely accepted version of many chants.

Twentieth-century musicians must familiarize themselves with plainchant notation if they wish to deal with the music it represents, and especially if they wish to incorporate plainchant material in a composition.*

The following charts show the neumes as used in the Solesmes editions, and their modern equivalents.

* Even though the Roman Catholic church has moved away from using traditional plainchant in the service, chiefly because of the recent change from Latin to vernacular languages, the music itself continues of course to be of undiminished historical and musical value.