Queezinart—hocket in a blender

for chamber ensemble

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

Andriy Talpash

McGill University, Montréal

March 1999

Abstract

Queezinart – hocket in a blender is a composition for five woodwinds, five brass, percussion (two players), piano, two violins, viola, cello and double bass, with a duration of approximately 14 minutes. There are six main sections in this piece. The work is structured so that musical ideas flow smoothly and gradually between sections. Also, the musical events are organized in such a way that the perceived, experienced time is manipulated and distorted, through varying activity and density of musical events.

Acknowledgments

I would like to express my appreciation to the following: Prof. Brian Cherney for his knowledge and valuable guidance; Prof. Denys Bouliane for taking the time to learn and conduct this work; members of the McGill Contemporary Music Ensemble for the preparation and performance of the work; Scott Godin for his advice and being himself; my family for lifelong support; and my wife Lesia for her endless love and inspiration.

Contents

Queezinart—hocket in a blender

for chamber ensemble

Instrumentation:

flute
oboe, doubling on 2 crystal glasses (tuned to A4 and Bb4)
clarinet in B flat
bass clarinet in B flat, doubling on clarinet in B flat
bassoon, doubling on 2 crystal glasses (tuned to D5 and E5)

horn in F
trumpet in B flat
trombone
bass trombone
tuba

percussion 1:
glockenspiel, marimba, triangle, suspended cymbal, 4 small Chinese gong cymbals, 2 bongos, 4 low tom-toms, bass drum

percussion 2:
crotales, vibraphone (motor off), 2 wood blocks, 4 cowbells, automobile brake drum, bell tree, suspended cymbal, large tam-tam, timpani (tuned to E2, Bb2, D3, A3)

piano

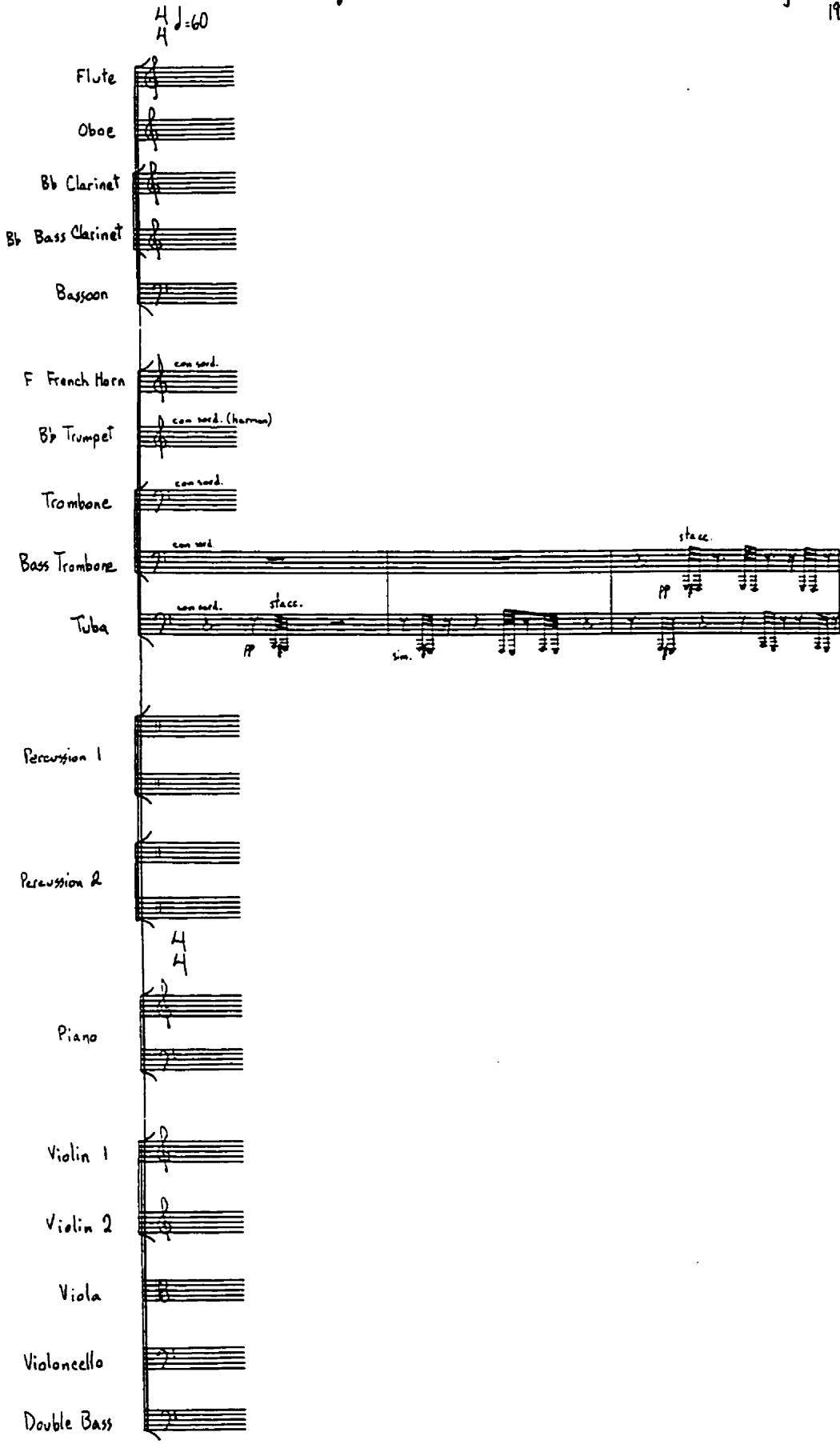
2 violins
viola
violoncello
double bass (with a low C extension)

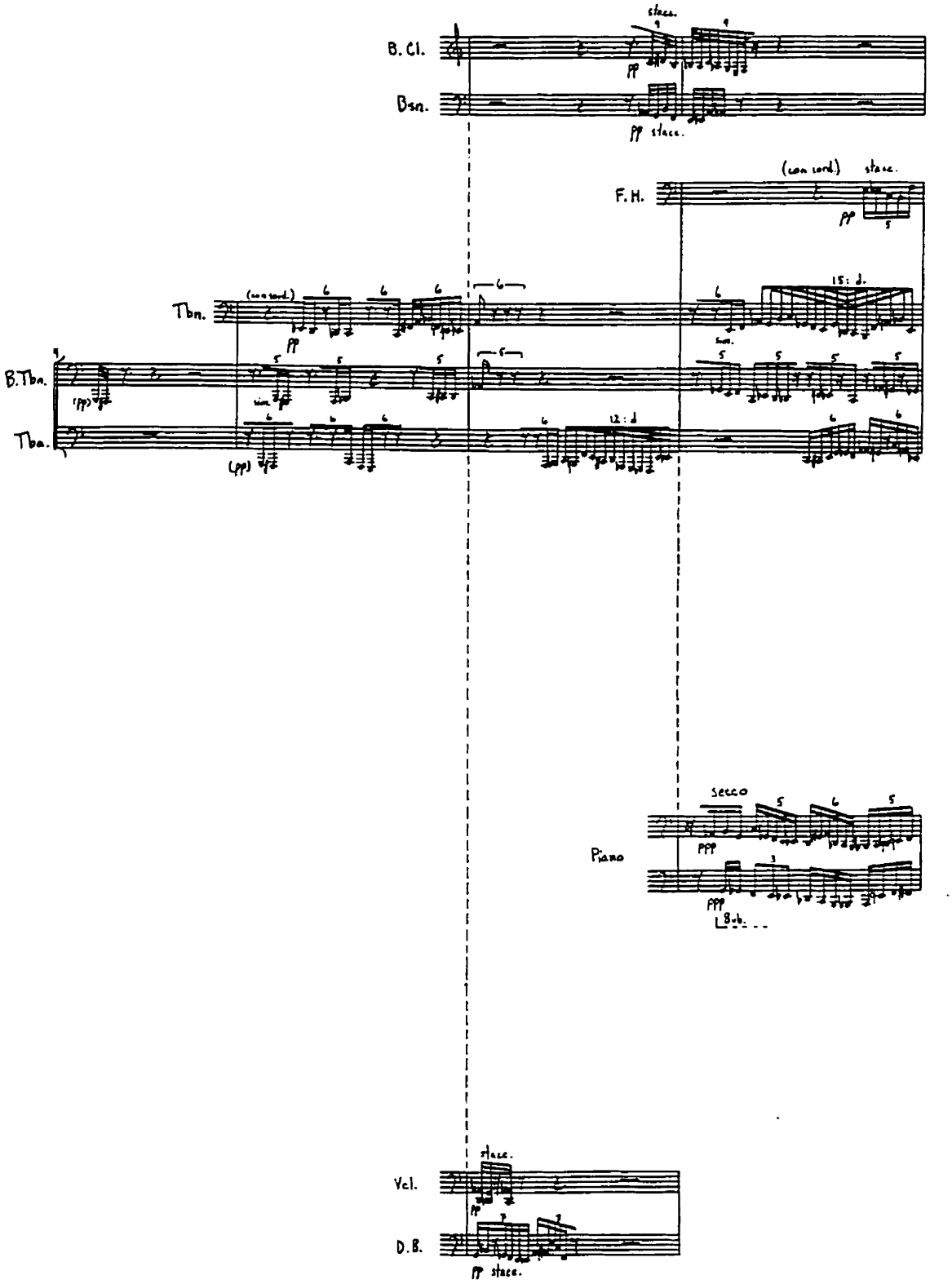
This is a transposed score.

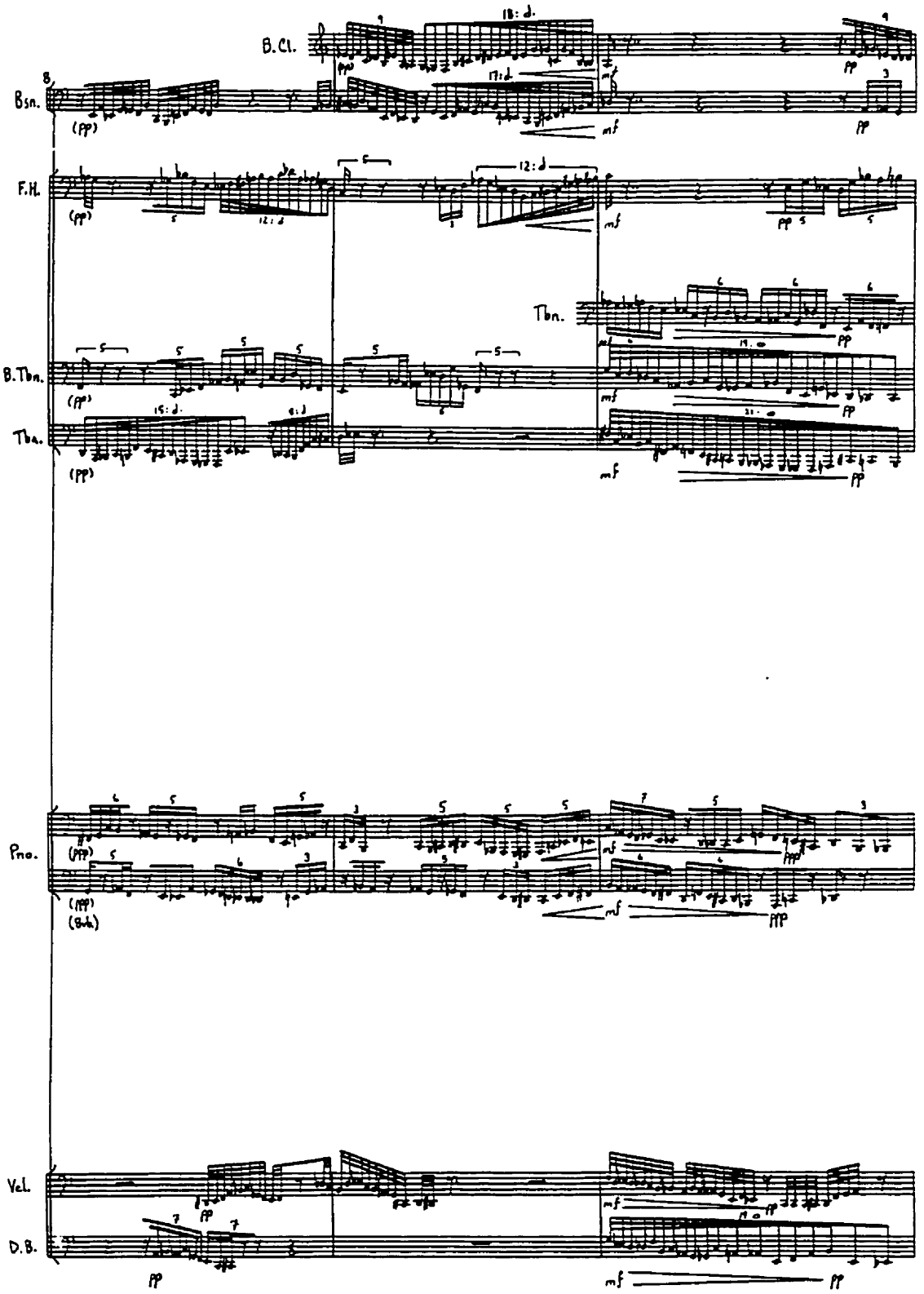
Duration: approximately 14'.

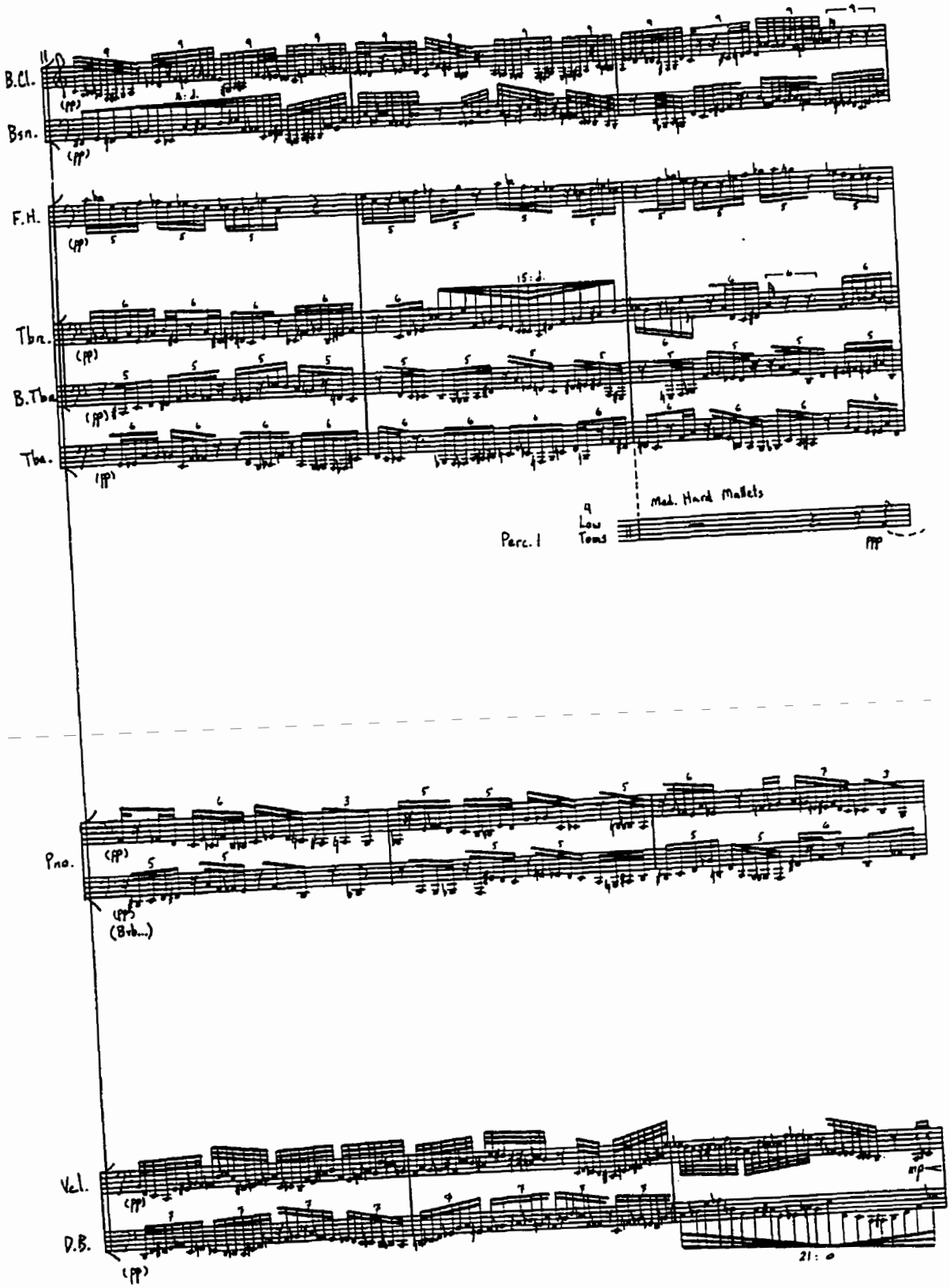
"Queezinart - hocket in a blender"

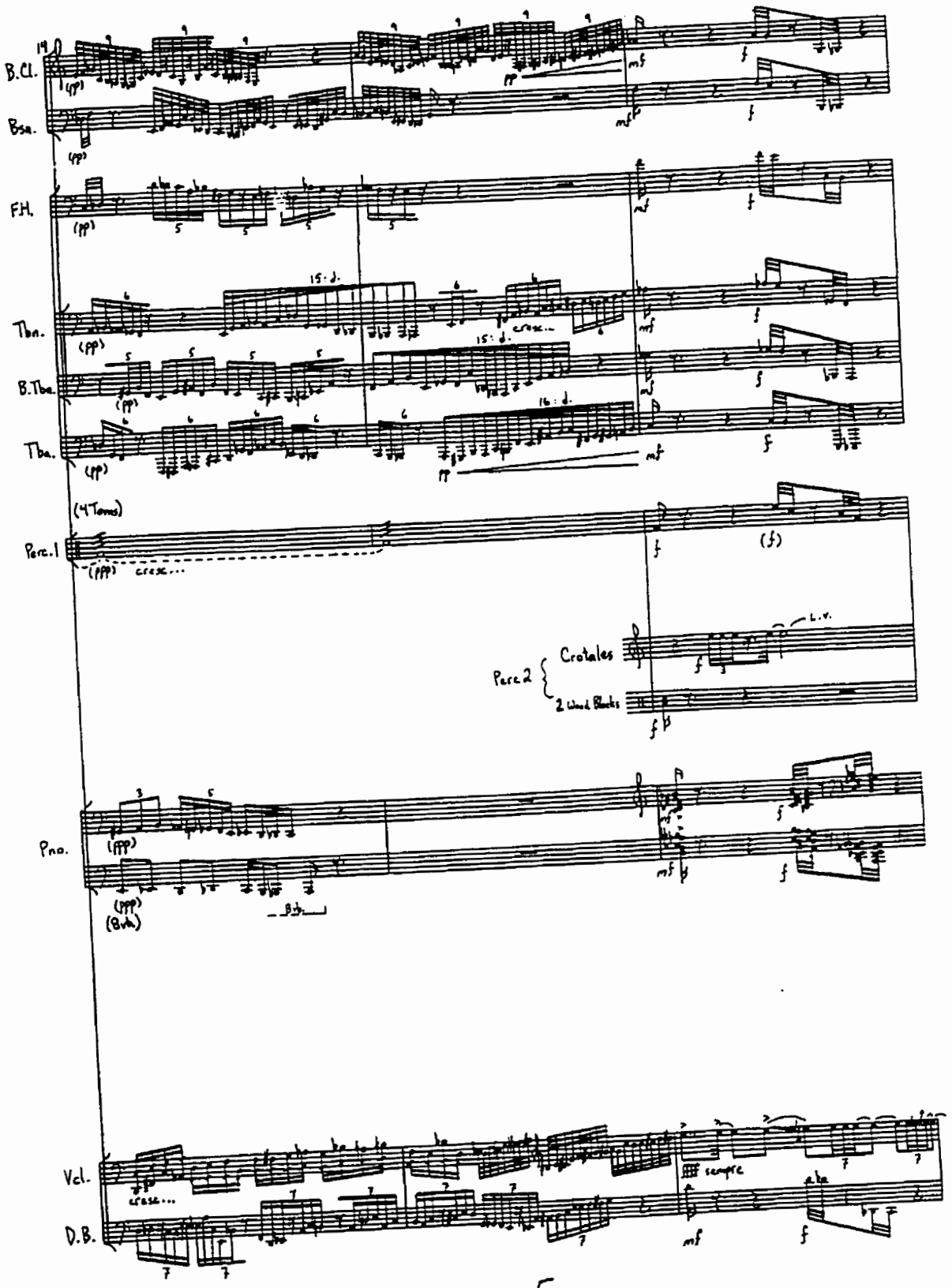
- Andriy Talpash
1998

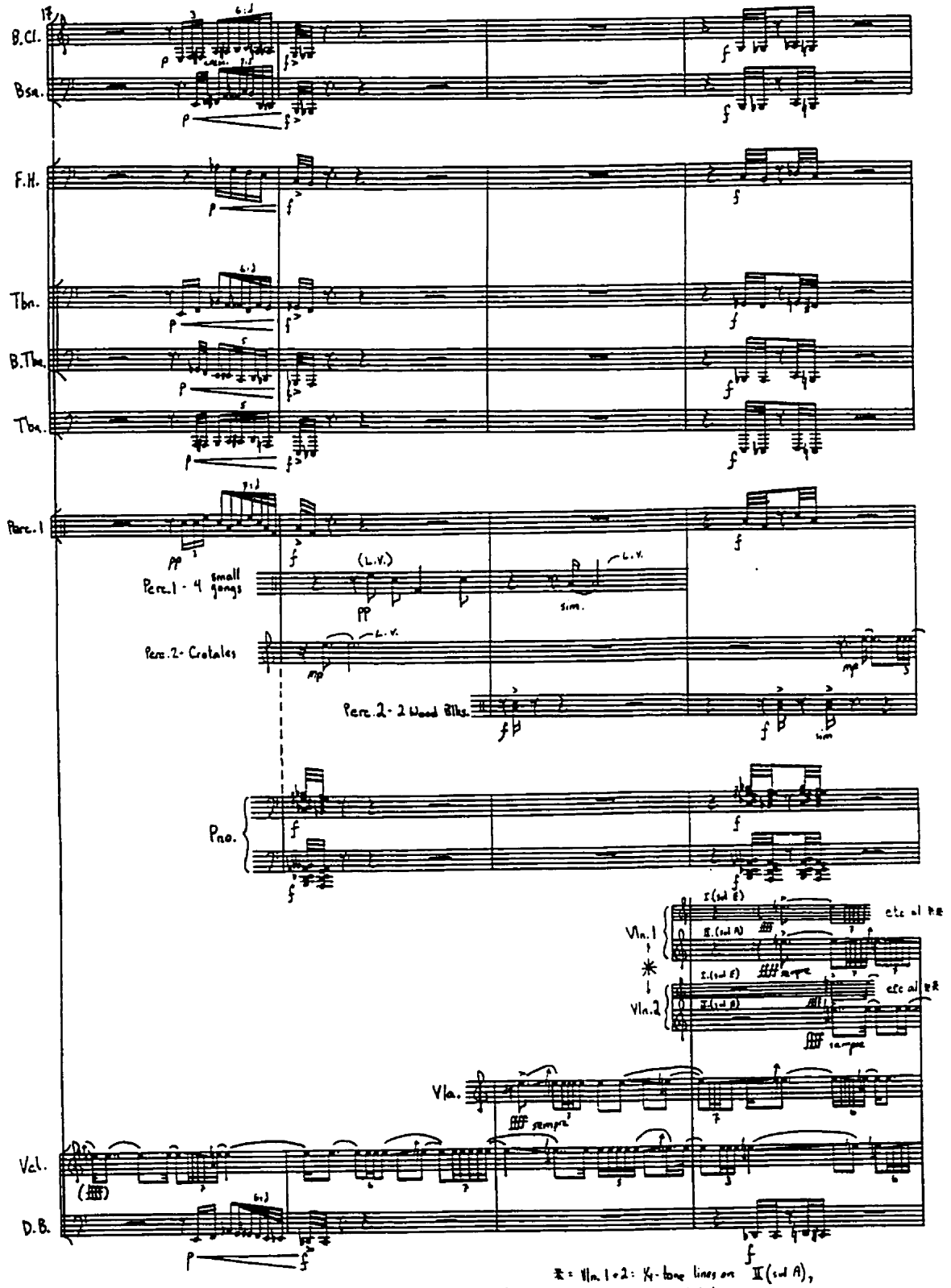


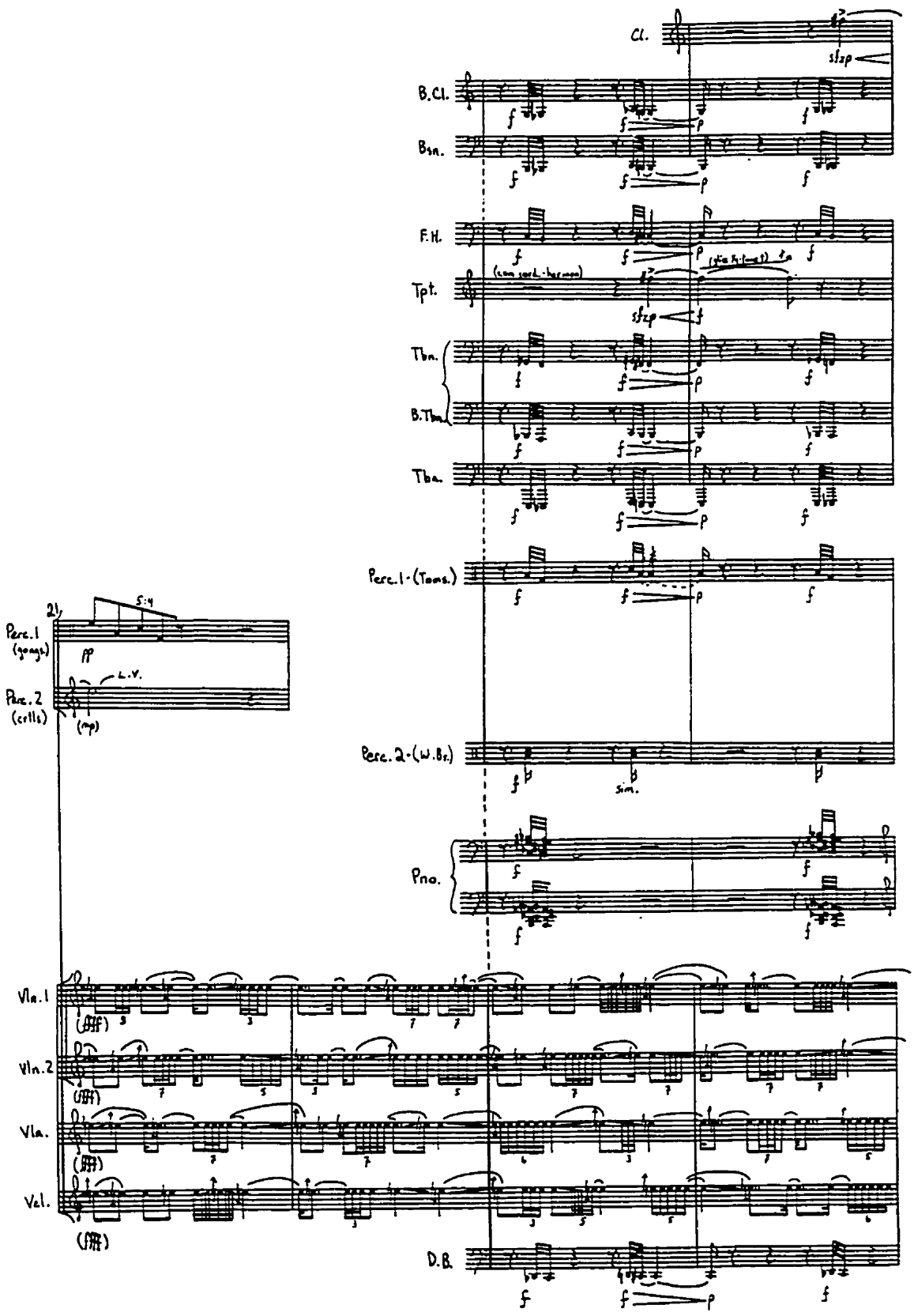

B. Cl.
stacc.
pp
Bsn.
pp stacc.
F. H.
(con sord.)
stacc.
pp
Tbn.
(con sord.)
pp
15: d.
B. Tbn.
(pp)
Tba.
(pp)
12: d
Piano
Secco
ppp
ppp
8va
Vcl.
stacc.
pp
D. B.
pp stacc.

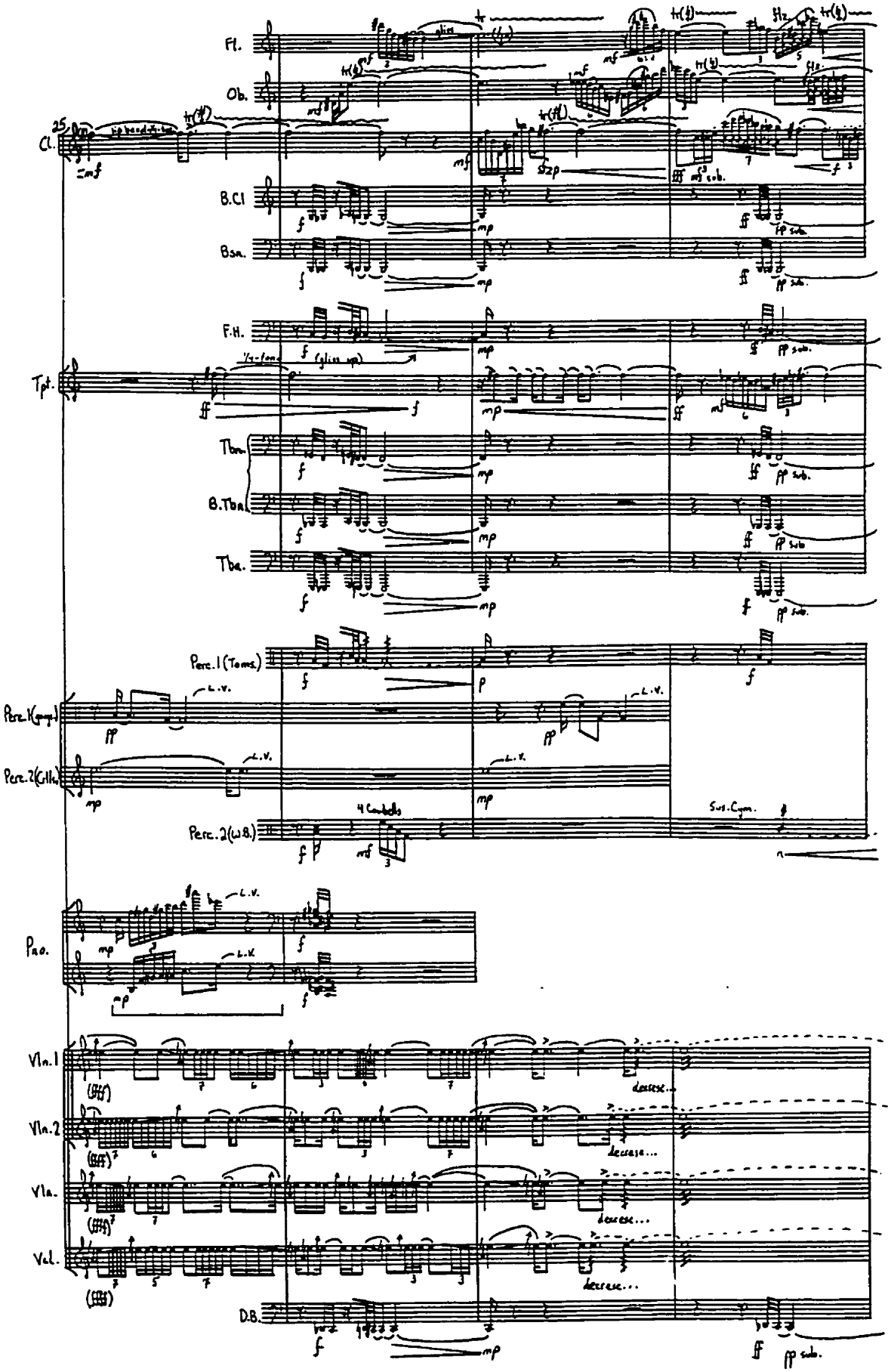

B.Cl.
Bsn.
F.H.
Tbn.
B.Tbn.
Tba.
Pno.
Vcl.
D.B.

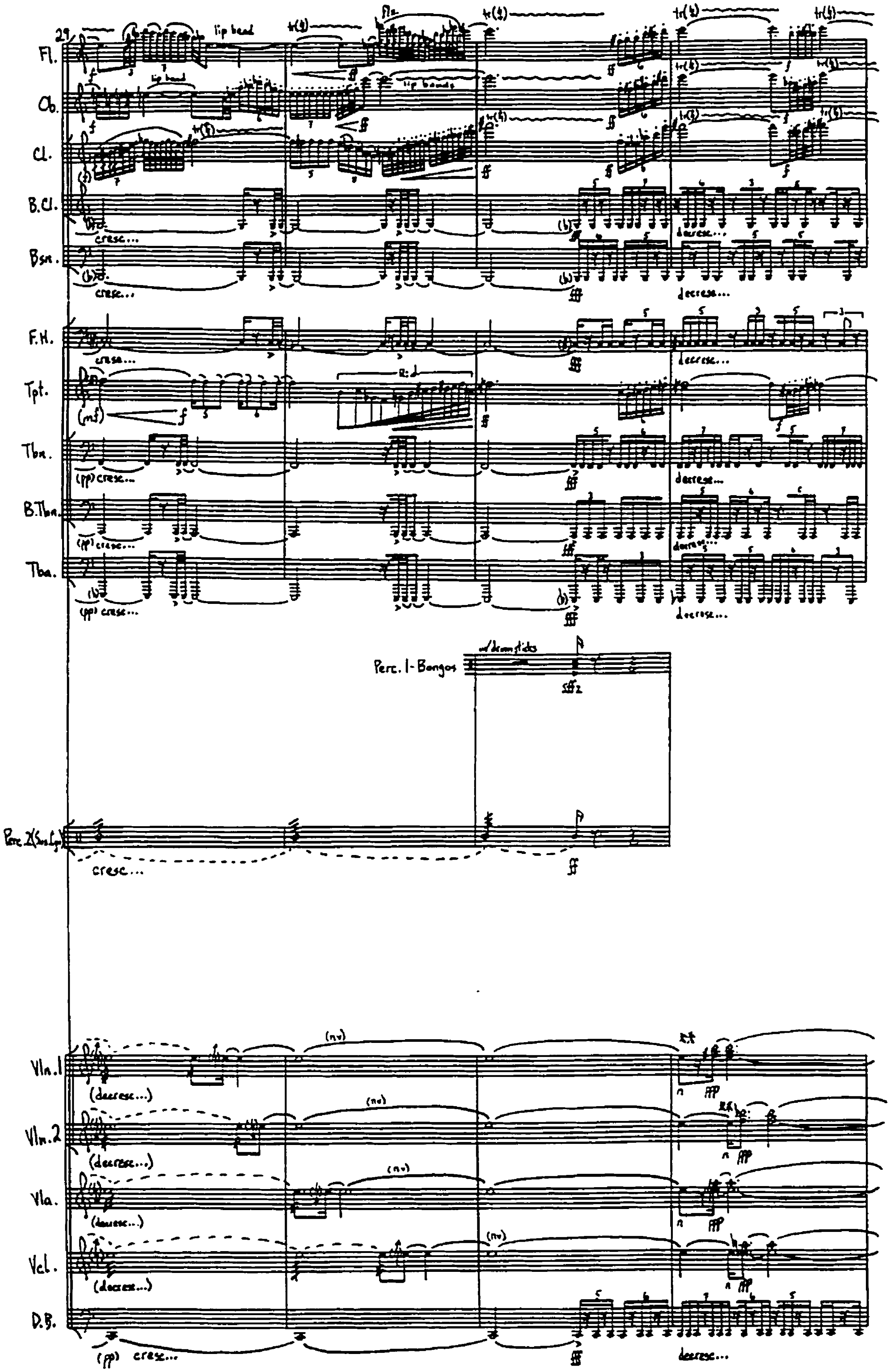

B.Cl.
Bsn.
F.H.
Tbn.
B.Tba.
Tba.
Perc. 1
9
Low
Toms
Med. Hard Mallets
Pno.
(8vb...)
Vcl.
D.B.

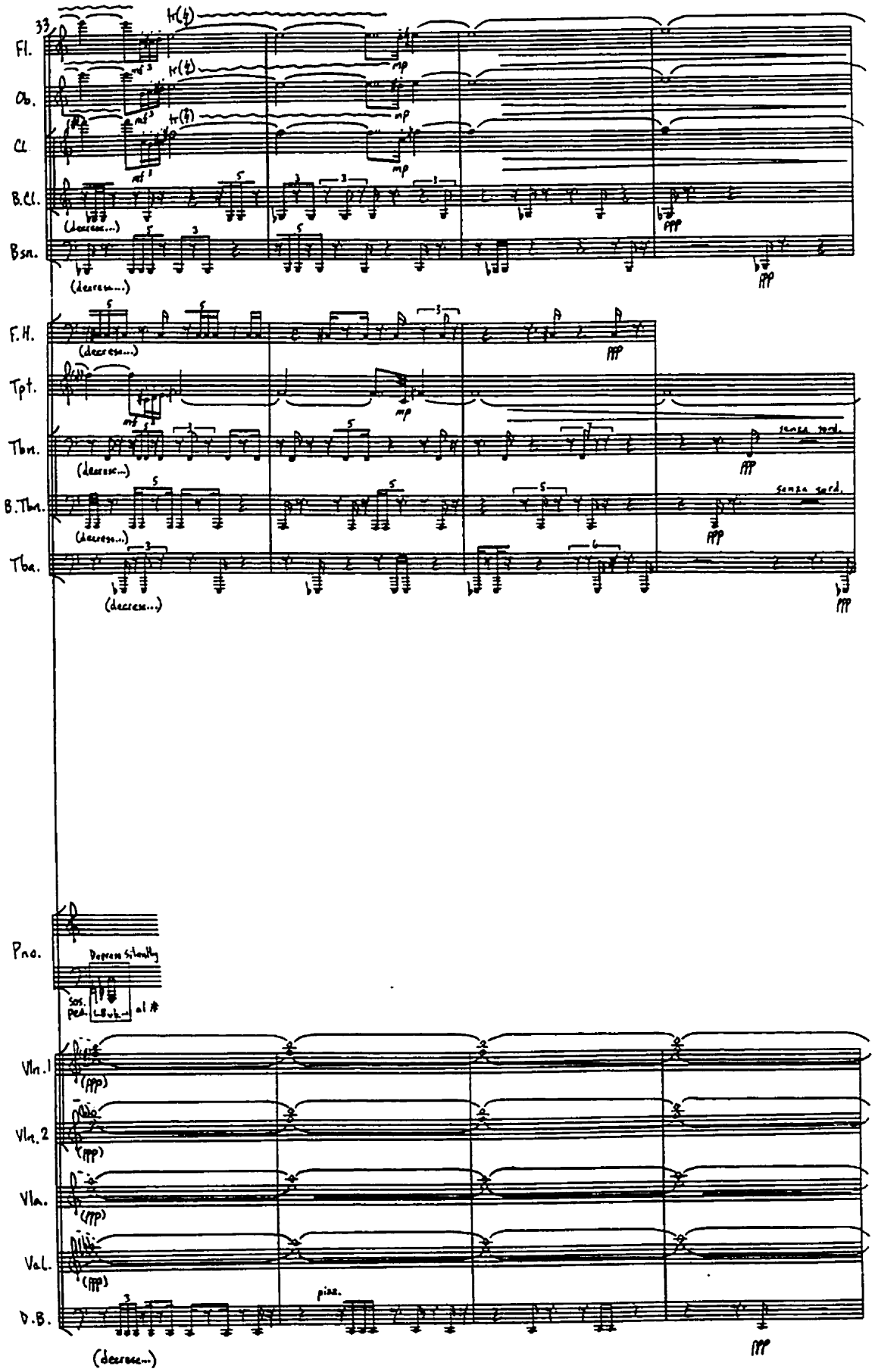

19
B.Cl.
Bsn.
F.H.
Tbn.
B.Tbn.
Tba.
(4 Tones)
Perc.1
Perc.2
Crotales
2 Wood Blocks
Pno.
Vcl.
D.B.
sempre

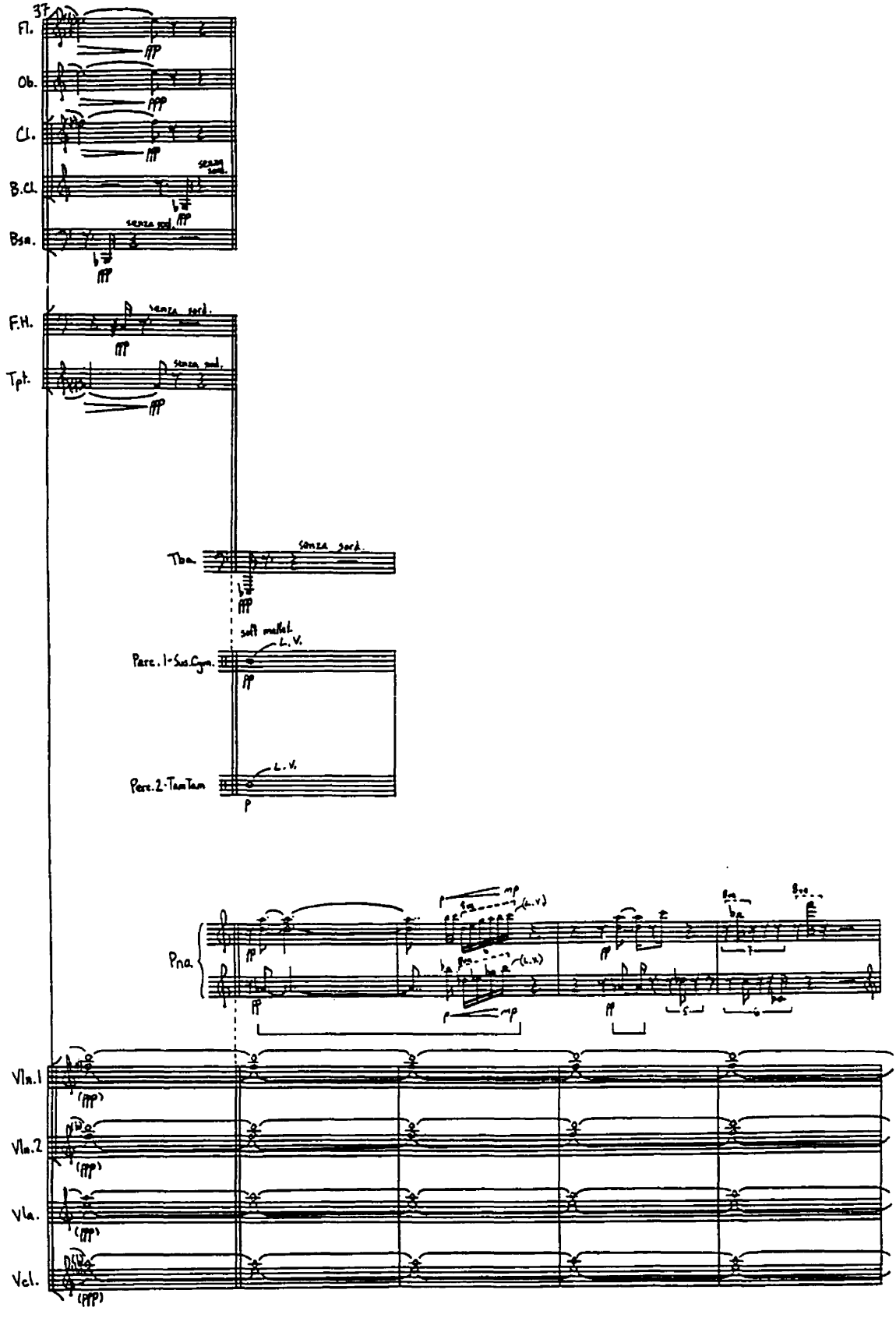

B.Cl.
Bsn.
F.H.
Tbn.
B.Tbn.
Tba.
Perc.1
Perc.1 - 4 small gongs
Perc.2 - Crotales
Perc.2 - 2 Wood Blks.
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
(L.V.)
sim.
sempre
etc al fine
* = Vln. 1+2: ½-tone lines on II (sul A), and I (E) remains open; therefore double stops.

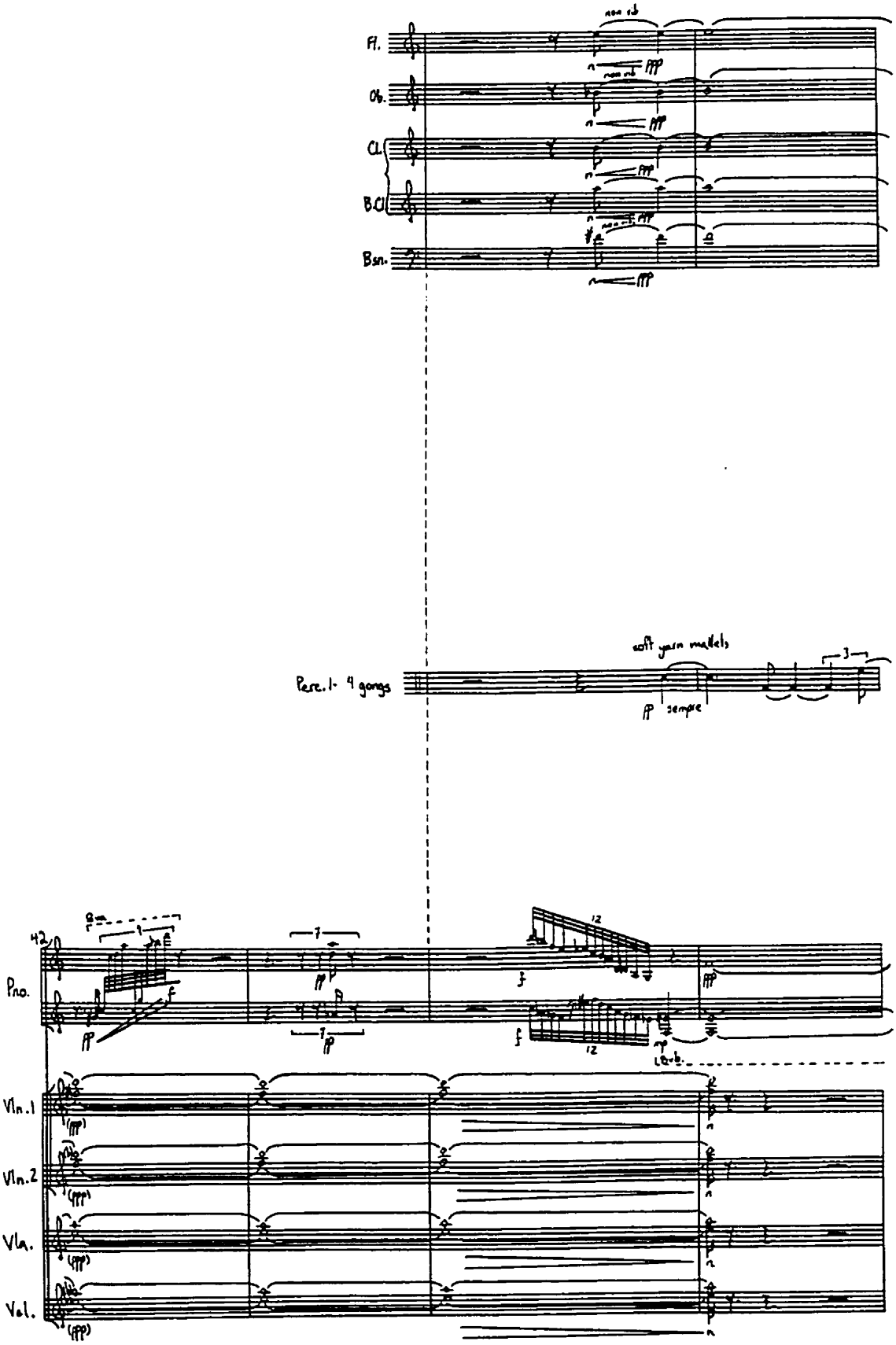

Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1 - (Toms.)
Perc.2 - (W.Bl.)
Pno.
Perc.1 (gongs)
Perc.2 (cells)
Vln.1
Vln.2
Vla.
Vcl.
D.B.

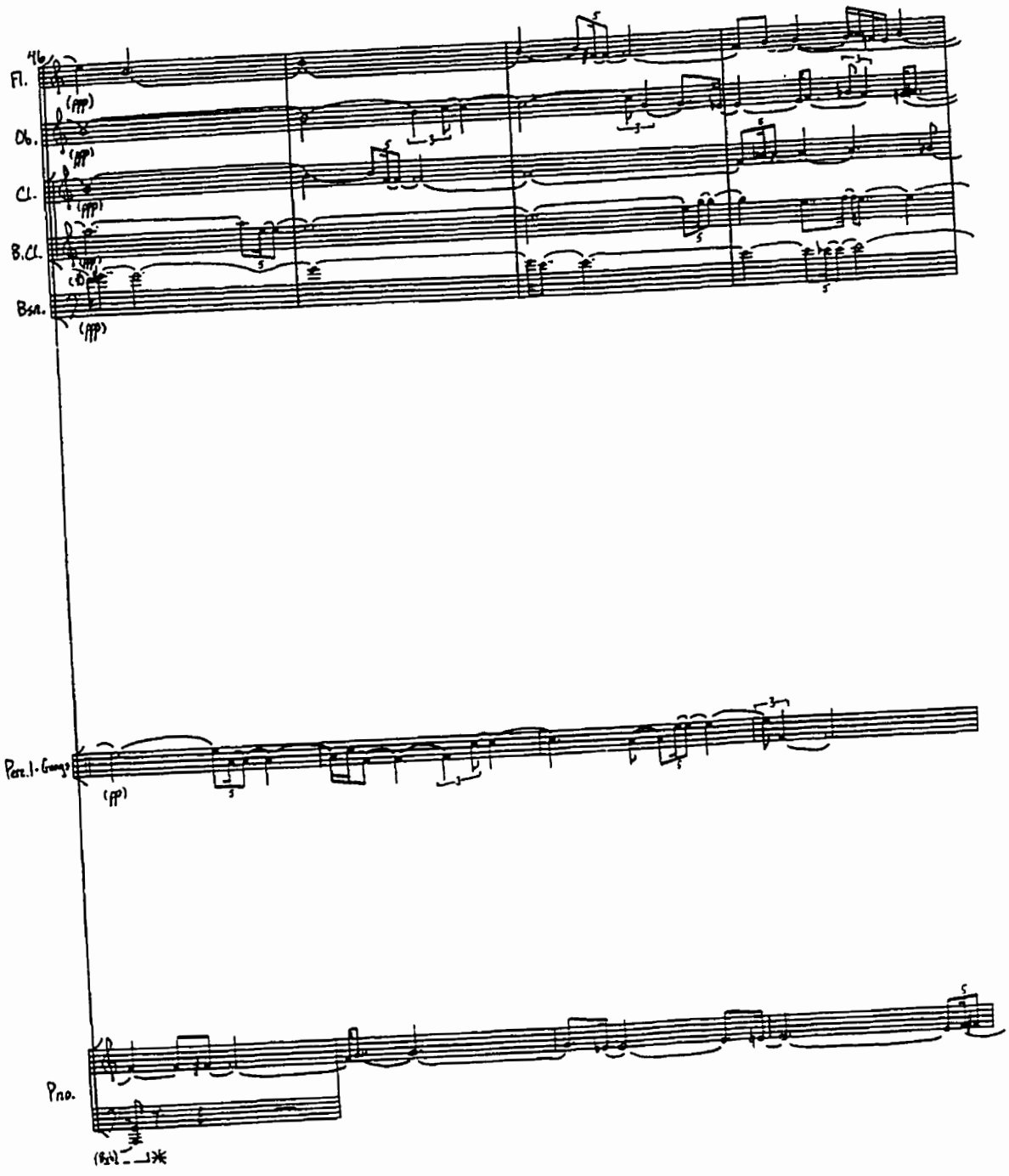

Fl.
Ob.
25
Cl.
B.Cl
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1 (Toms.)
Perc.1(Cymb.)
Perc.2(Cello)
Perc.2(w.B.)
4 Cowbells
Sus.Cym.
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
decrese...

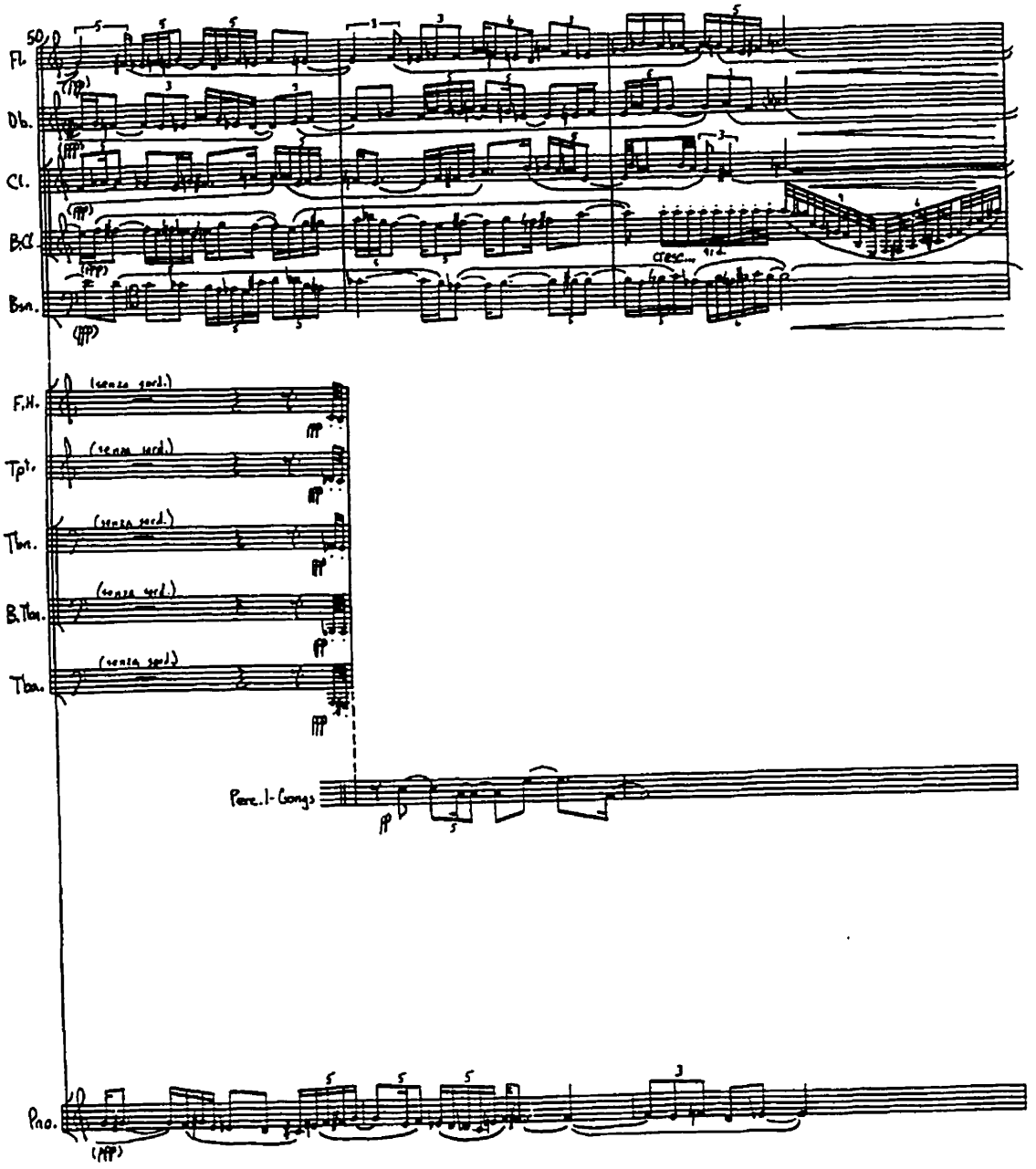

29
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc. 1 - Bongos
Perc. 2
Vln. 1
Vln. 2
Vla.
Vcl.
D.B.
lip bend
lip bends
cresc...
decresc...
(decresc...)
(nv)
sffz

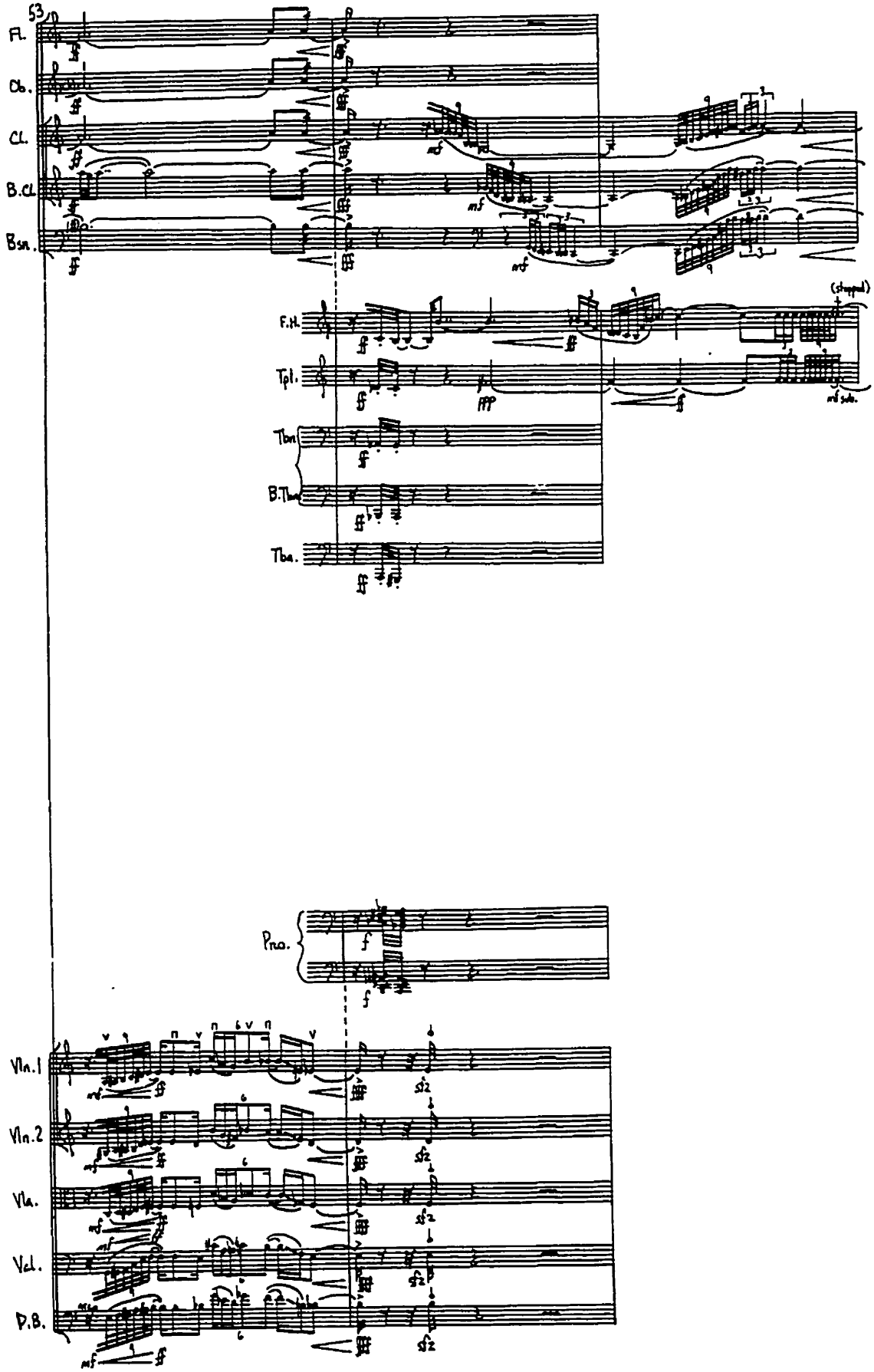

33
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Pno.
Vln.1
Vln.2
Vla.
Vc.
D.B.
tr(♯)
mp
mf
(decresc...)
fff
(ppp)
senza sord.
Depress Silently
sos. ped.
pizz.

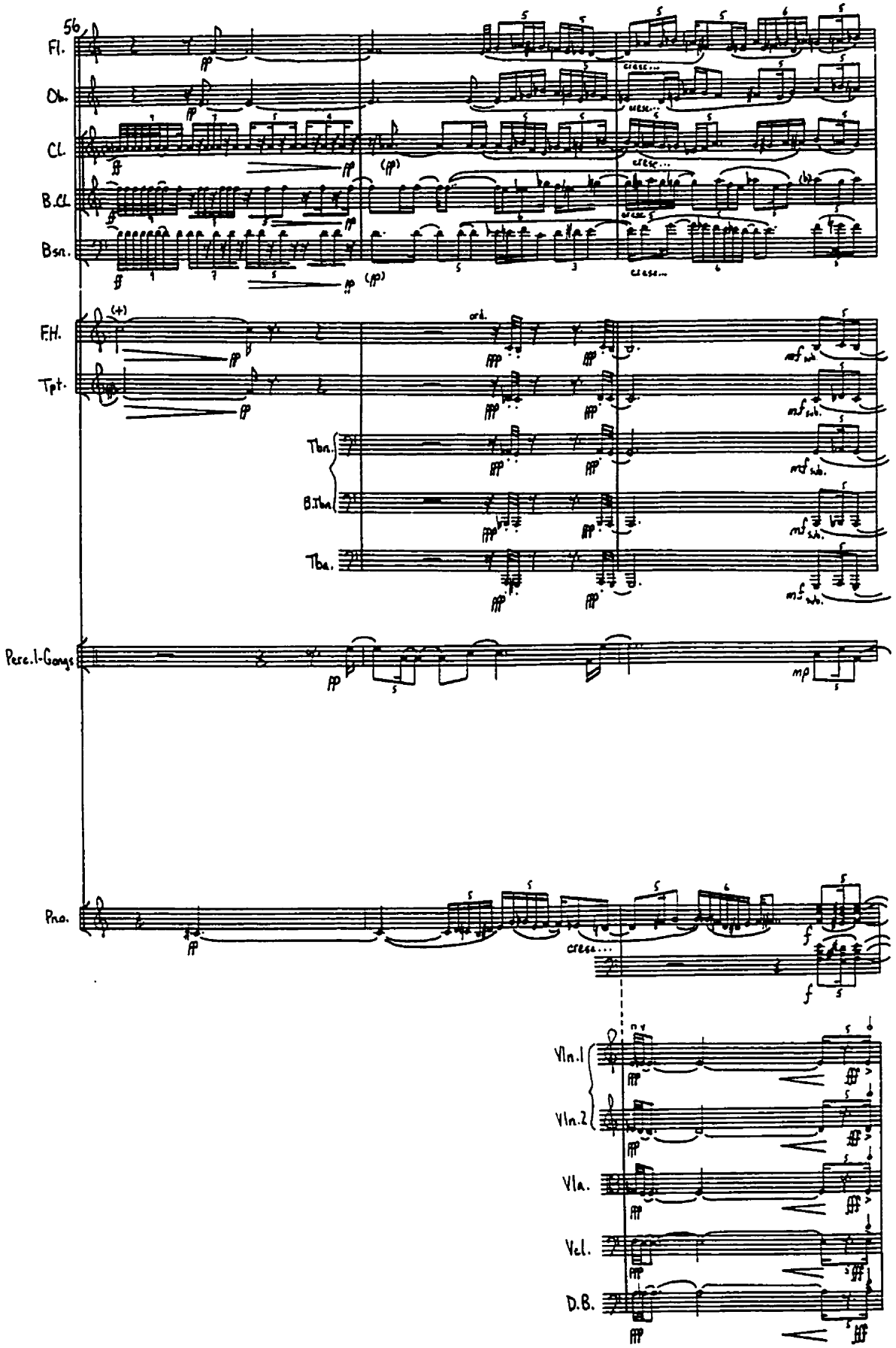

37
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tba.
Perc.1-Sus.Cym.
Perc.2-TamTam
Pno.
Vln.1
Vln.2
Vla.
Vcl.
senza sord.
soft mallet
L.V.

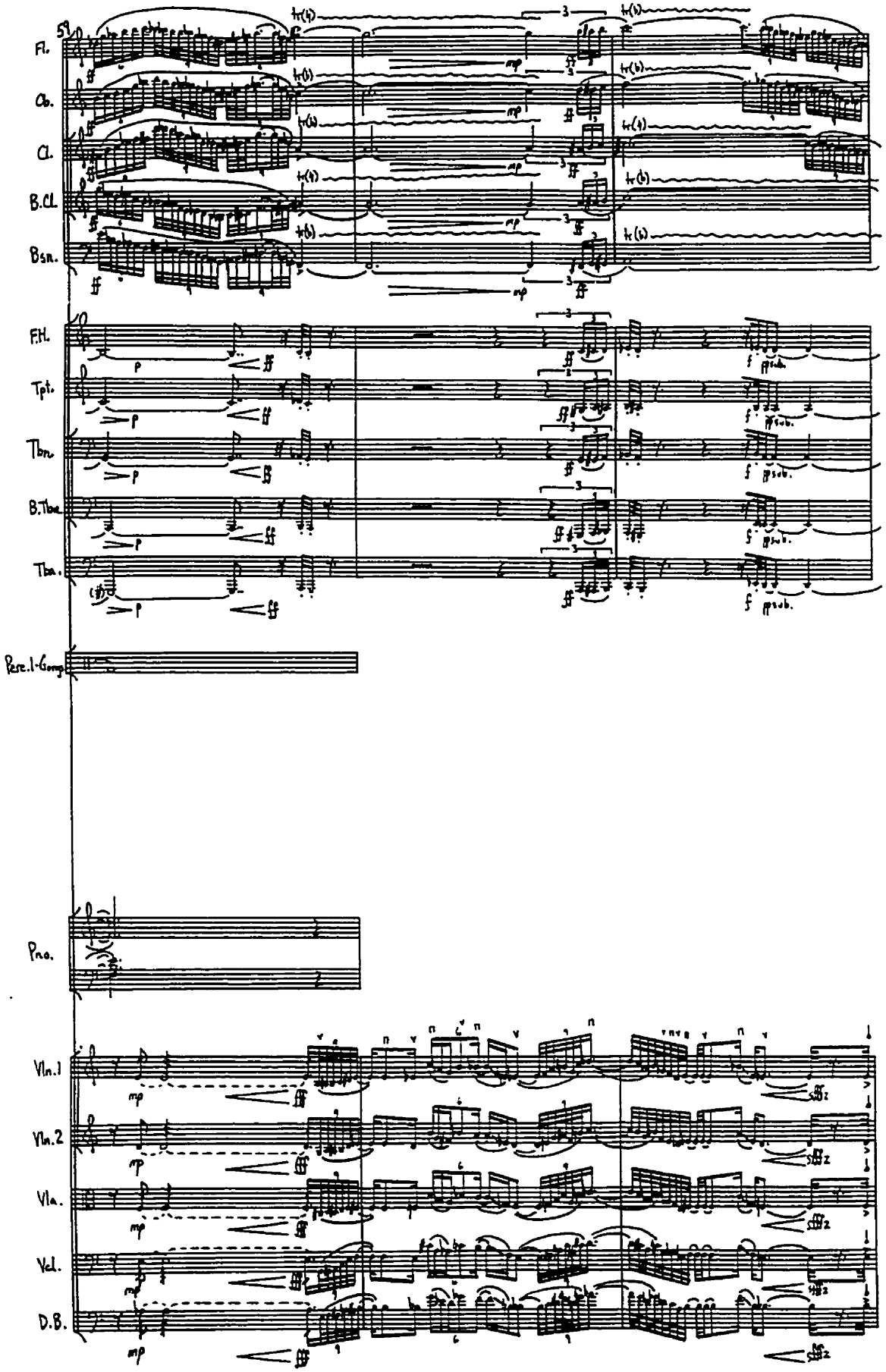

non vib
Fl.
Ob.
Cl.
B.Cl
Bsn.
soft yarn mallets
Perc.1- 4 gongs
sempre
42
Pno.
Vln.1
Vln.2
Vla.
Vc.

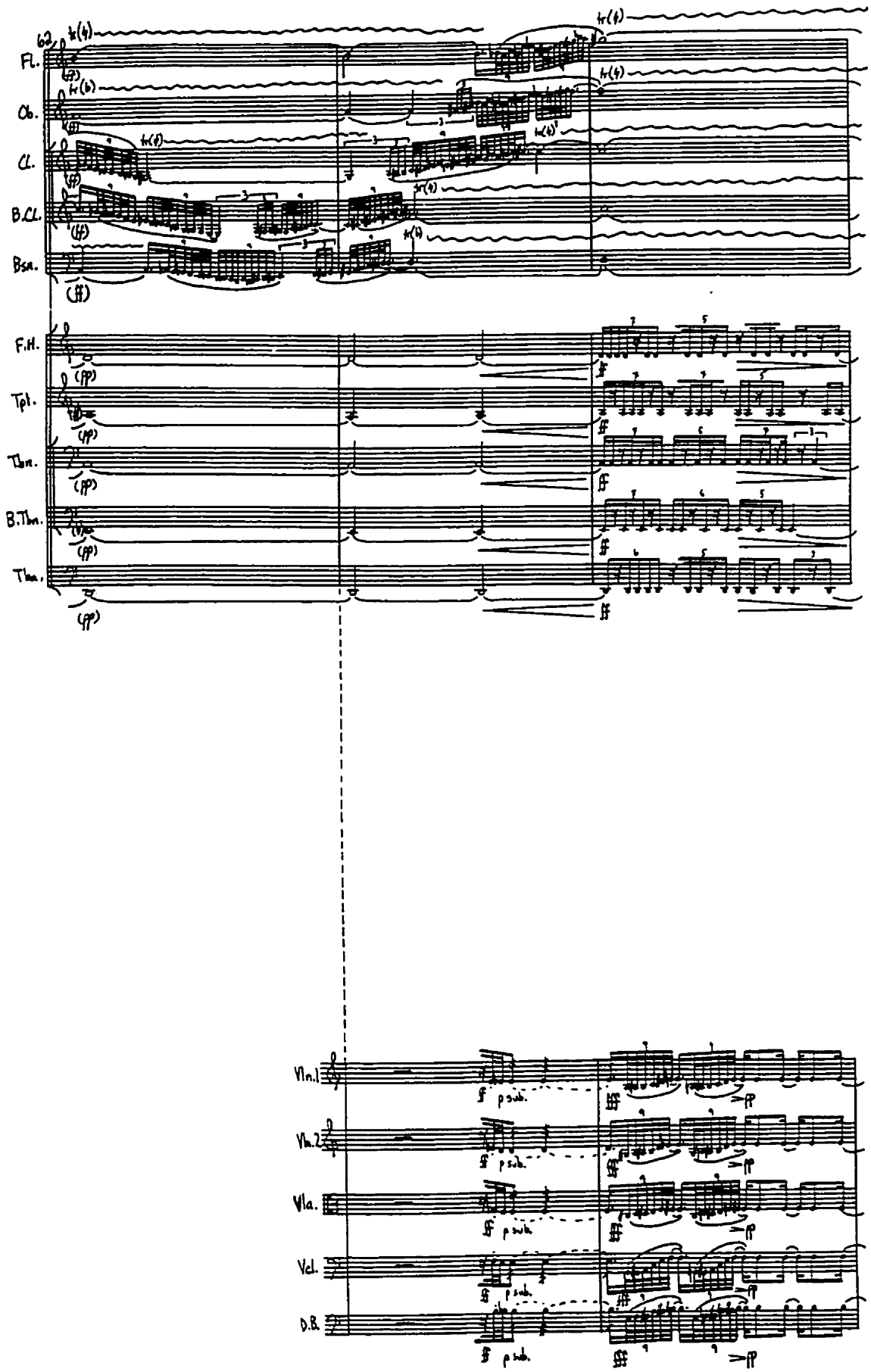

46
Fl.
Ob.
Cl.
B.Cl.
Bsn.
Perc.1 - Gongs
Pno.

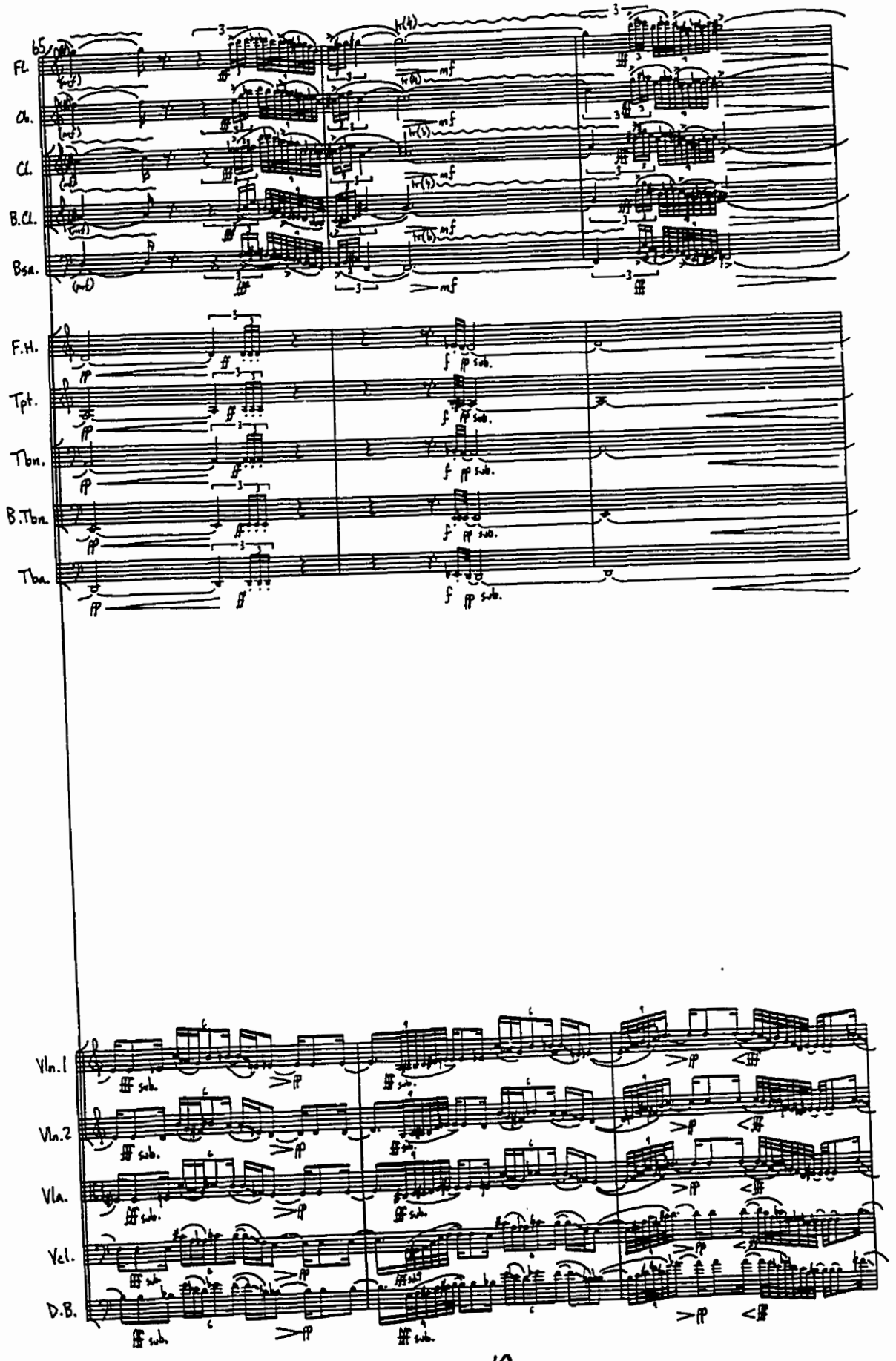

50
Fl.
Ob.
Cl.
B.Cl.
Bsn.
(fff)
cresc.
F.H.
(senza sord.)
mf
Tpt.
ff
Tbn.
B.Tbn.
Tba.
fff
Perc.1-Gongs
fp
Pno.
(fff)

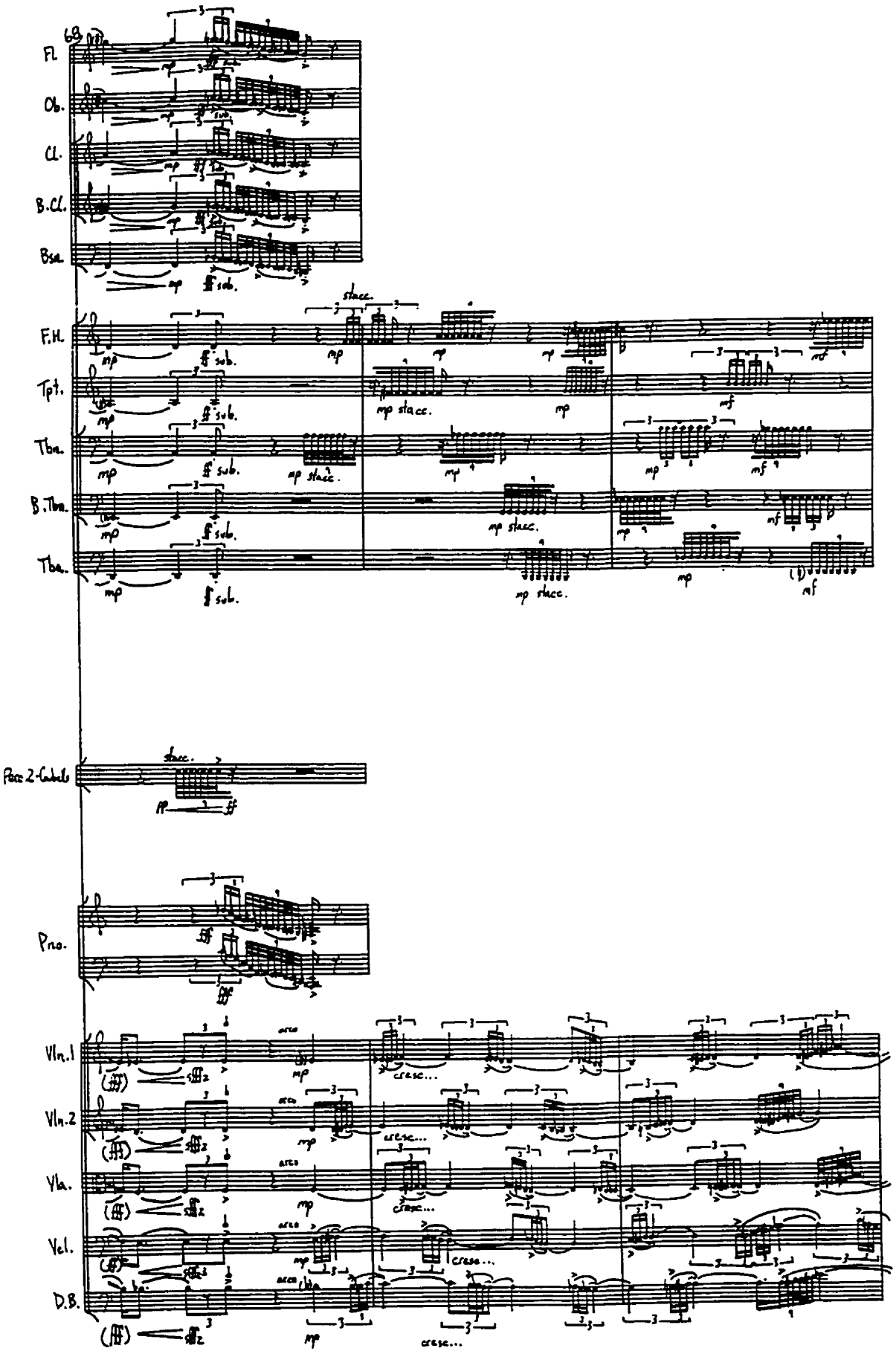

53
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
(stopped)
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.

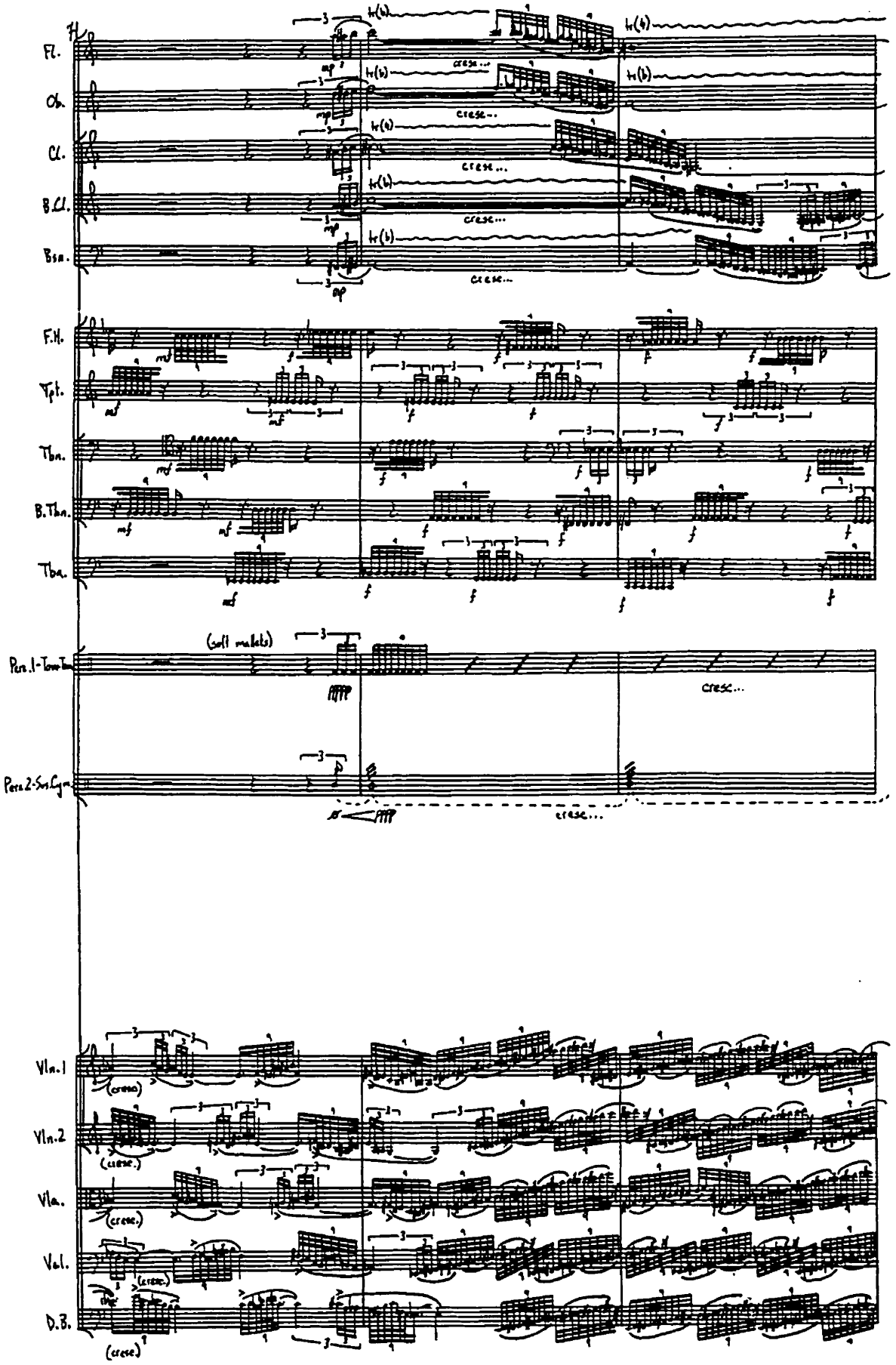

56
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Ten.
B.Tba.
Tba.
Perc.1-Gongs
Pno.
Vln.1
Vln.2
Vla.
Vc.l.
D.B.

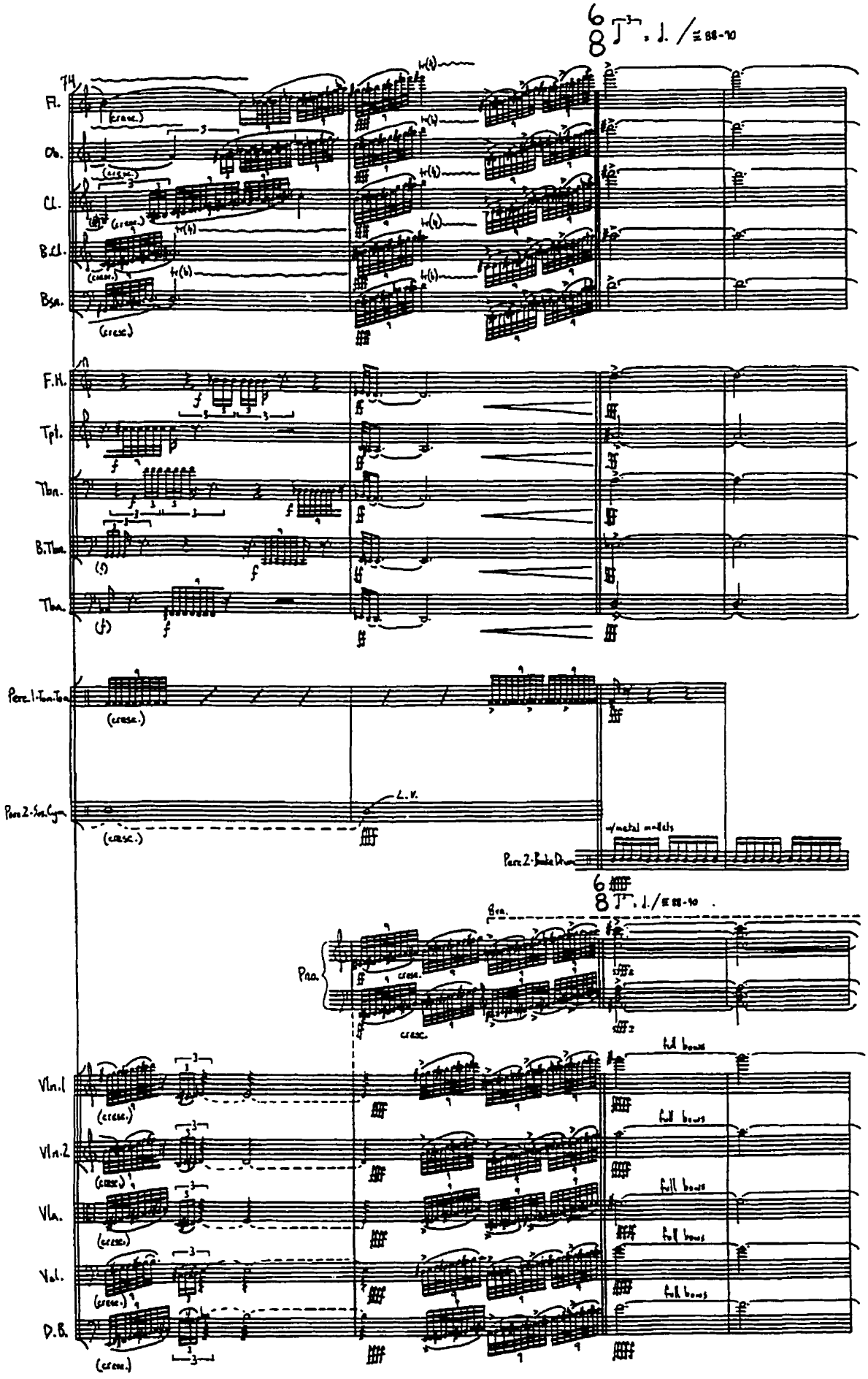

59
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tba.
Tba.
Perc.1-Comp.
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.

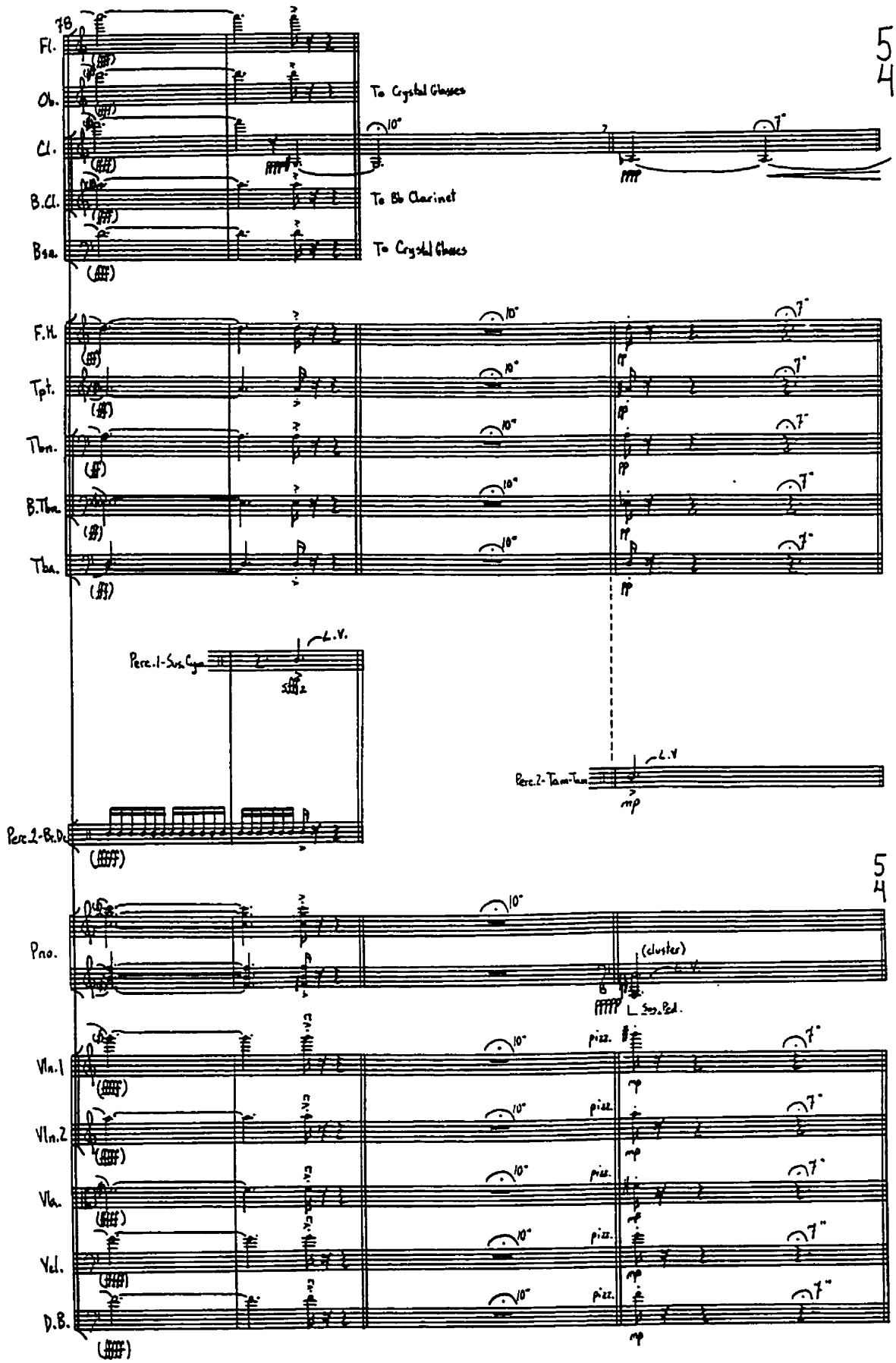

Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Vln.1
Vln.2
Vla.
Vcl.
D.B.

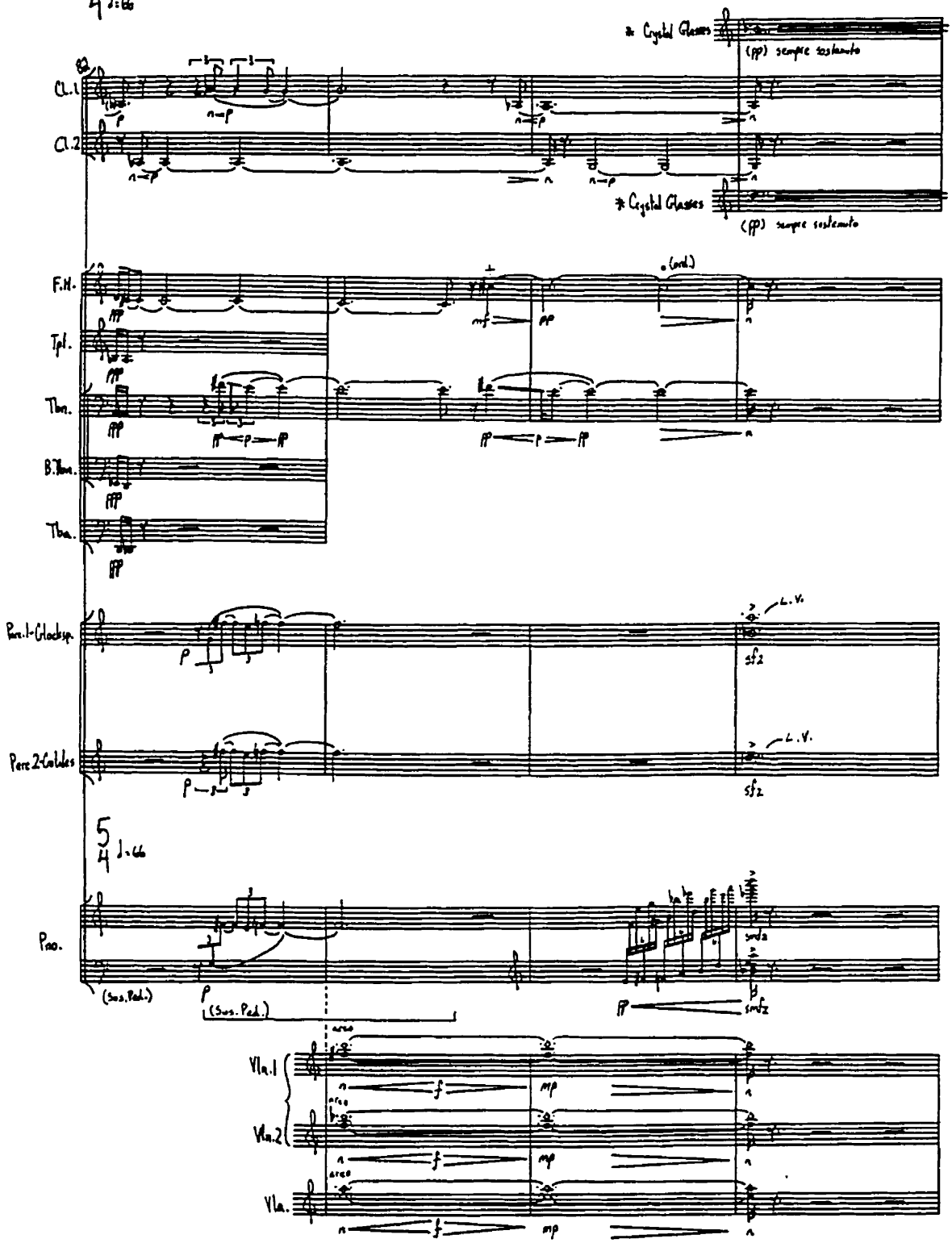

65
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Vln.1
Vln.2
Vla.
Vcl.
D.B.


68
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc 2-Cymbals
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
stacc.
mp
ff sub.
mf
cresc...
arco

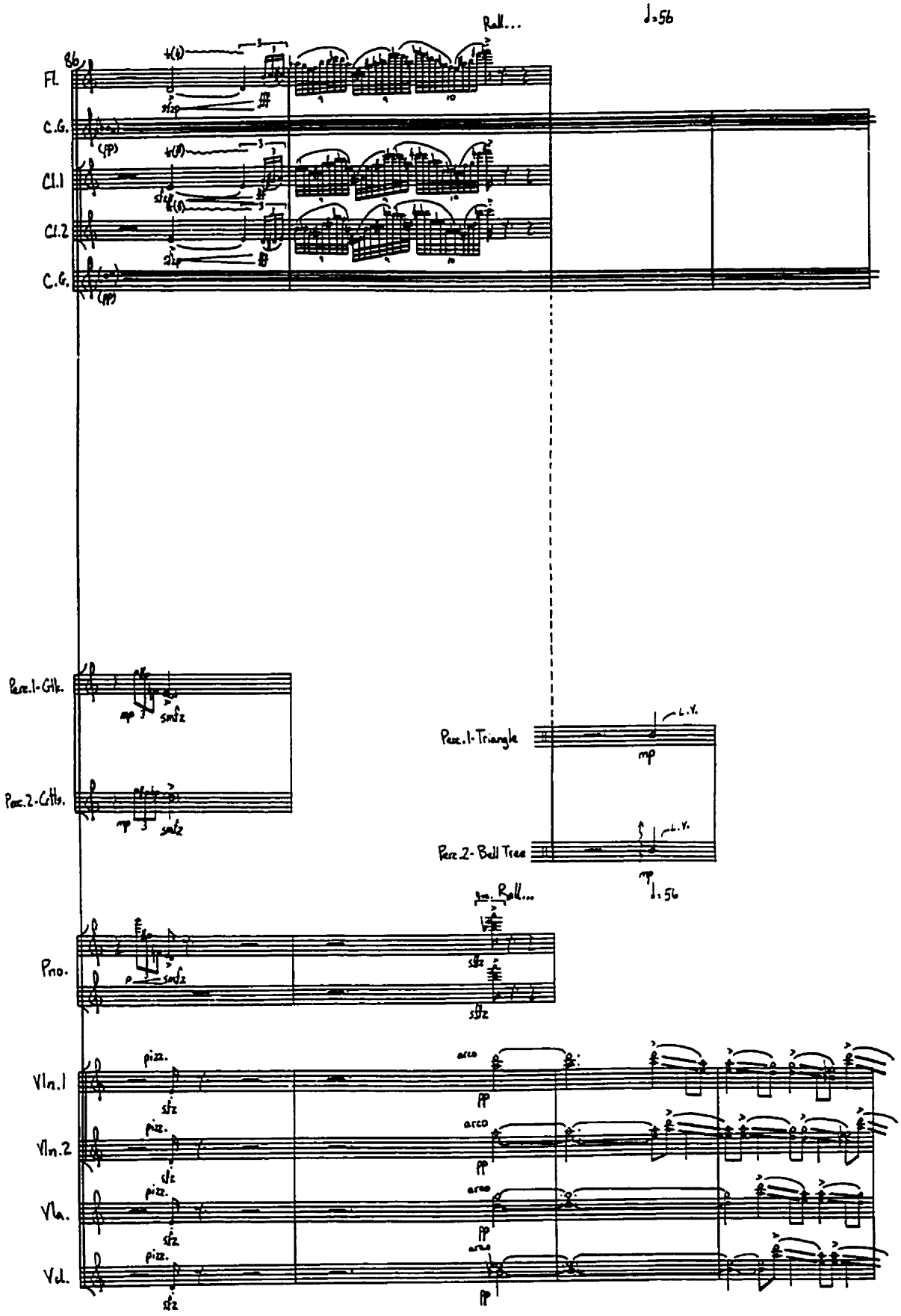

Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1-Tom-Tom
(soft mallets)
cresc...
Perc.2-Sus.Cym
Vln.1
Vln.2
Vla.
Vcl.
D.B.

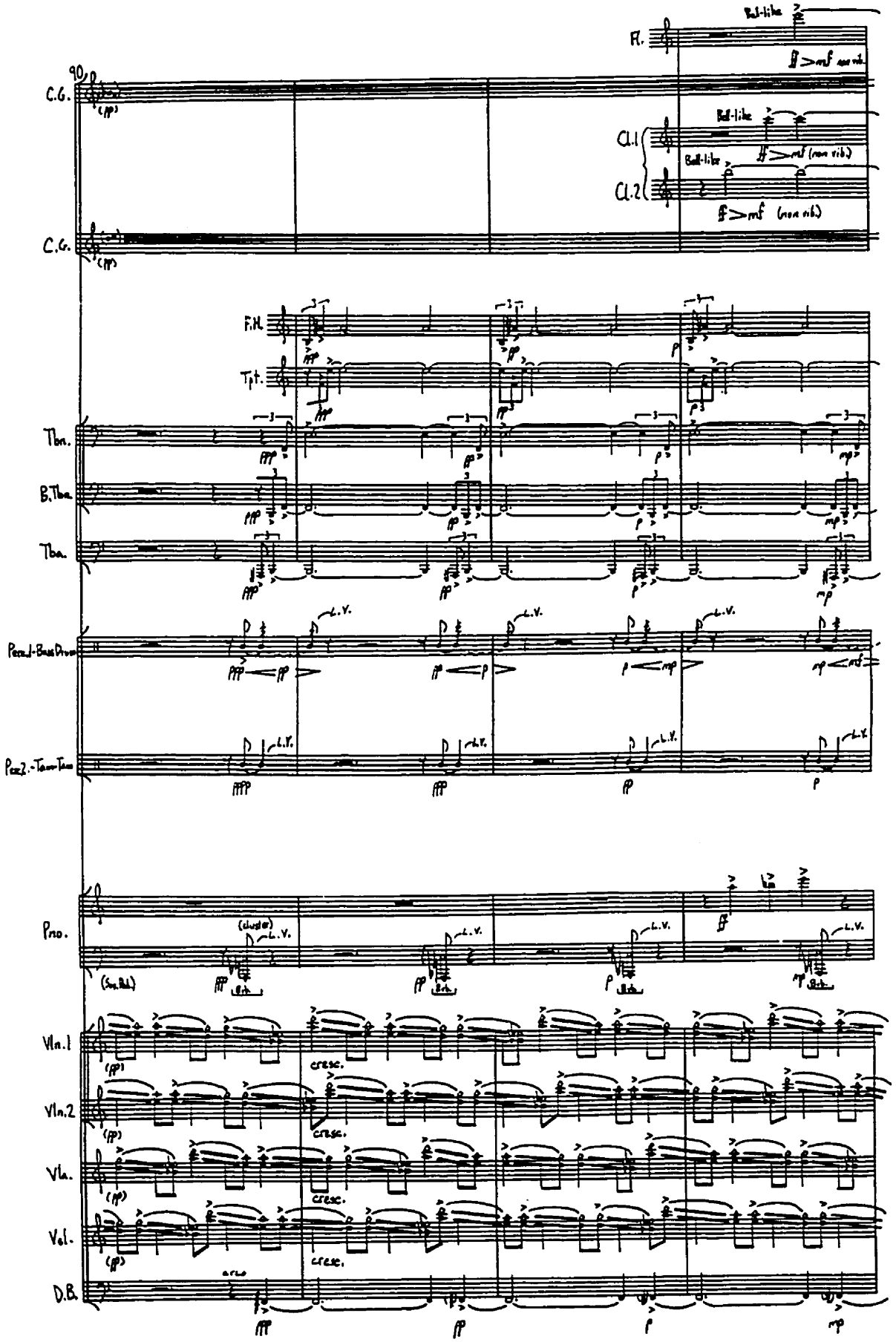

74
Fl.
Ob.
Cl.
B.Cl.
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1-Ten.-Ten.
Perc.2-Sus.Cym.
(cresc.)
L.V.
w/metal mallets
Perc.2-Bass Dr.
Pno.
cresc.
Vln.1
Vln.2
Vla.
Vc.
D.B.
full bows

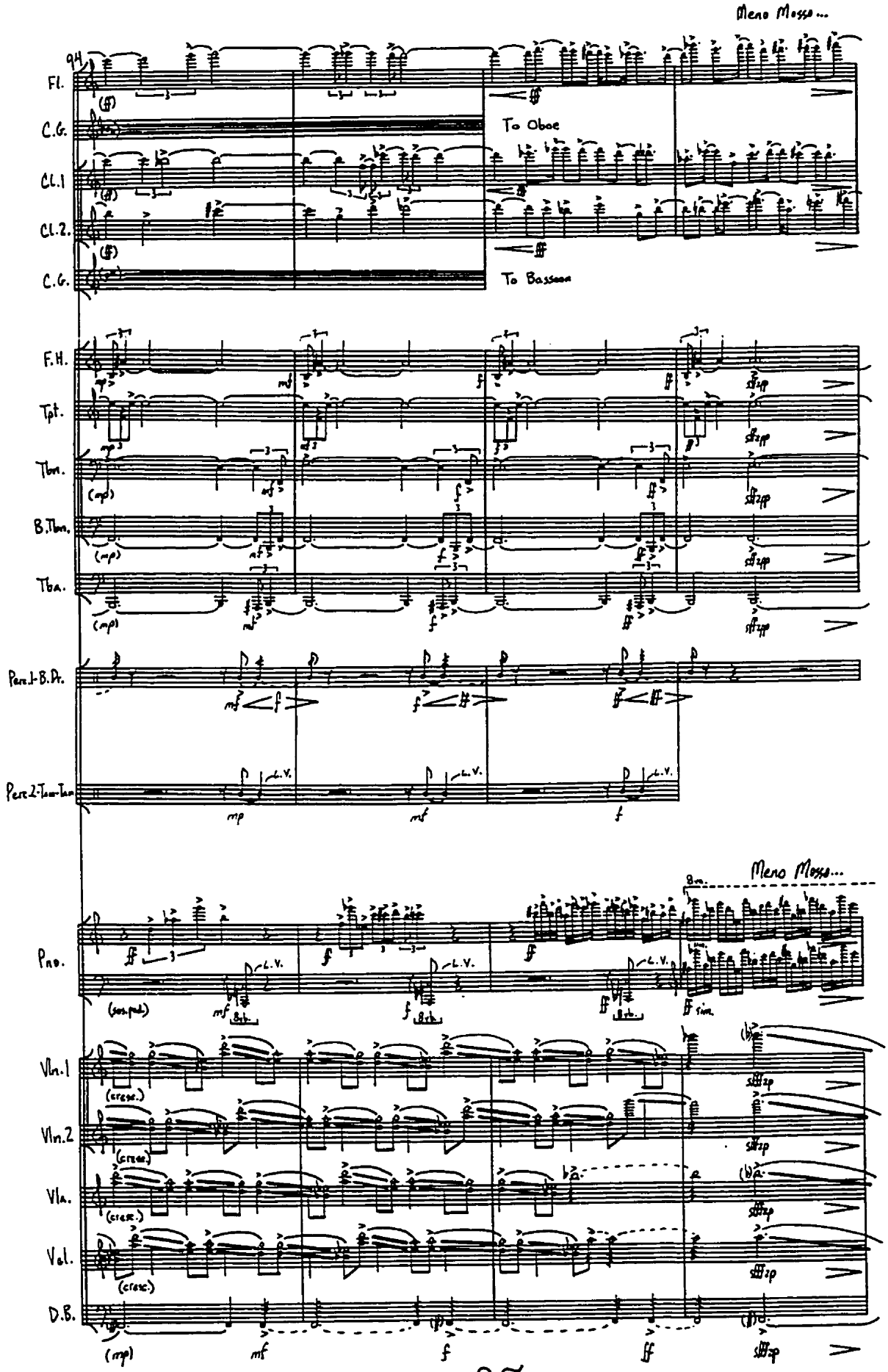

78
Fl.
Ob.
Cl.
B.Cl.
Bsn.
To Crystal Glasses
To Bb Clarinet
To Crystal Glasses
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1-Sus.Cym
L.V.
Perc.2-Tam-Tam
L.V
Perc.2-B.D.
Pno.
(cluster)
Sos.Ped.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
pizz.

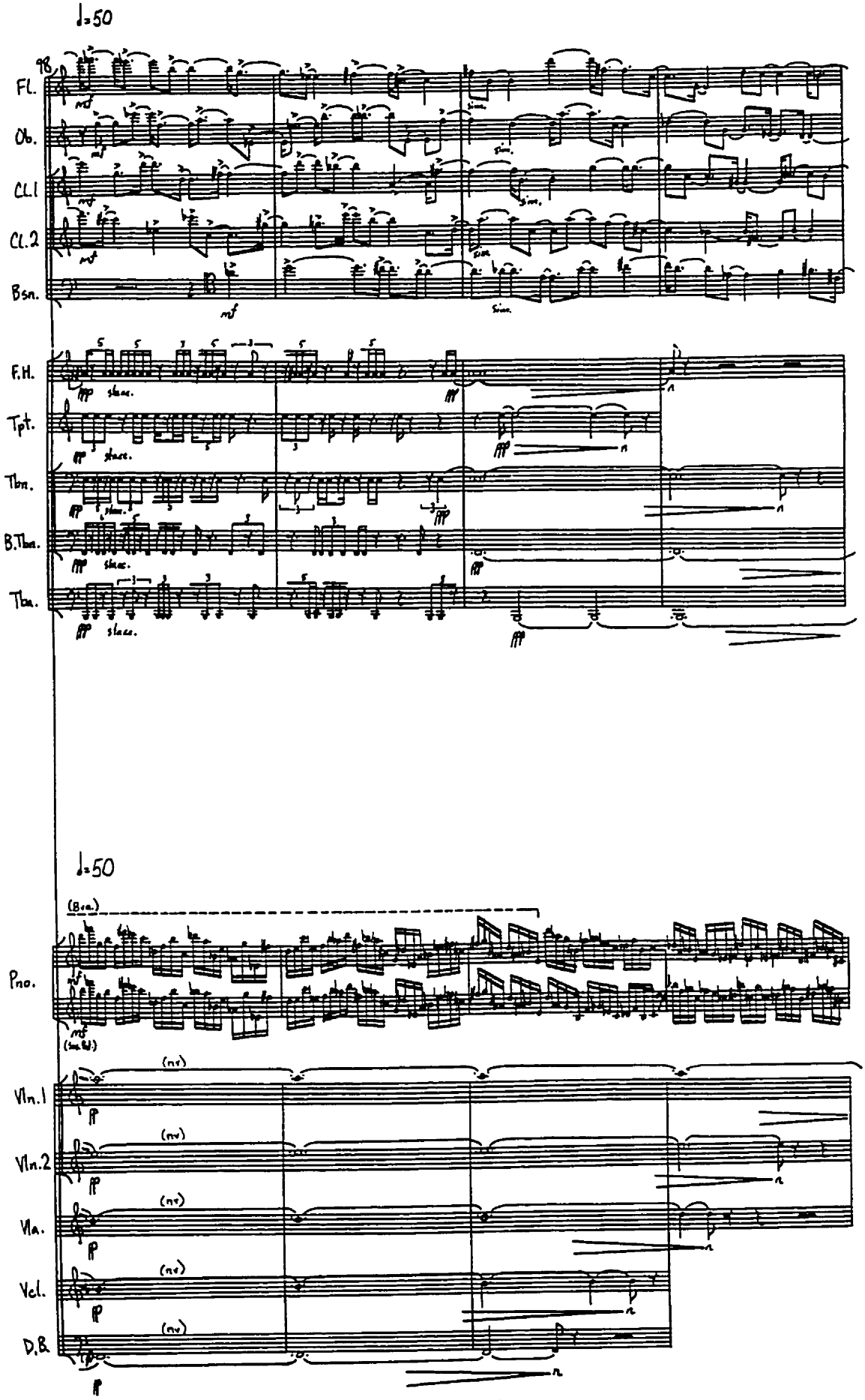


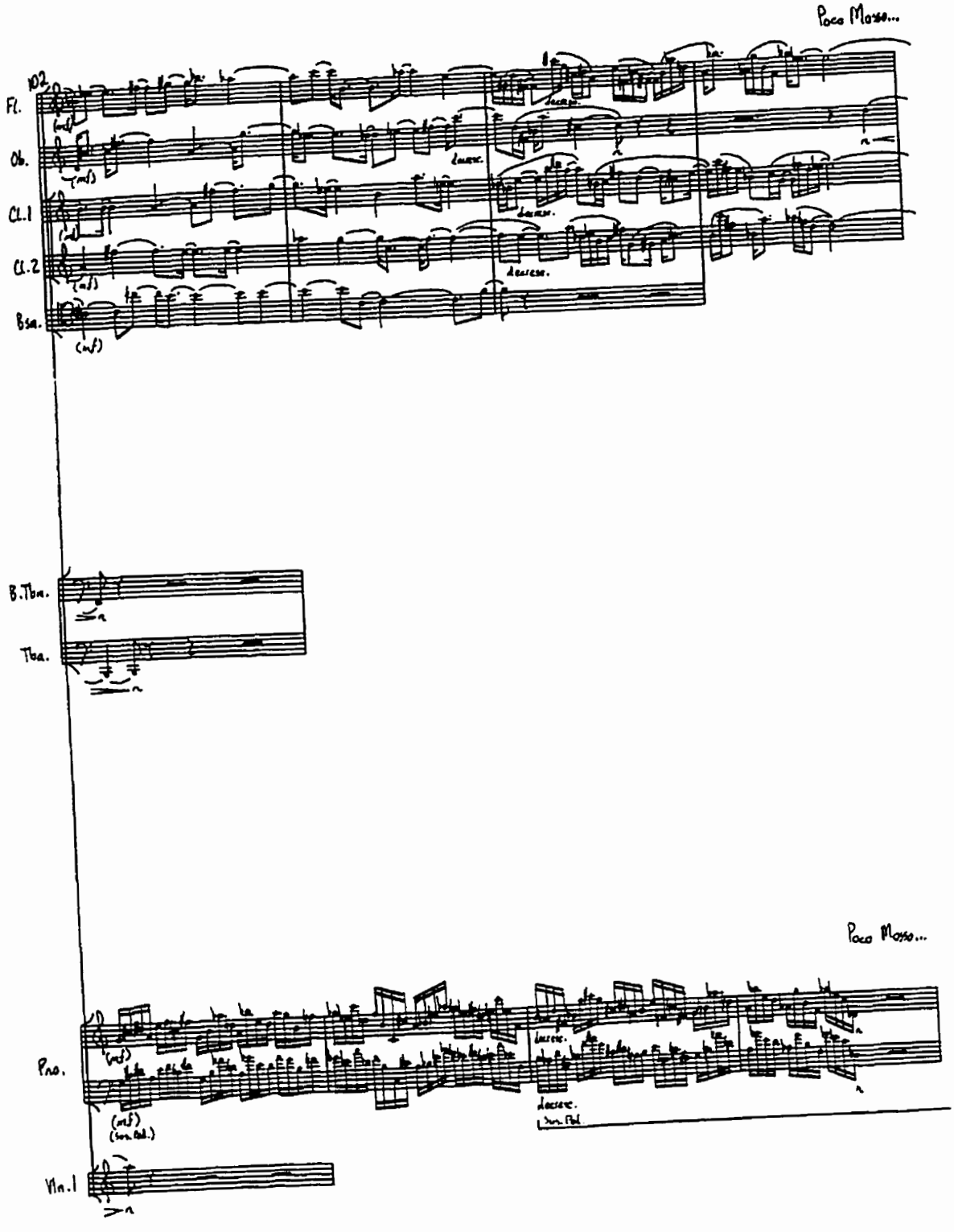
* Crystal Glasses: Glasses should be taped onto stools beside the players.

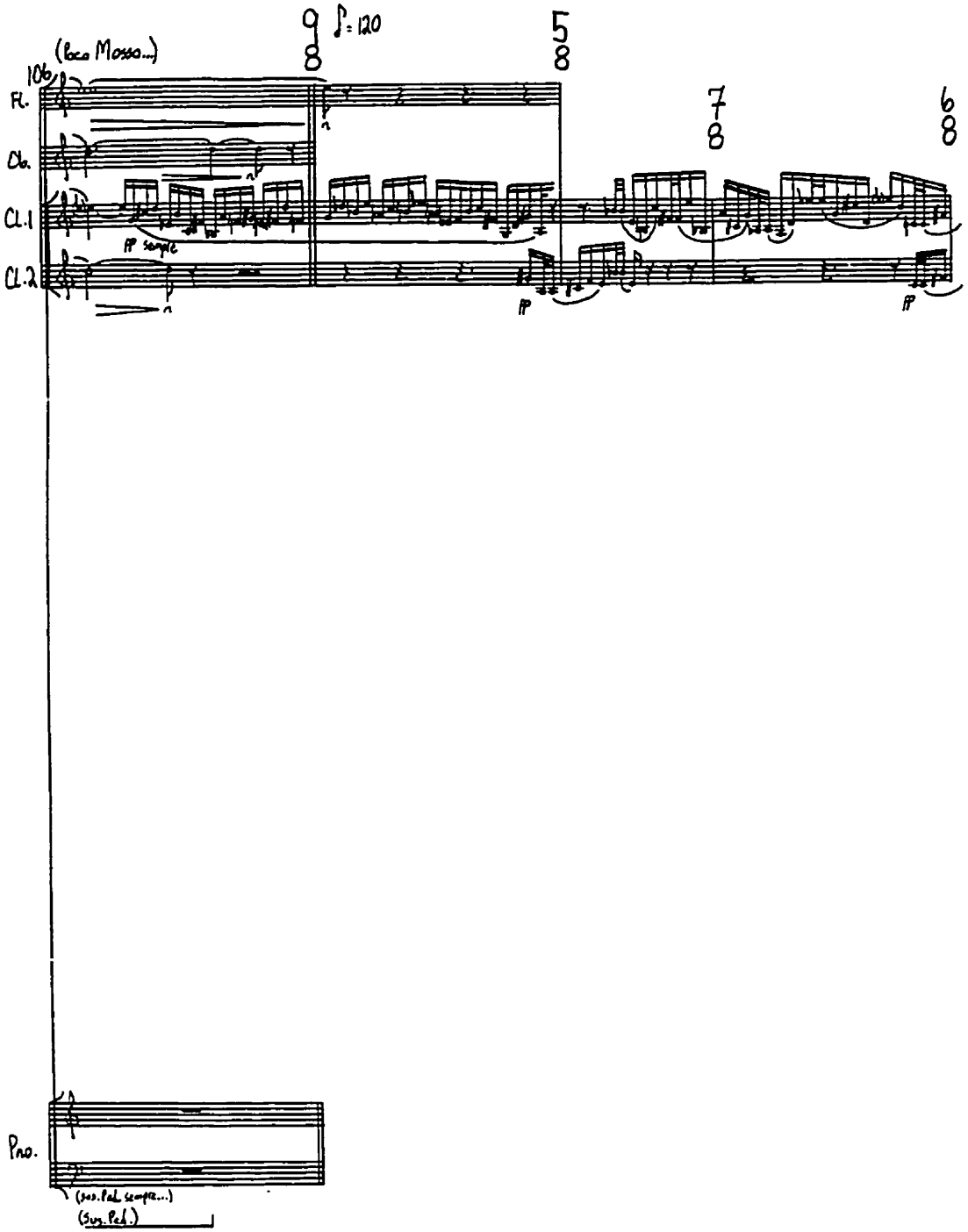

Roll...
♩.56
Fl.
C.G.
Cl.1
Cl.2
C.G.
Perc.1-Glk.
Perc.2-Glks.
Perc.1-Triangle
Perc.2-Bell Tree
L.V.
mp
Roll...
Pno.
pizz.
arco
Vln.1
Vln.2
Vla.
Vcl.
sfz
pp

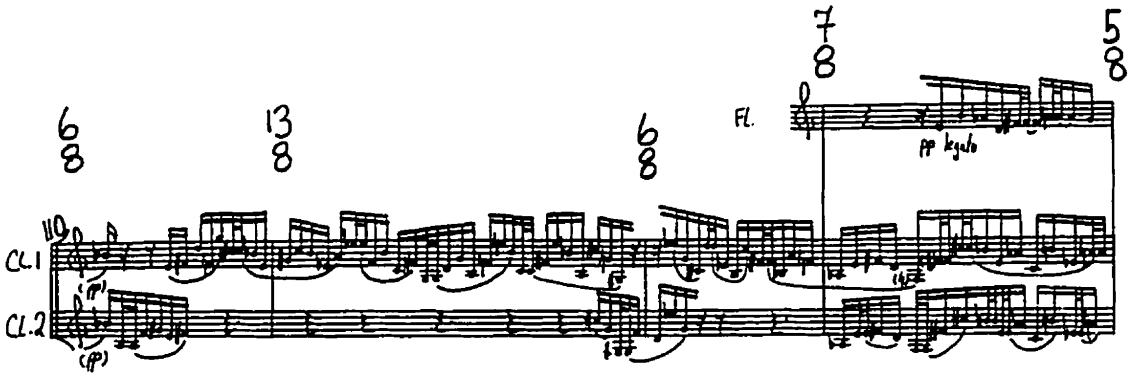

90
Fl.
Bell-like
C.G.
Cl.1
Cl.2
F.H.
Tpt.
Tbn.
B.Tba.
Tba.
Perc.1-BassDrum
Perc.2.-Tam-Tam
Pno.
(cluster)
L.V.
(Sus.Ped.)
Vln.1
Vln.2
Vla.
Vc.
D.B.
cresc.

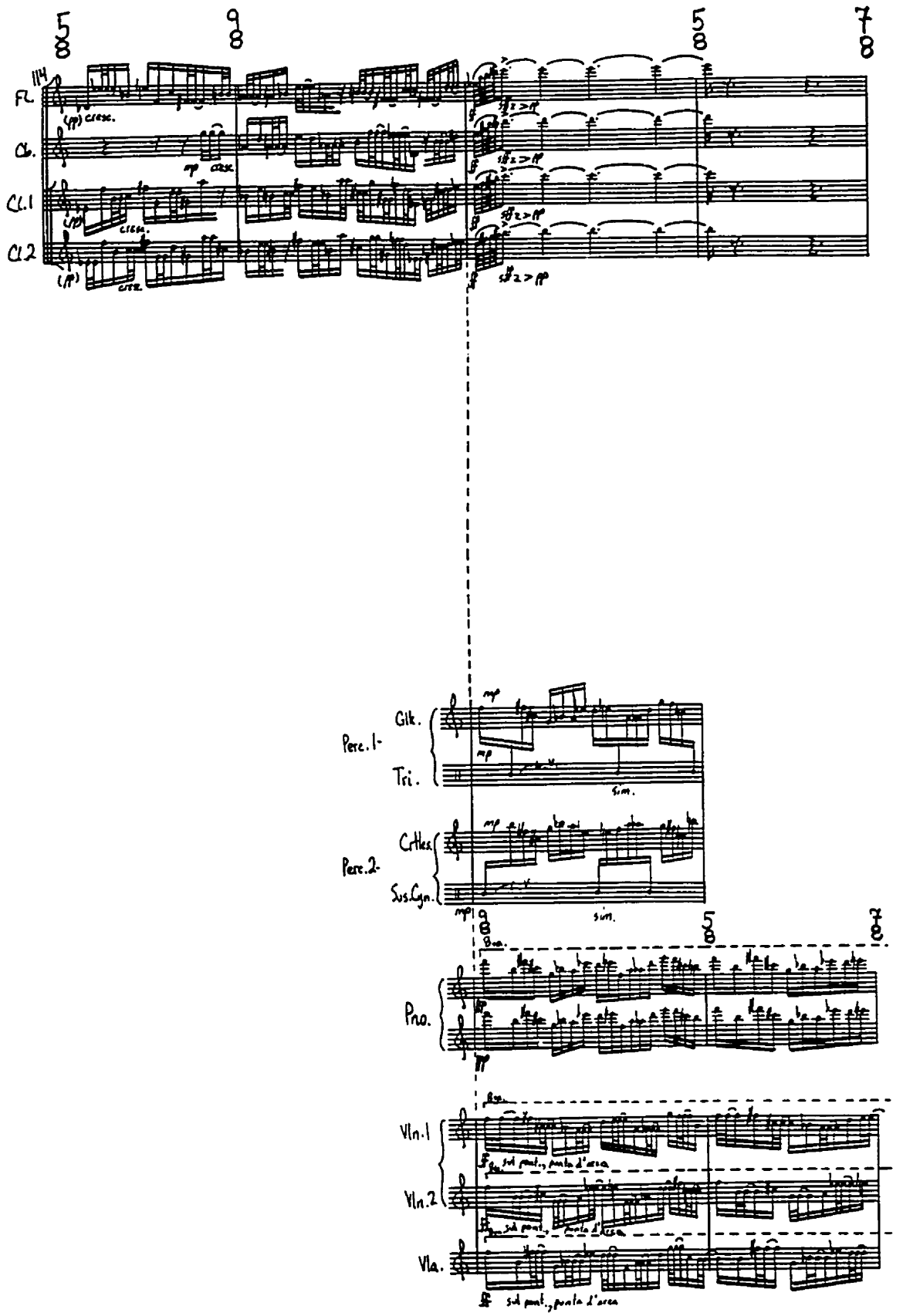

Meno Mosso...
94
Fl.
C.G.
Cl.1
Cl.2.
C.G.
To Oboe
To Bassoon
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1-B.Pr.
Perc.2-Tam-Tam
Meno Mosso...
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.

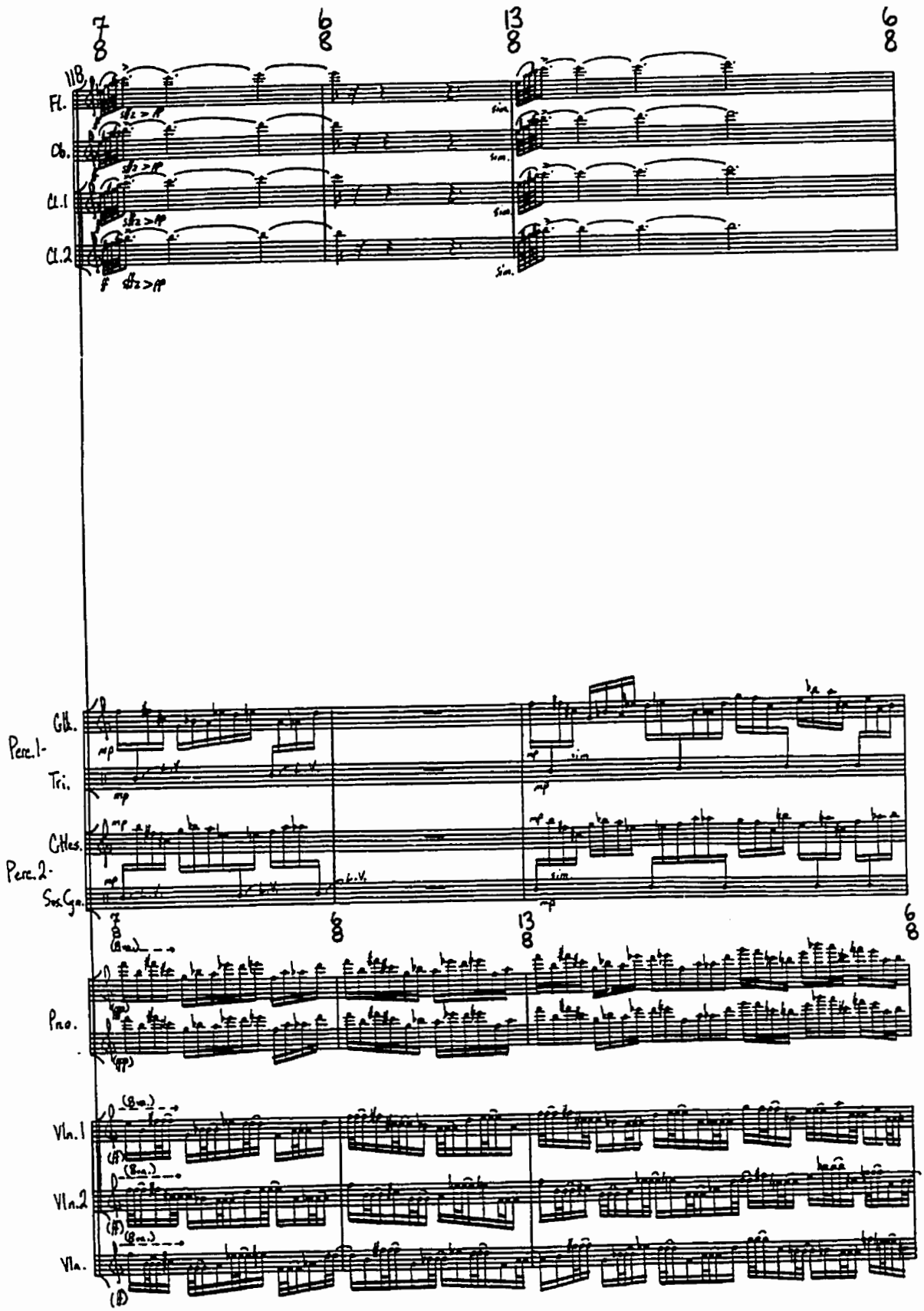

♩=50
98
Fl.
Ob.
Cl.1
Cl.2
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
♩=50
(B.a.)
Pno.
Vln.1
Vln.2
Vla.
Vc.
D.B.

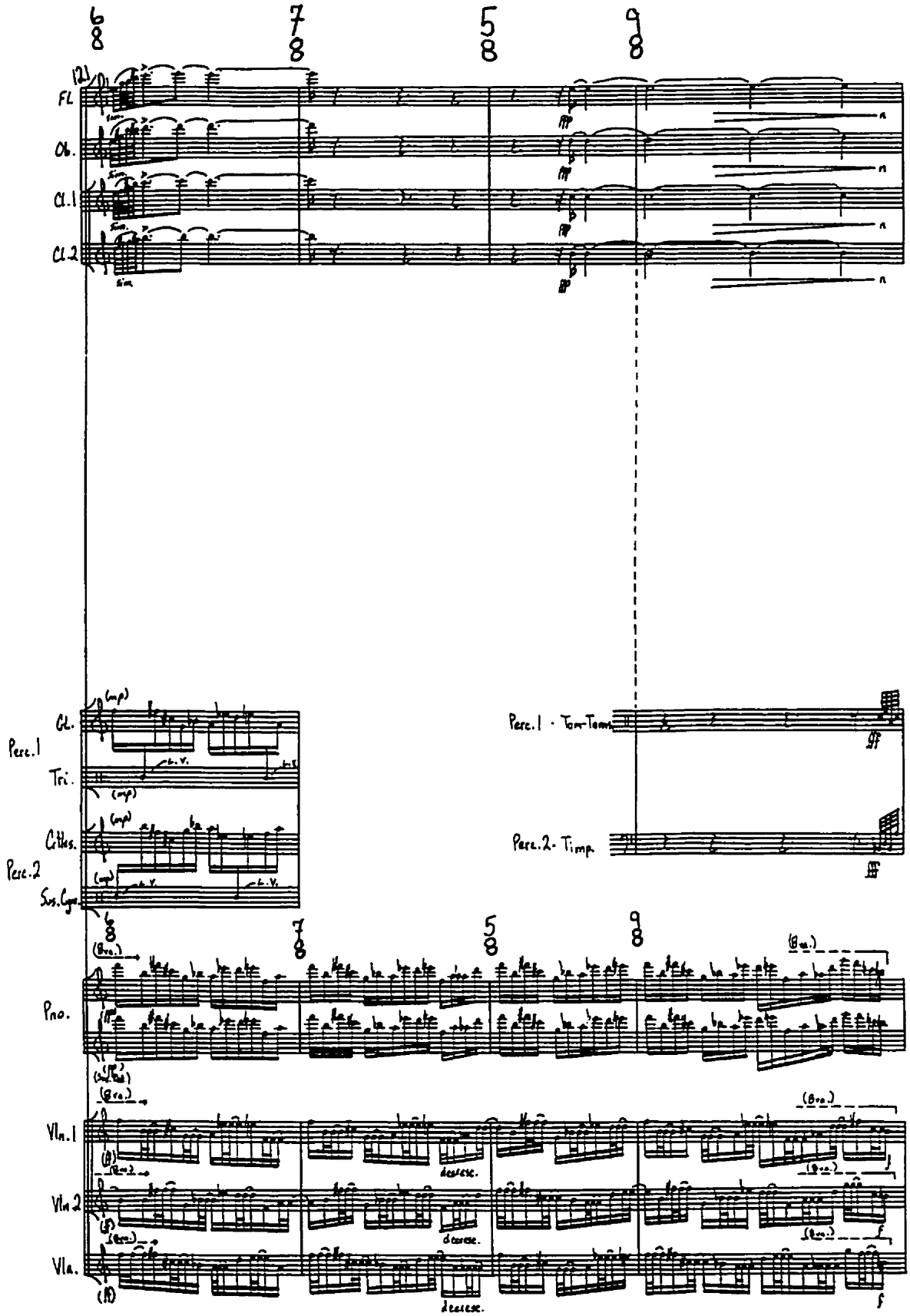

Poco Mosso...
102
Fl.
Ob.
Cl.1
Cl.2
Bsn.
(mf)
decresc.
B.Tbn.
Tba.
Poco Mosso...
Pno.
(mf)
(sim. Ped.)
Vln.1

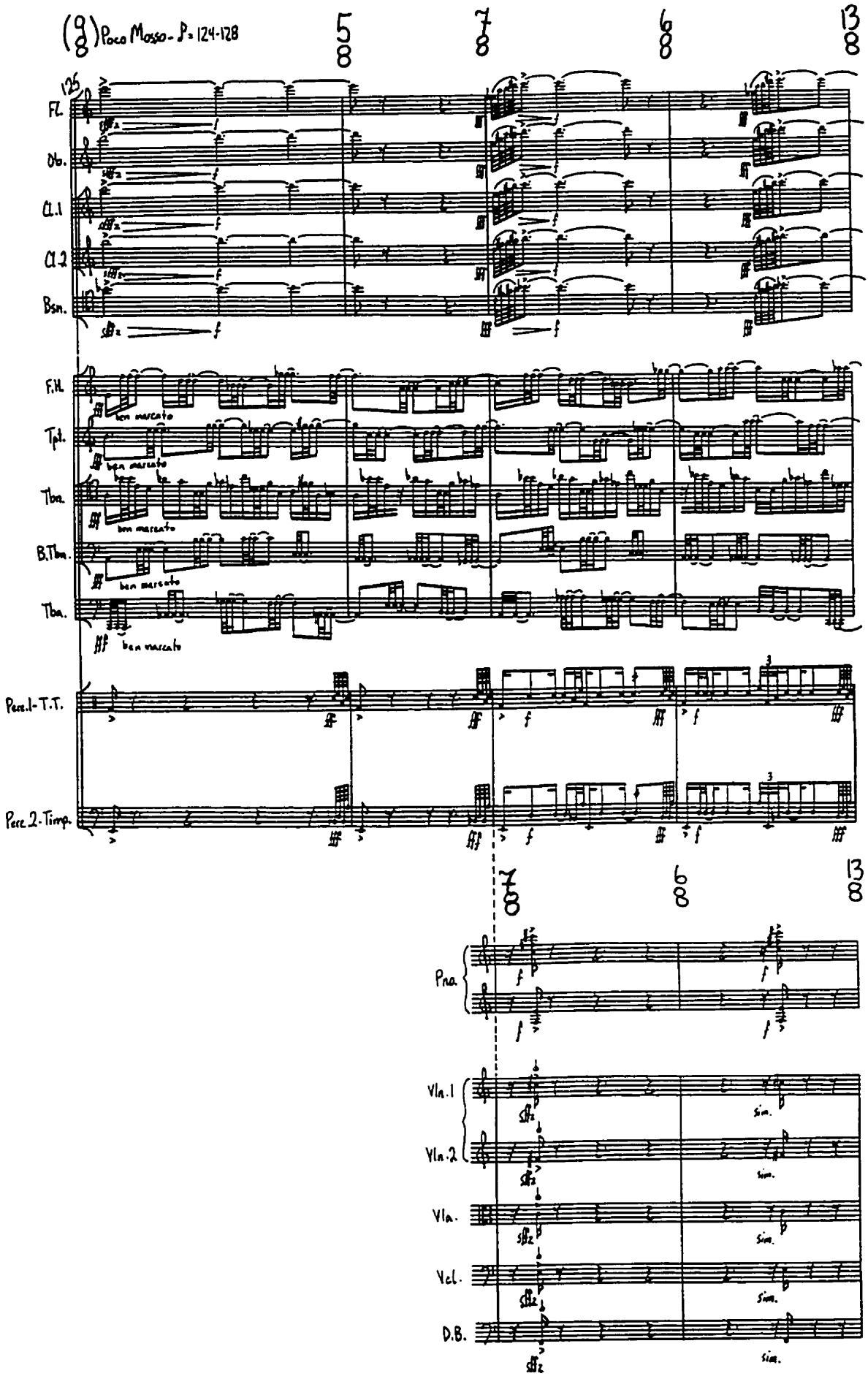

(Poco Mosso...)
106
Fl.
Cb.
Cl.1
Cl.2
Pno.
ff sempre
ff
ff
(sus. Ped. sempre...)
(Sus. Ped.)

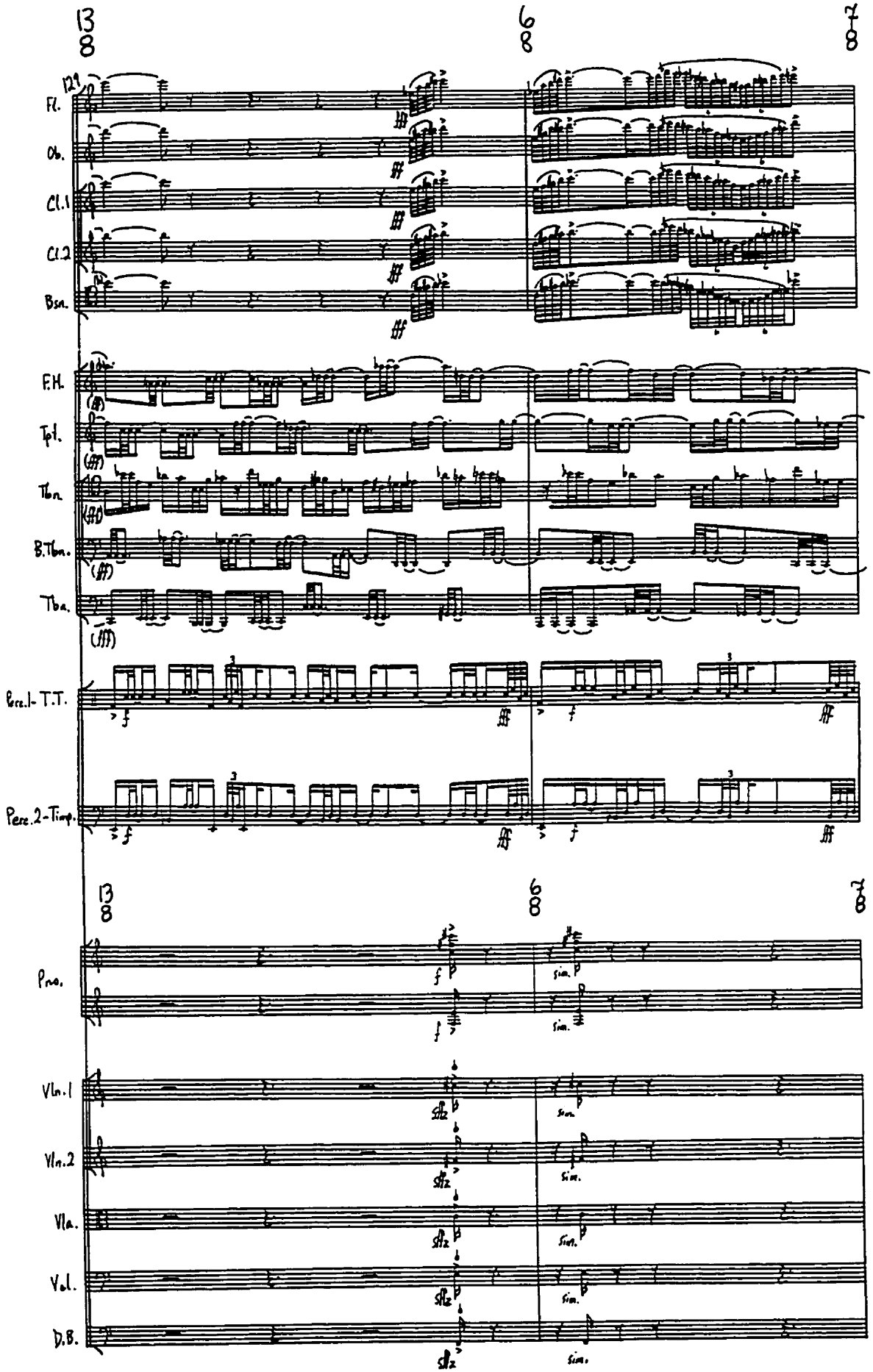

6/8
13/8
6/8
7/8
5/8
Fl.
pp kyuto
110
Cl.1
Cl.2
(fp)
(fp)

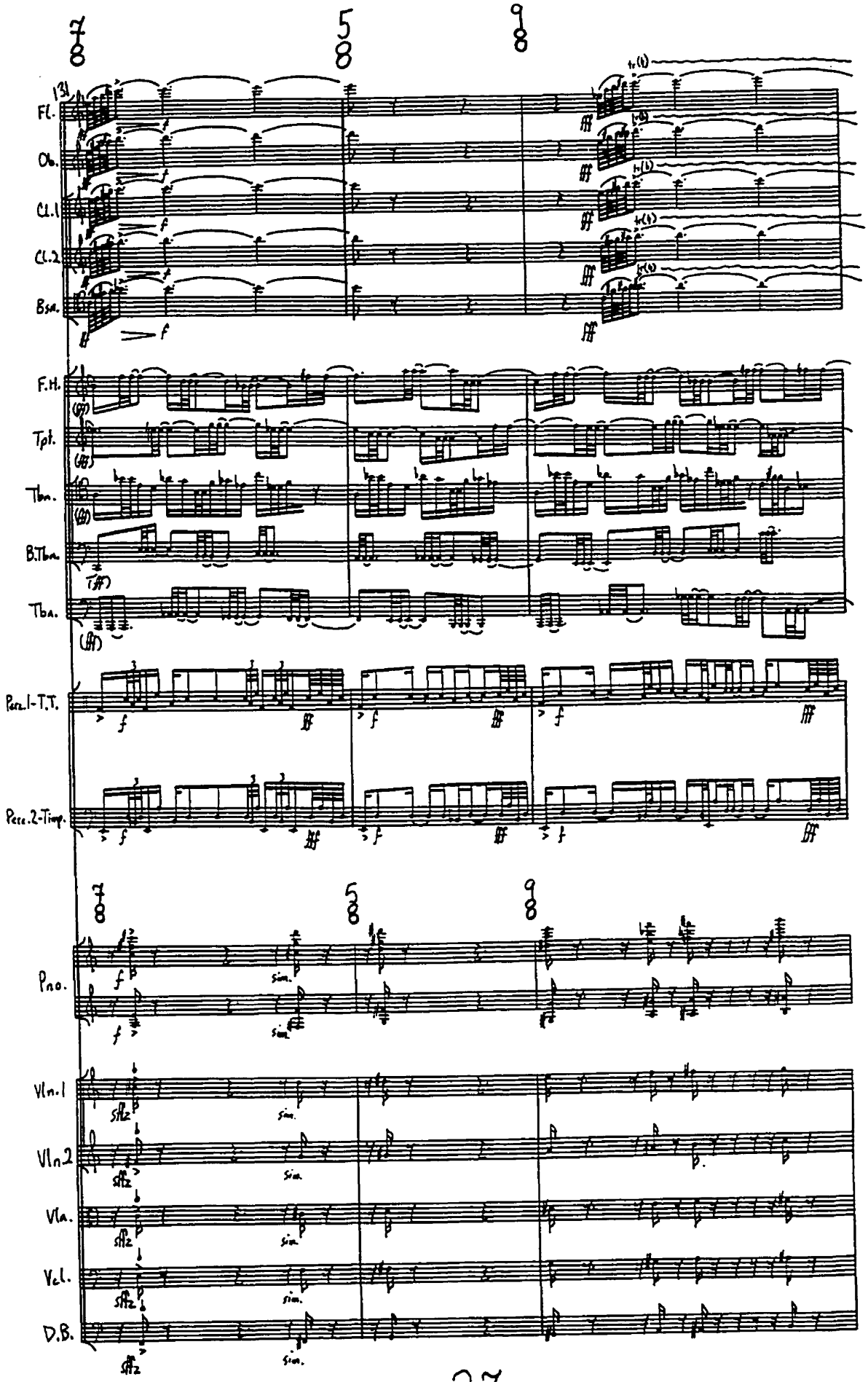

5/8
9/8
5/8
7/8
114
Fl.
Cb.
Cl.1
Cl.2
(pp) cresc.
mp cresc.
(pp) cresc.
(pp) cresc.
sfz > ff
sfz > ff
sfz > ff
sfz > ff
Perc.1
Glk.
Tri.
Perc.2
Crtles.
Sus.Cym.
mp
sim.
Pno.
Vln.1
Vln.2
Vla.
sul pont., punta d'arco

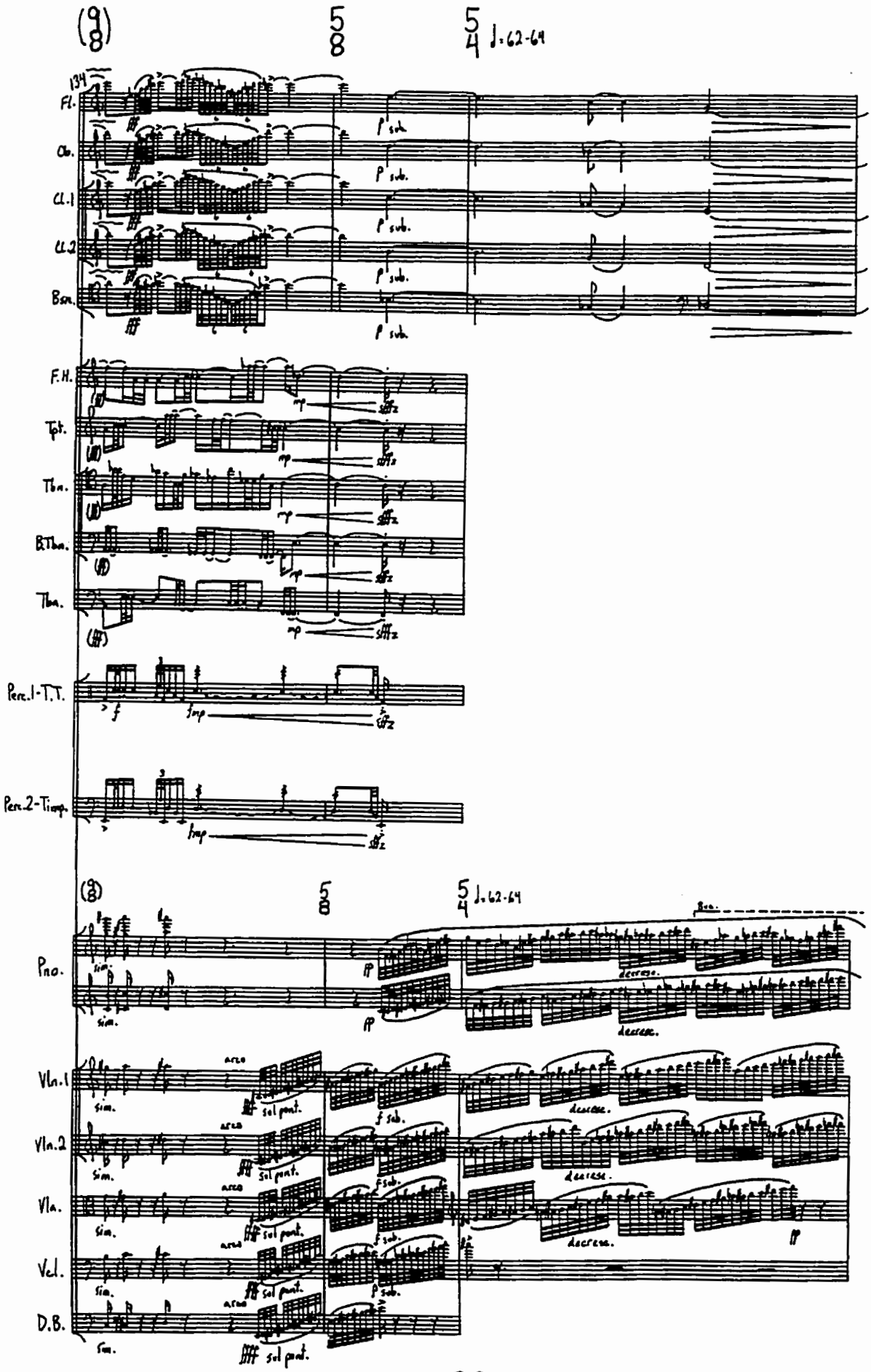

7/8
6/8
13/8
6/8
118
Fl.
Ob.
Cl.1
Cl.2
Glk.
Perc.1-
Tri.
Chles.
Perc.2-
Sus.Cym.
Pno.
Vln.1
Vln.2
Vla.

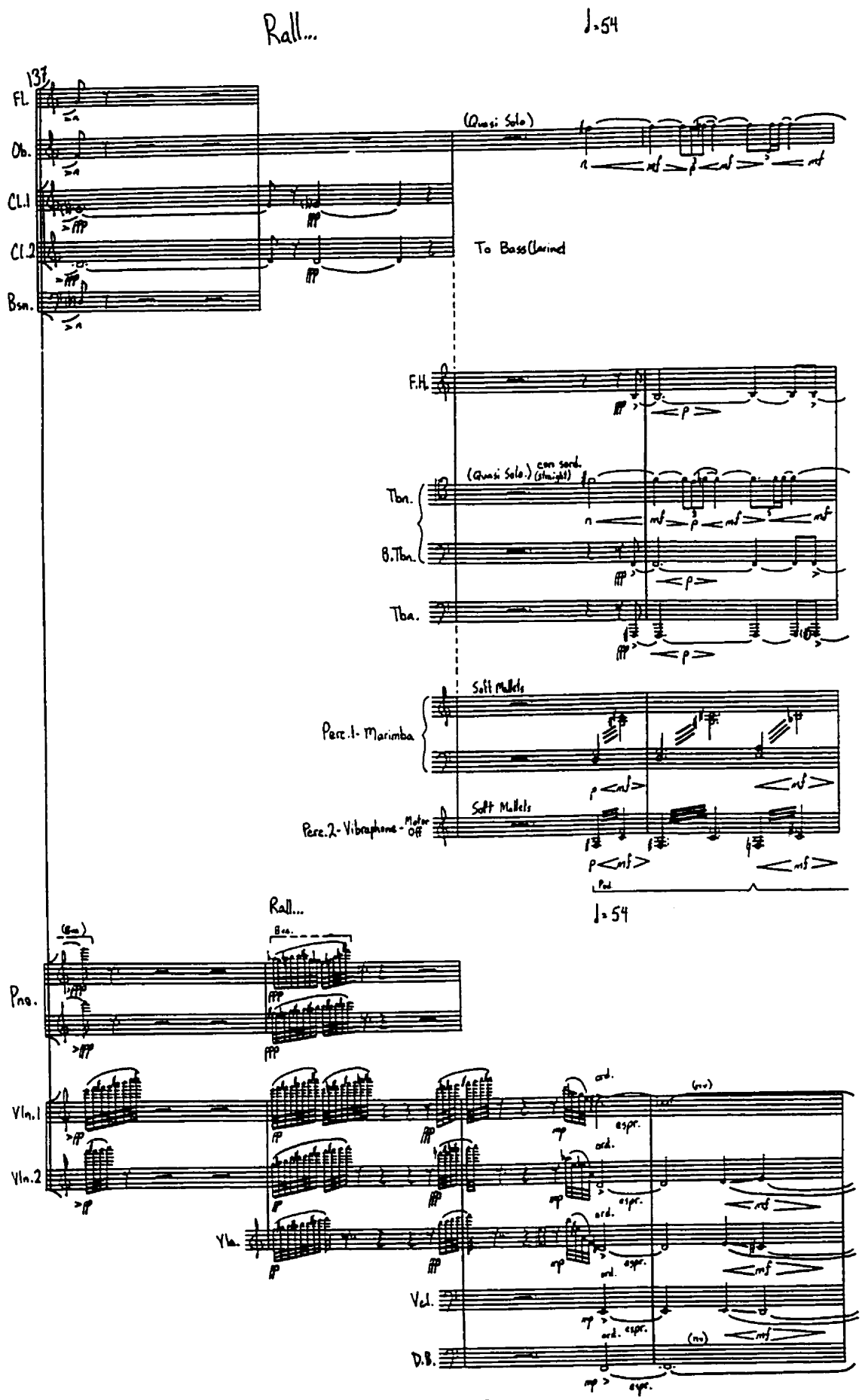

6/8
7/8
5/8
9/8
Fl.
Ob.
Cl.1
Cl.2
Perc.1 · Tom-Toms
Perc.2 · Timp.
Cl.
Perc.1
Tri.
Cymbs.
Perc.2
Sus.Cym.
Pno.
Vln.1
Vln.2
Vla.
decresc.

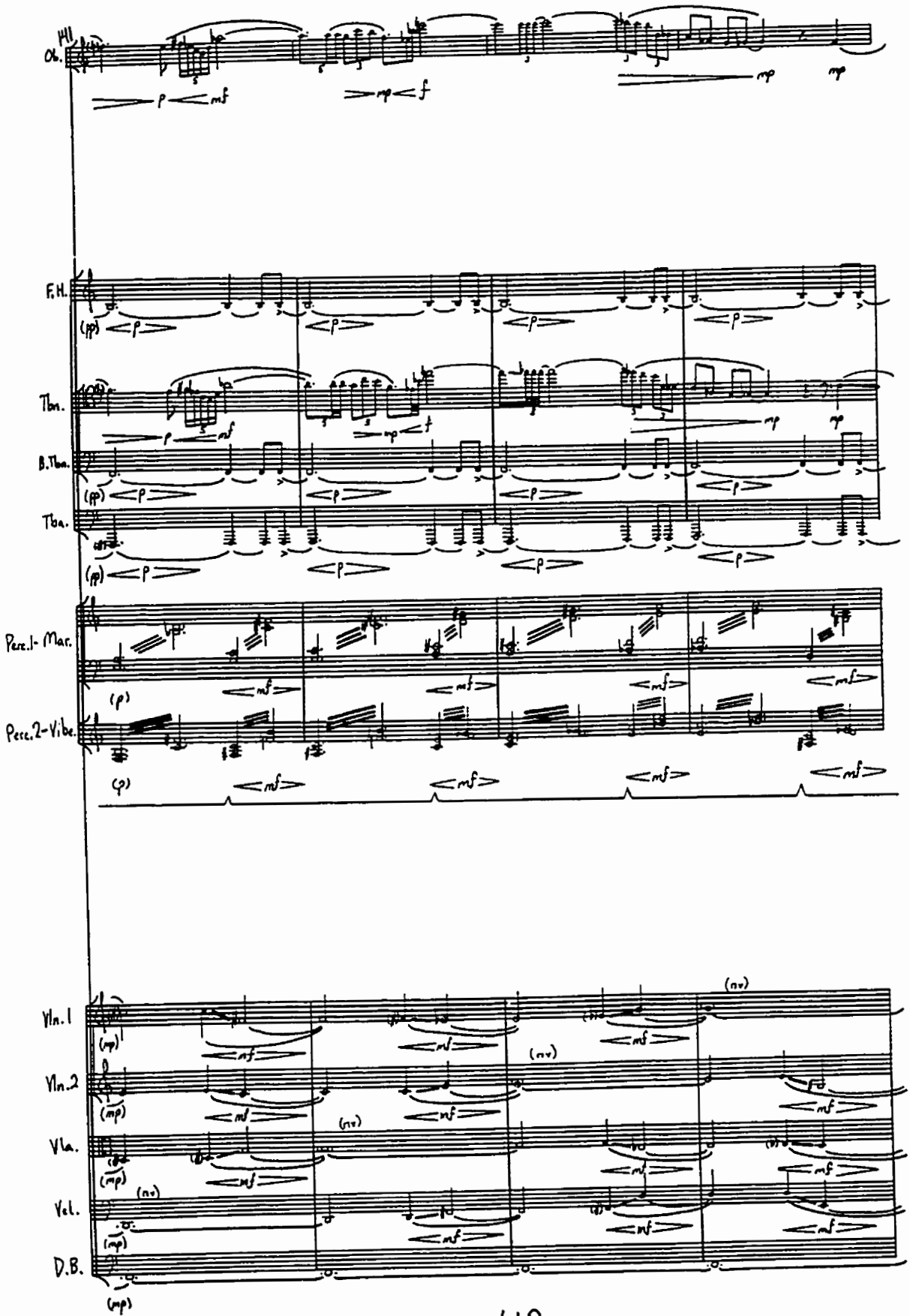

(9/8) Poco Mosso - ♩= 124-128
5/8
7/8
6/8
13/8
125
Fl.
Ob.
Cl.1
Cl.2
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tbn.
ben marcato
Perc.1-T.T.
Perc.2-Timp.
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
sim.

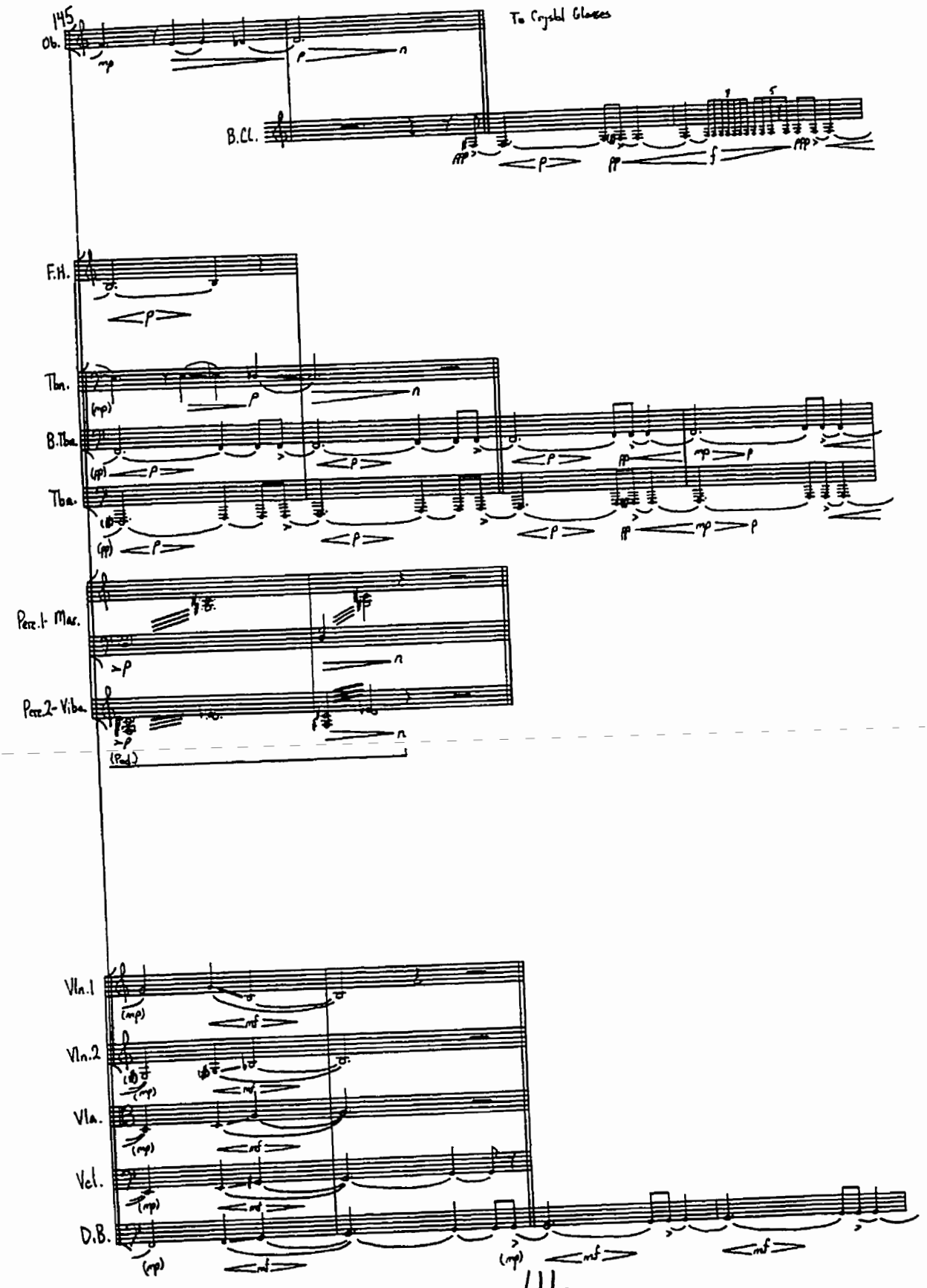

13/8
6/8
7/8
129
Fl.
Ob.
Cl.1
Cl.2
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1- T.T.
Perc.2- Timp.
Pno.
Vln.1
Vln.2
Vla.
Vc.
D.B.
sim.

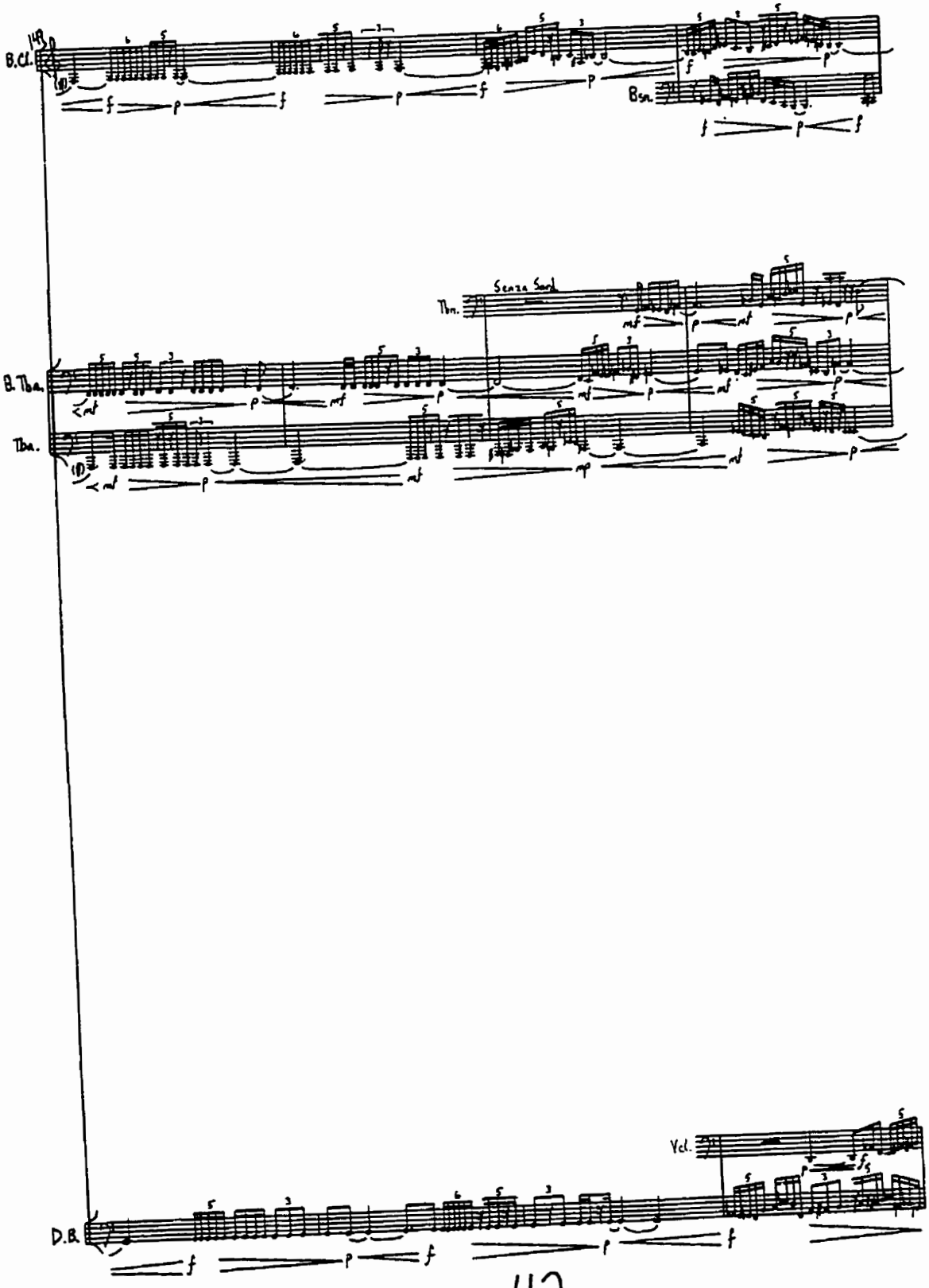

7/8
5/8
9/8
131
Fl.
Ob.
Cl.1
Cl.2
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1-T.T.
Perc.2-Timp.
Pno.
Vln.1
Vln.2
Vla.
Vc.
D.B.
sim.

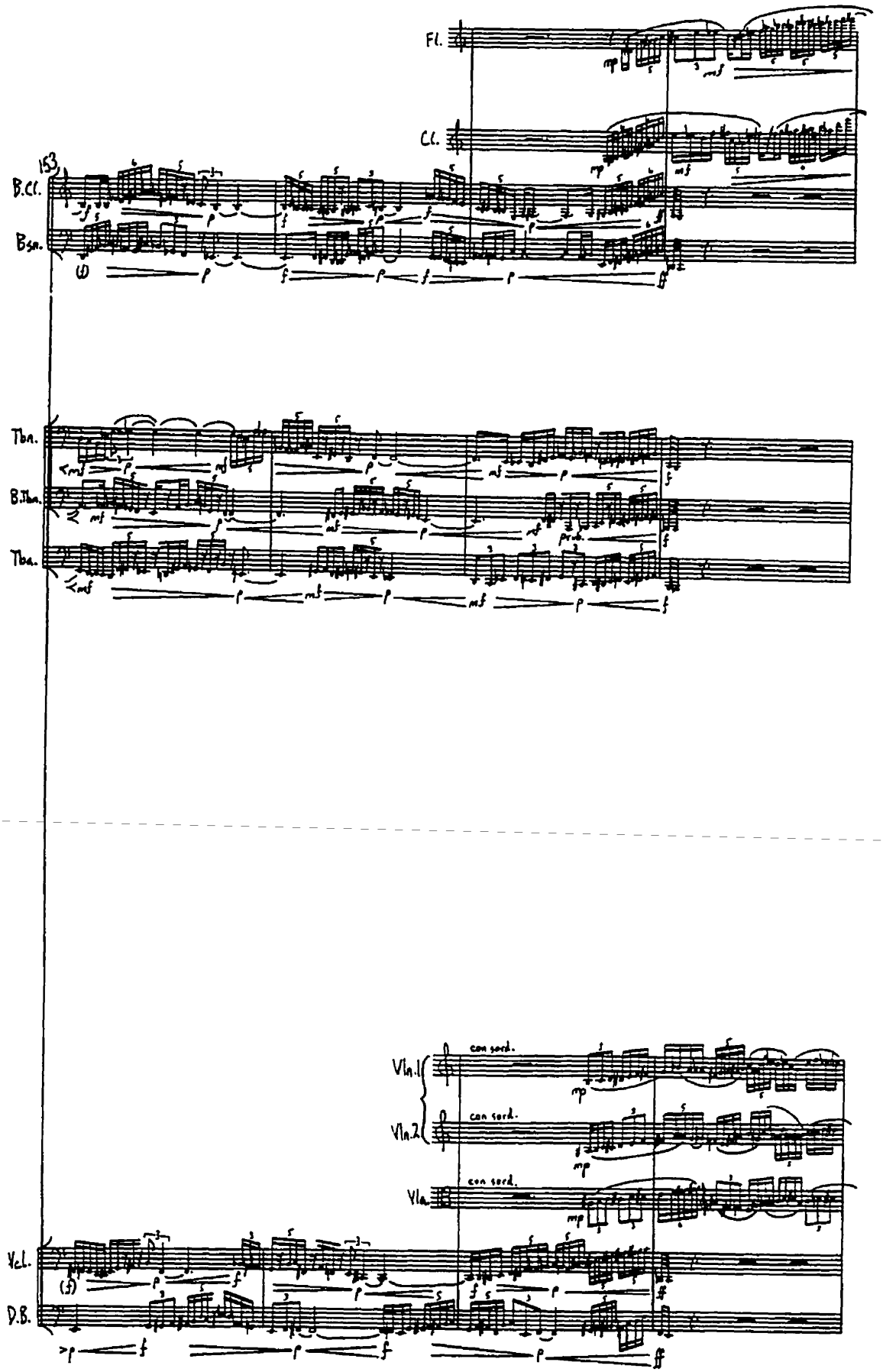

(9/8)
5/8
5/4 ♩.62-64
134
Fl.
Ob.
Cl.1
Cl.2
Bsn.
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Perc.1-T.T.
Perc.2-Timp.
(9/8)
5/8
5/4 ♩.62-64
Pno.
Vln.1
Vln.2
Vla.
Vc.l.
D.B.
sim.
arco
sol pont.
decresc.

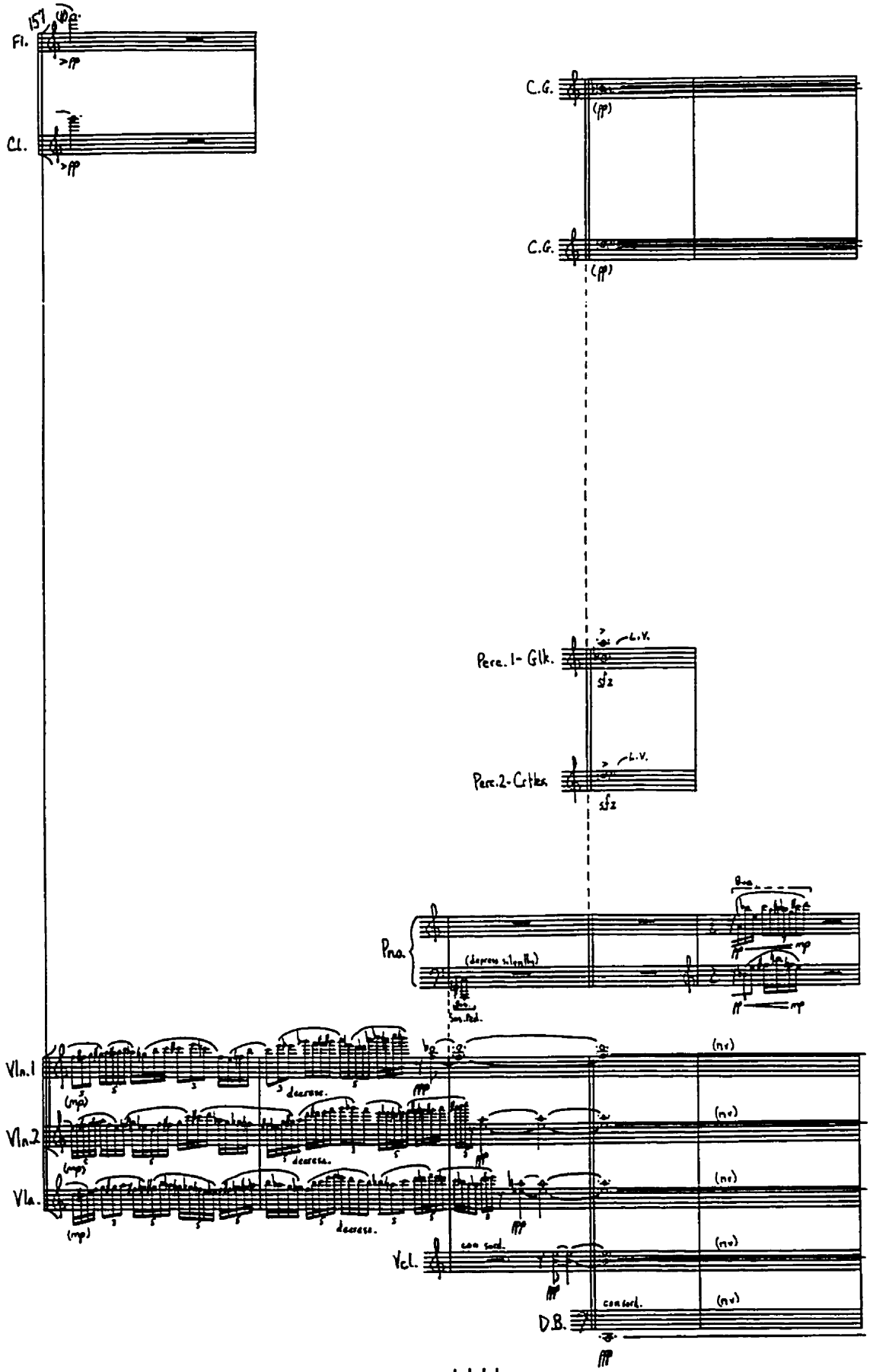

Rall...
♩=54
137
Fl.
Ob.
Cl.1
Cl.2
Bsn.
(Quasi Solo)
To Bass Clarinet
F.H.
(Quasi Solo.) con sord. (straight)
Tbn.
B.Tbn.
Tba.
Soft Mallets
Perc.1- Marimba
Soft Mallets
Perc.2- Vibraphone - Motor Off
Ped.
♩=54
Rall...
Pno.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
ord.
espr.

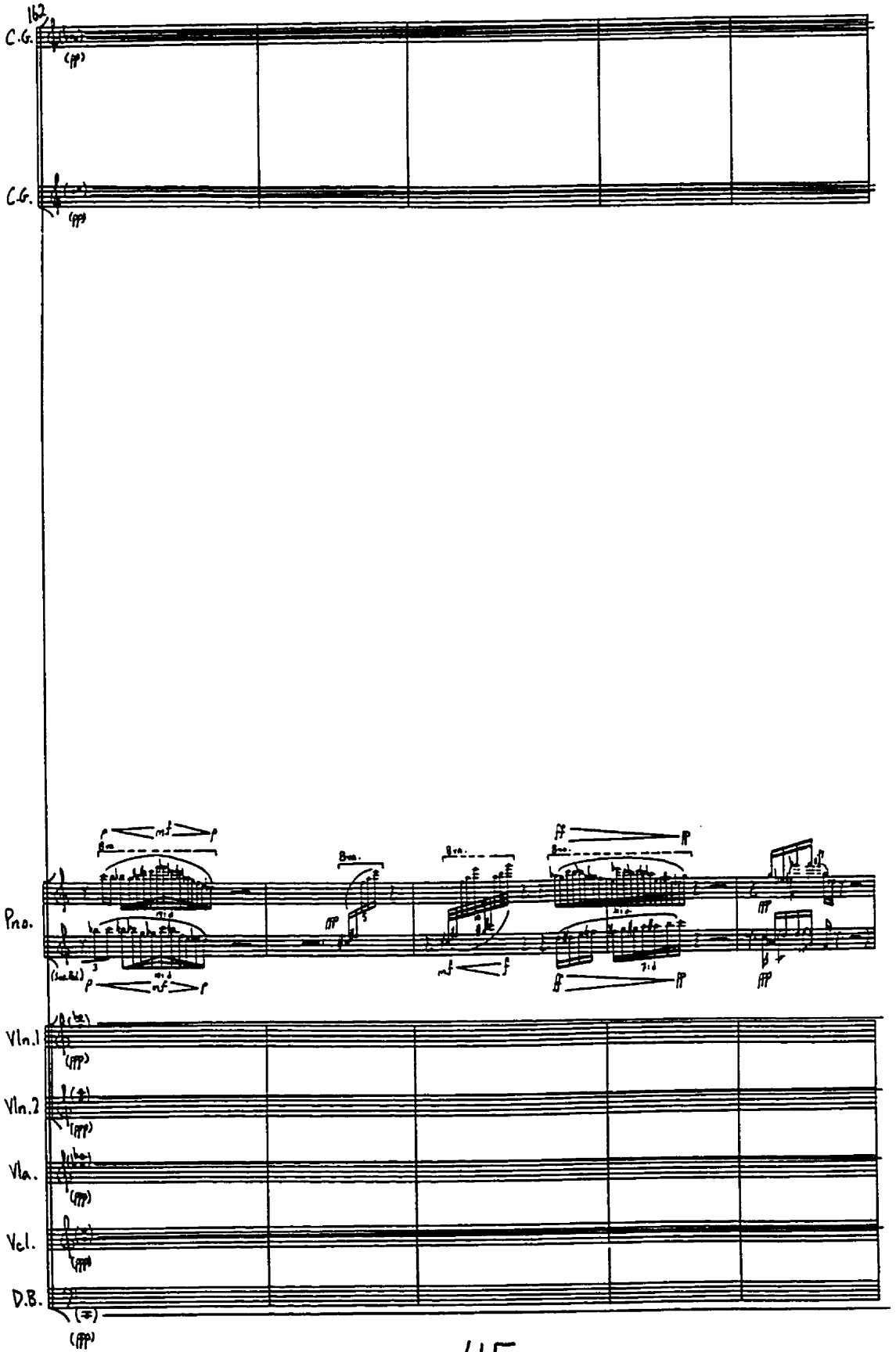

Ob.
F.H.
Tbn.
B.Tbn.
Tba.
Perc.1- Mar.
Perc.2-Vibe.
Vln.1
Vln.2
Vla.
Vcl.
D.B.

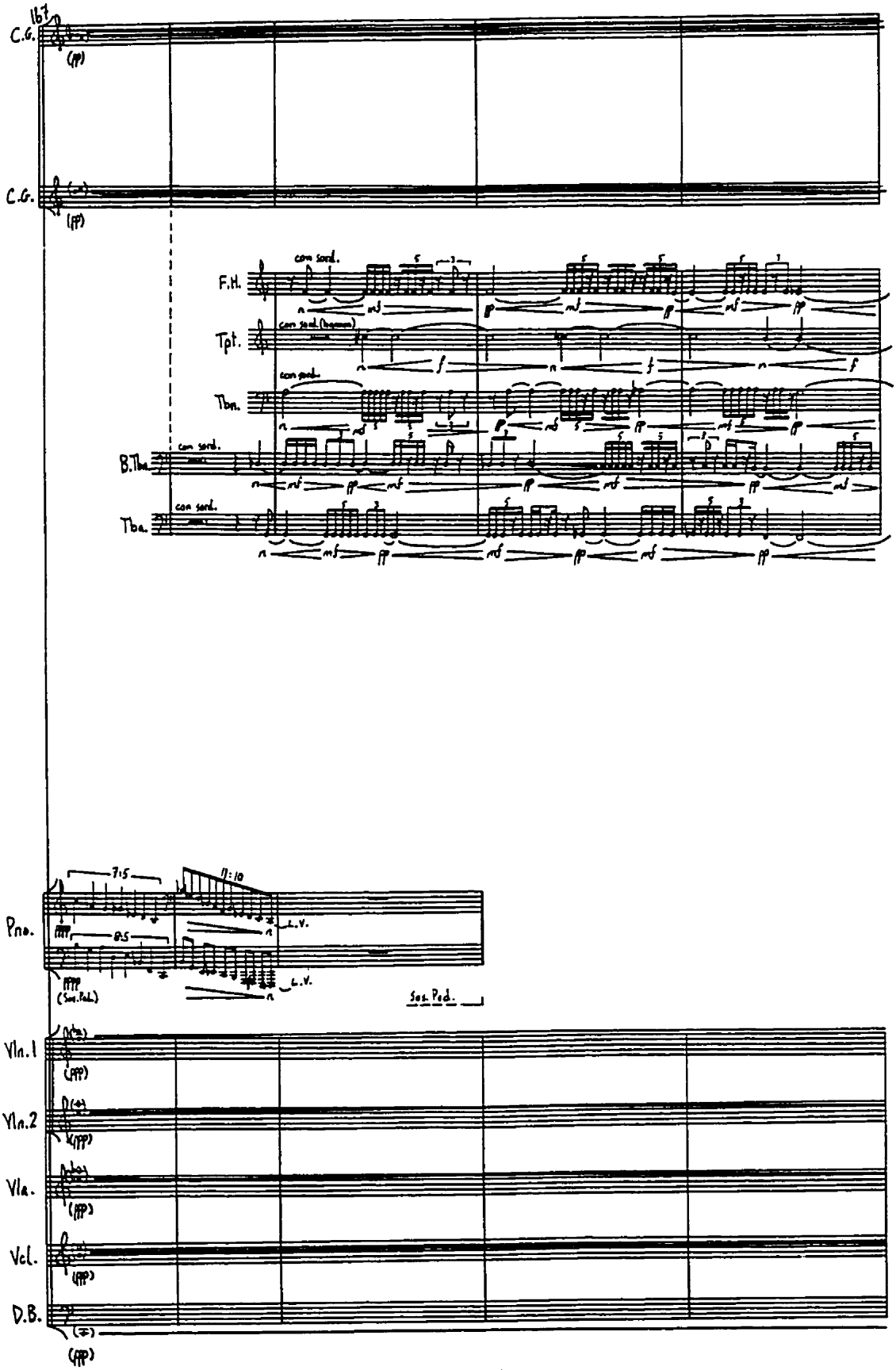

145
Ob.
To Crystal Glasses
B.Cl.
F.H.
Tbn.
B.Tba.
Tba.
Perc.1- Mar.
Perc.2- Vibe.
Vln.1
Vln.2
Vla.
Vcl.
D.B.

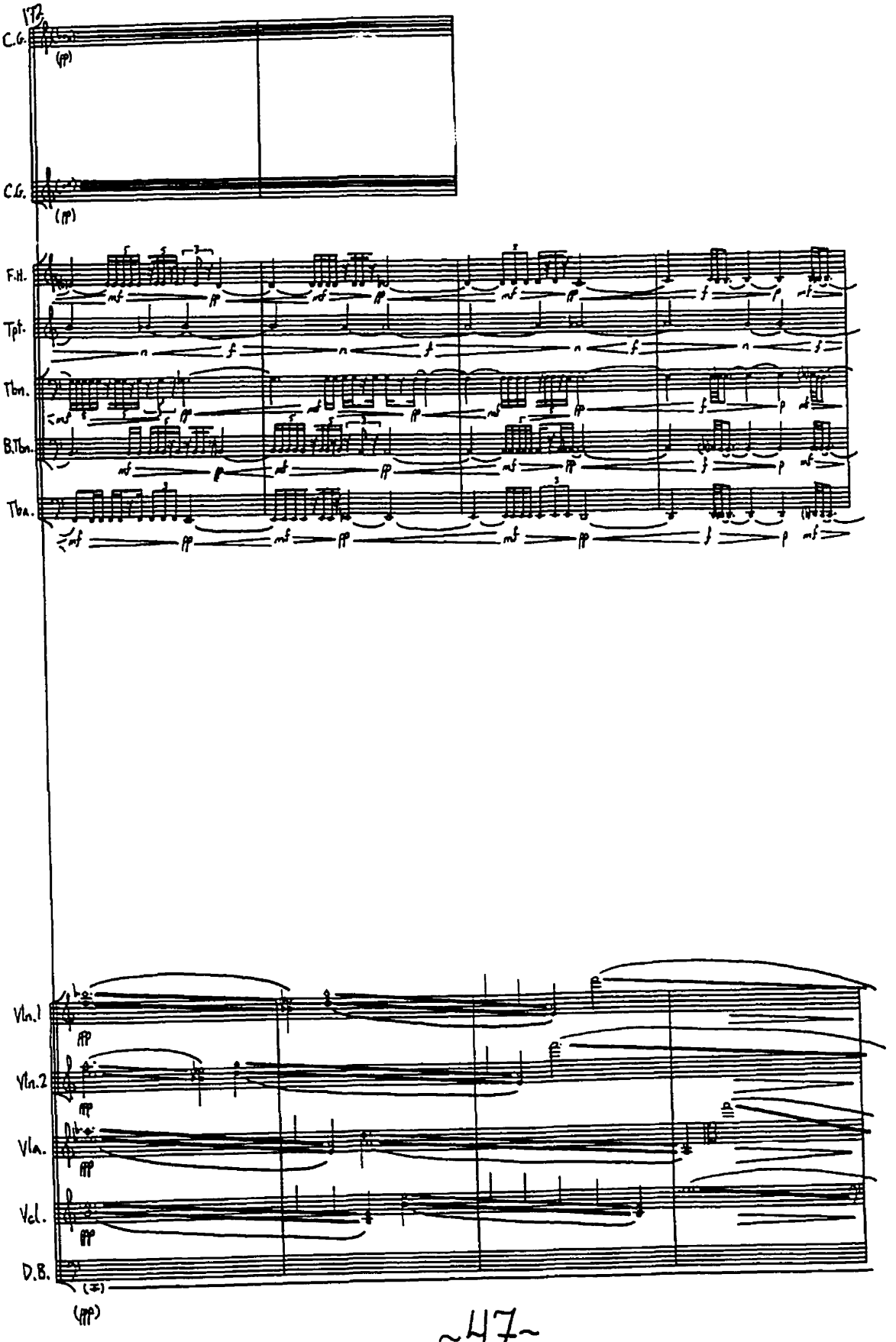

149
B.Cl.
Bsn.
Senza Sord.
Tbn.
B. Tba.
Tba.
Vcl.
D.B.


153
Fl.
Cl.
B.Cl.
Bsn.
Tbn.
B.Tbn.
Tba.
con sord.
Vln.1
Vln.2
Vla.
Vc.
D.B.

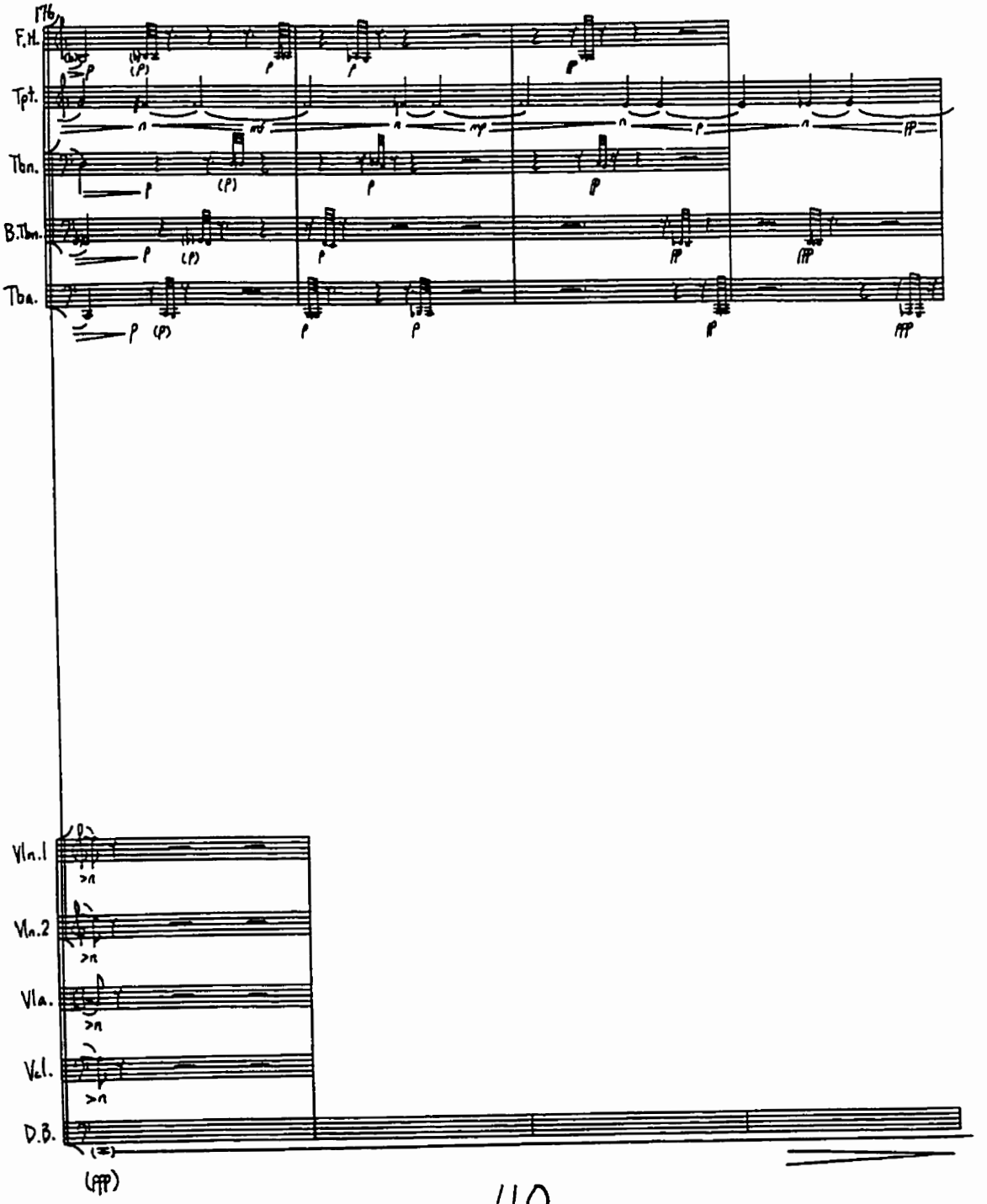

15
Fl.
Cl.
>ff
C.G.
(ff)
Perc.1- Glk.
Perc.2- Crtles
L.V.
sfz
Pno.
(depress silently)
Ped. sim.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
(mp)
decresc.
(ord)
con sord.
senza sord.


162
C.G.
(fff)
C.G.
(fff)
Pno.
8va.
mf
p
fff
ff
fp
Vln.1
(fff)
Vln.2
(fff)
Vla.
(fff)
Vc.l.
(fff)
D.B.
(fff)


167
C.G.
(ff)
C.G.
(ff)
con sord.
F.H.
con sord. (bassoon)
Tpt.
con sord.
Tbn.
con sord.
B.Tbn.
con sord.
Tba.
7:5
11:10
Pno.
L.V.
8:5
(Sus.Ped.)
L.V.
Sus. Ped.
Vln.1
(fff)
Vln.2
(fff)
Vla.
(fff)
Vcl.
(fff)
D.B.
(fff)

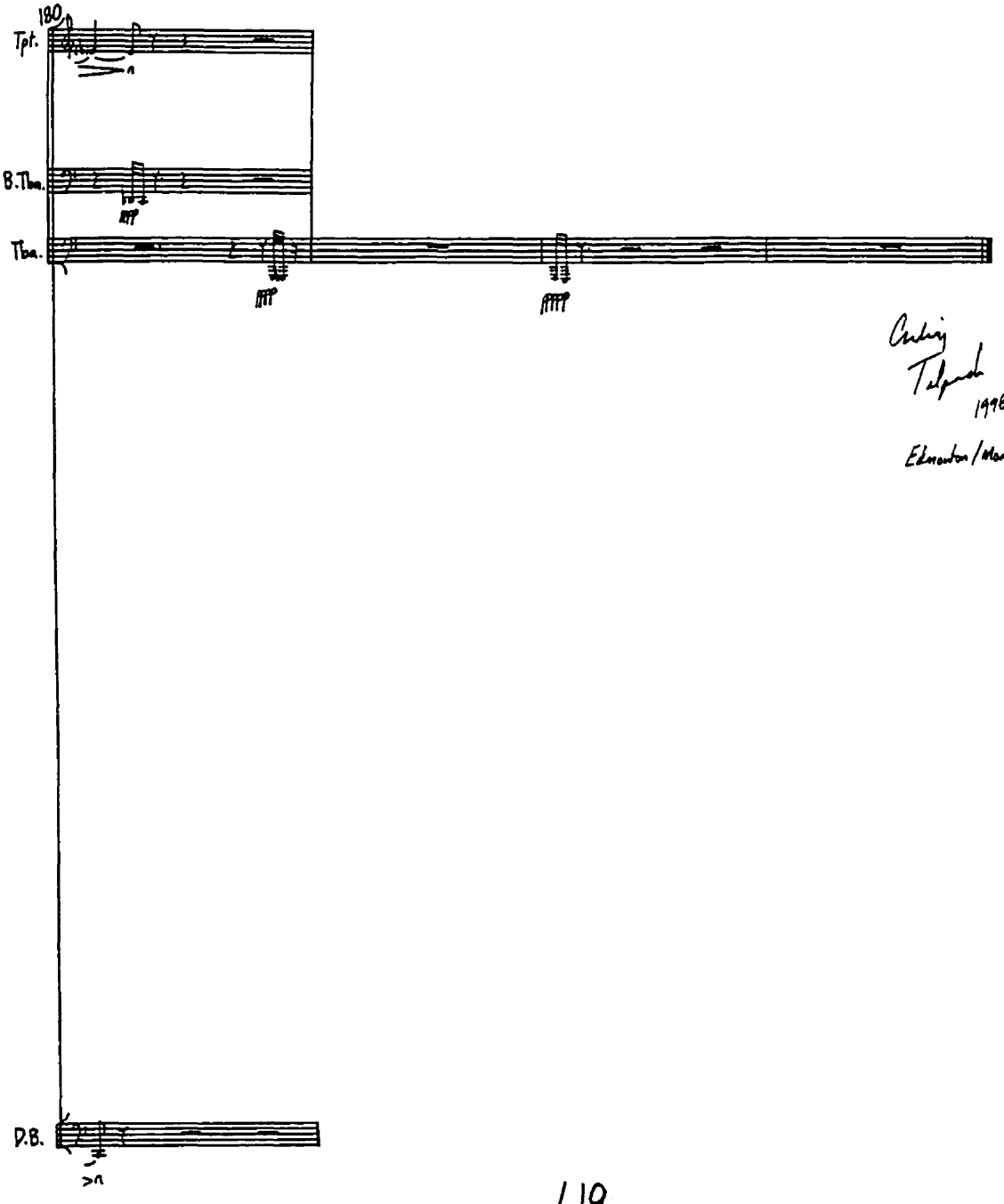

172
C.G.
(pp)
C.G.
(pp)
F.H.
Tpt.
Tbn.
B.Tbn.
Tba.
Vln.1
Vln.2
Vla.
Vcl.
D.B.
(ppp)

Rit. al Fine...



(Rit. al Fine...)

Conductor: Keep conducting to very end...



Andrew Tolpinski
1998
Edmonton/Montreal

Analysis

Introduction

Queezinart – hocket in a blender is a composition for eighteen players – five woodwinds, five brass, two percussionists, piano, two violins, viola, cello and double bass – with a duration of approximately fourteen minutes. The title has no relevance to the musical materials in the piece; it is a title chosen so as not to impose presupposed programmatic ideas and/or emotive qualities on the listener. Therefore, the piece has no subjective meaning – it is simply a flow of musical events. One could suggest that the title implies the existence of 'hocket-like' material in the work, but this material would be 'minced' and scattered due to the fact that it has been fed to a blender, in a figural manner, of course. This, then, leaves the listener confused with respect to the dispersed appearance and the function of the 'hocket-like' material, and more importantly, leaves the listener at 'square one' – deciding how to listen to the piece. Furthermore, the absence of presupposed conditions forces one to listen actively to the immediate characteristics of the piece as it unfolds – timbre, form, rhythm, dynamics, etc.

The non-programmatic title is important insofar as it imposes on the listener the important issue of the piece – 'figures.' Figures can be described as the movement of sound in a multi-dimensional process. The figures in this piece have a dual role in respect to how they are structured and how they function in a large-scale form. Firstly, the figures in this piece undergo slow and gradual

metamorphosis within sections, and on a larger scale, from section to section. Secondly, the figures are created in such a way that they distort and manipulate perceived time. The unification and interplay of these two ways in which figures behave in this work establishes a form, one which acts as a co-dependent third factor in a multi-dimensional web of interrelated elements working together to cause the manipulation of perceived temporality. Before tackling the specific figural details that enable musical temporal manipulation in each of the six sections in *Queezinart – hocket in a blender,* it is necessary to discuss how figures can manipulate and distort perceived time.

Manipulation of time

A key influence in composing *Queezinart – hocket in a blender,* with respect to the manipulation of perceived time, is the theoretical and psychological philosophy of music termed 'complex.'[1] A major composer of 'complex' music is Brian Ferneyhough (b. 1943), a composer who often strives to distort perceived time in his work. One of the reasons this music is labeled 'complex' is due to its 'information-overload' aural quality. Barbara R. Barry believes that the more 'effort' required to process a multitude of complex musical events the more time the listener believes has gone by; she has termed this *The Tempo/Density Theory.*[2] Most often, when music is so densely written with respect to rhythms, dynamics,

[1] This music is also referred to as "New Complexity."
[2] Barbara R. Barry, *Musical Time: The Sense of Order* (Stuyvesant, NY: Pendragon Press, 1990), 181.

attacks, and timbres within a multitude of simultaneous figural processes, the brain can not 'catch up,' thereby distorting and lengthening the natural sense of time; this "constantly creates situations which are psychically rather than physically exhausting."[3] This occurs when 'clock' time, or the internally constant, natural human time of reference—heart rate, rate of breathing, adrenaline flow—is distorted due to the swarm of audible information in a multi-dimensional frame. Ferneyhough has said that this can occur in music where "the relationship between the rate of harmonic change and the density of surface figuration...encourage[s] the mind to move 'too fast' and, as a result, find itself constantly pulled up short by the slightly counterintuitive viscosity of information presentation."[4] Though this is true, it must be clarified that "complex perceptual states arise, not from the quantity of discrete particles distinguishable therein,...but by reason of the perspectival causal energies with which they are invested as a result of the intersection, impingement and mutual transformation of linear processes in momentary successive or overlapping chaotic vortices of perturbance."[5] More simply, the perceptual distortion of time "does not correspond to the *amount* of information presented, but has more to do with contextual relationships, and with the quality of mental structures derived

[3] Richard Toop, "On Complexity," *Perspectives of New Music* 31, No.1 (Winter, 1993), 55.
[4] James Boros, "Composing a Viable (If Transitory) Self—Brian Ferneyhough in conversation with James Boros," *Perspectives of New Music* 32, No.1 (Winter, 1994), 123.
[5] Brian Ferneyhough, "Parallel Universes," in *Asthetik und Komposition: Zur Aktualitat der Darmstadter Ferienkursarbeit*, Darmstadter Beitrage 20 (Mainz, 1994), 18.

from the surfaces by the listener."[6] It is at this point that the manipulation and distortion of time becomes an objective entity:

> When we listen intensely to a piece of music there are moments when our consciousness detaches itself from the immediate flow of events and comes to stand apart, measuring, scanning, aware of itself operating in a "speculative time-space" of dimensions different from those appropriate to the musical discourse in and of itself. We become aware of the passing of time as something closely approaching a physical, objectivized presence.[7]

The only way in which manipulation and distortion of time can take place is through the retention of stimuli. Robert E. Ornstein, a psychologist who has studied and conducted experiments on the manipulation of perceived time, believes that the manipulation of experienced time must involve:

> ...a memory of the entire interval, longer than the fleeting 'input register' storage. The time-order effect shows that any approach to duration experience must be a storage one, not merely an 'input register' type. These theories are of similar order, the only difference being that the 'input register' holds that duration experience depends on the *input* information during the interval, while a storage approach holds [that] the information *remaining in storage* determines duration experience. [8]

In other words, it is the memory of events that is a crucial factor in the distortion of perceived time. Also, the degree to which experienced time will be lengthened depends on the size of space required to retain stimuli:

> It takes more space to store new events, so that an increase in the number of events in an interval should increase storage size and lengthen the experience of duration of that interval. It also takes more space to store increasingly complex events (in the information theory sense) so the experience of duration should lengthen as the complexity of the stimuli or of the *sequence* of stimuli increase.[9]

---

[6] James Boros, "Why Complexity—Part Two (Guest Editor's Introduction)," *Perspectives of New Music* 32, No.1, (Winter, 1994), 91.

[7] Brian Ferneyhough, "The Tactility of Time (Darmstadt Lecture 1988)," *Perspectives of New Music* 31, No.1 (Winter, 1993), 21.

[8] Robert E. Ornstein, *On the Experience of Time* (Middlesex, England: Penguin Books, 1969), 104.

[9] Ibid., 105 - 106.

The manipulation and distortion of time in *Queezinart – hocket in a blender* is based on the discussions above regarding the manipulation of time. As far as the distortion of perceived time is concerned, a distinction must be made: 'figure' is, in a way, related to 'texture', but there is an important difference. To manipulate perceived time, one must not regard the movement of sound as 'texture.' A single, global view of a mass of musical information (textural listening) negates any chance for there to exist any distortion of perceived time. On the other hand, when one listens to a mass of musical information as interwoven and interrelated non-linear sound objects in motion, then time distortion might occur. It is the intent in most of the six sections of this piece to start at a low and static degree of perceptual temporal distortion, increase to a higher degree, and then decrease back down to a lower degree. In other words, the figures expand the perceived duration of each section by a length generated due to the activity and density of musical information. The degree to which experienced time will be lengthened ultimately rests on the listener's musical ability. An experienced listener will retain more of the specific details of musical ideas and figures for a longer period of time—thereby increasing the degree of perceived time distortion—than an inexperienced listener. As mentioned earlier, the way in which time is manipulated in this piece is dependent on the figures: activity in the individual voices (linearly), activity in general (vertically/non-linearly), orchestration (timbres involved), dynamics, register, short and long notes, etc.. Though the figures and perceived temporal distortions change

slowly and gradually, thereby naturally blurring sectional articulations, formal divisions are appended here for analytical purposes:

Section A: mm. 1 - 37

B: mm. 38 - 81

C: mm. 82 - 106

D: mm. 107 - 146

E: mm. 147 - 159

F: mm. 160 - 183

Sectional analysis

In the following discussion, the musical activity of the figures in each of the six sections will be examined, in order to show how these figures generate perceived temporal distortions.

Section A — mm. 1 - 37

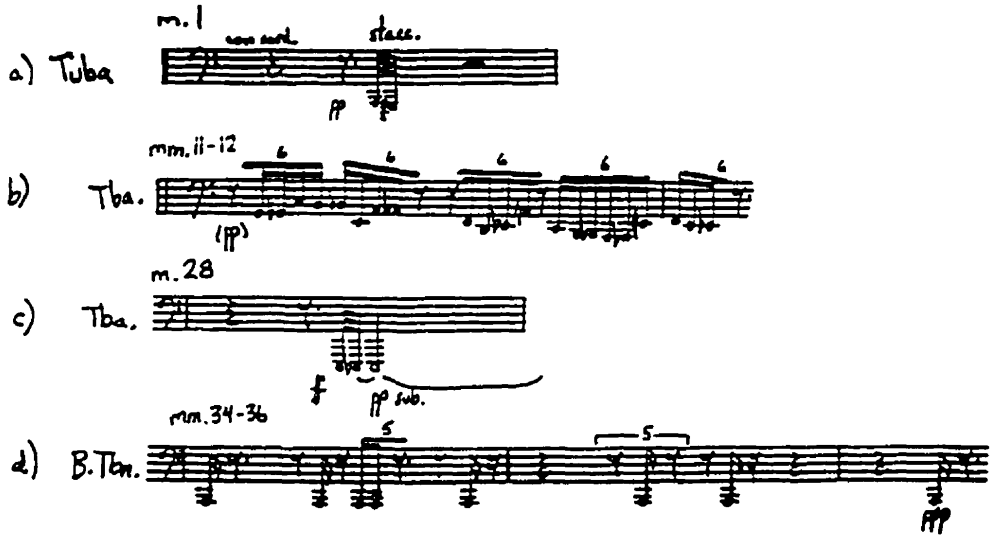
Section A is in two parts. The first part (the opening of the piece) begins with the muted tuba playing a two-note motive, a descending semitone in the low register. This motive appears throughout the work, performed only by low-register instruments. The motive is augmented by the addition of instruments, and is itself developed into longer, 'extended' motives. As instruments and

instrument families 'pass' the 'extended' motives back and forth in mm. 1 - 15, the figure begins to feel more and more unstable. In composing this figure, the notes for each instrument (linearly), were selected somewhat randomly, though favoring tritones, semitones and thirds. The rhythms were chosen with awareness to physical and technical limits of each instrument. The overall intent in mm. 1 - 16 was to create the illusion that the two-note motive had multiplied infinitely.

In mm. 14 - 15, the cello abandons its original figure to bring us into the second part of Section A, mm. 16 - 37. The primary focus of this second part is the 'centralization' of the note *e*; the cello initiates this activity in m. 16, joined by the viola in m. 19, and the two violins in m. 20. The strings 'centralize' around the *e* by attacking and sliding between *e* and their upper and lower quarter-tones until m. 32. The note *e* was chosen because of the violin's double-stop capability; *e*-natural is produced on I (*sul E*) and the upper and lower quarter-tones of *e* are produced on II (*sul A*), thereby blurring the pitch. The upper woodwinds and trumpet join the 'centralization' of *e* in mm. 23 - 37, thereby overlapping and completing the 'centralization' in the second part of Section A. In the 'background,' the instruments from the first part of Section A (minus the cello) reiterate the two-note motive from the first part of Section A, although here they attack together.

It should be noted that in Section A, four rhythms which are closely related are introduced; these enter again at different points in the piece: a) the

two-note motive, b) a series of 'random' notes in continual rhythm, c) the two-note motive with the second note held, and finally, d) a repeated note, with the duration of rest between each successive entry gradually increasing.



As the activity increases in mm. 1 - 16, the perceived time is lengthened due to the amount of information being processed; the countless pitches, dynamics, instruments, timbres, rhythms, etc., gain in activity and momentum thereby forcing the expansion of experienced time. As the listener tries to accept perceptually the processes and relationships of all the musical elements, the mind can not 'catch up' to the abundance of information, thereby making the mind believe that more time had passed than actually did. However, by 'centralizing' *e* at m. 16, the listener may feel a return to 'clock-time' from lengthened perceived time. This 'centralization' of *e* is far more stable harmonically compared to mm. 1 - 15, where there is no pitch center. On the other hand, the lengthening of perceived time may continue into the second part of Section A due to the many unstable frequencies being projected from the

quarter-tones. Nonetheless, perceived time returns to 'clock-time' as the activity gradually slows to a static end in m. 37. Therefore, the perceived temporal distortion and lengthening started at a very low level, proceeded to a very high level, and returned to normal.

Section B—mm. 38 - 81

The transition into Section B from Section A is very smooth; the two violins, viola and cello hold high harmonics into Section B. In mm. 38 - 44, the piano plays short ideas that never develop. Beginning in m. 44, emphasis is placed on strict sectional writing as the woodwind, brass and string sections perform their own figures for the remainder of the section, as the piano and percussion help punctuate attacks and fill out the timbre. The writing is arranged so that the focus jumps between the instrumental groups. The shift of attention between the three figures creates a larger 'conversation-like' figure. As two figures diminish in activity and dynamics, the remaining figure is brought to the foreground. In m. 68 the three instrumental groups continue similar material from before, but now without regard to each other's activity, meaning that the three figures act independently from each other. The three figures in mm. 68 - 75 are somewhat similar; nine-tuplet groupings are used. In m. 75, all instrumental groups, except brass, have nine-tuplet groupings, and on beats

three and four of that measure, the nine-tuplets are grouped by six to set up the climactic 6/8 meter in m. 76. Two pauses then occur for contrast and relief.

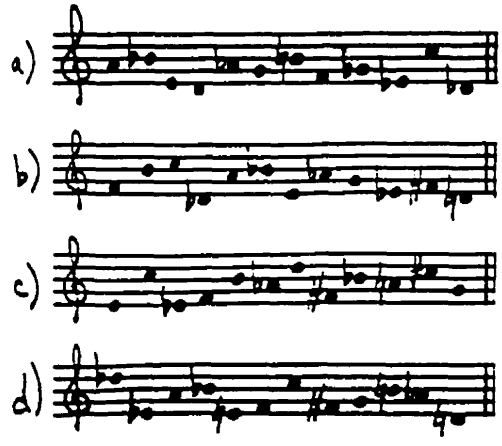
The pitches used in Section B are, linearly, far more chromatic (by half-steps) than in Section A. Also, with respect pitch organization, in m. 68 the brass section introduces a 12-tone series:

Each sequential entry is the next note of the series, and the dynamics increase for the first three of four repetitions of the series. This 12-tone series is one of four 12-tone series heard in the piece, but the first four notes of this particular series become very important in Section C, and for the remainder of the piece.

Perceived time slowly and gradually lengthens in Section B, due to the continual addition of layers of activity, but there is a return to 'clock' time at the *fermati* in the last two measures of the section due to the lack of aural stimuli during the *fermati*. The transfer and transaction of figures in the foreground enables the manipulation of time. The kind of 'roller coaster' transfers of figures being forced into the foreground and, in mm. 68 - 75, the addition of independent figures performed simultaneously, causes the mind to believe more time has passed. It is because the three different figures are constantly emerging into the foreground that the mind must constantly work to shift its focus onto the different figures, thereby extending perceived temporality.

Section C—m. 82 - 106

The function of this section is transitional, i.e., the movement from Section B to Section D. There are two new musical ideas that are introduced in this section. Firstly, sequences of unison notes are implemented as a contrast to the first two sections. In m. 82, several instruments play a unison line but some of the notes in the line are held. This idea appears, though varied a little, in the brass, double bass and piano in mm. 90 - 97. The idea finally comes to be realized in its entirety in the flute, two clarinets and piano in m. 93, and joined by the bassoon and oboe in m. 98. The second musical idea introduced in Section C is the use of 12-tone series. There are four unrelated 12-tone series employed in this section:



The first four notes of the first 12-tone series appear throughout this section. The *a, b-flat, d* and *e* first appear in this section in m. 85, in the crystal glasses, percussion, and piano. The four notes appear as a chord in m. 87 in the two violins, viola and cello. These strings then continue by making *glissandi* between the four notes of the chord, re-bowing every chord note. The entirety of the four

12-tone series begins in m. 93 and ends in m. 106. The introduction of running 16th notes in the piano and woodwinds in m. 96 prepares for the musical events in Section D.

Although there are 3 layers of figures in the most dense part of Section C, the listener will perceive the passing of time close to 'clock-time.' By systematically repeating musical ideas, the figures involved are straightforward and not complex to process mentally; for example, the brass, double bass and piano stack notes to form chords that recur every measure, in mm. 90 - 97. In the same way, with respect to repetition of material, the *glissandi* in the strings in mm. 88 - 96 repeat consistently. The only material that could cause the lengthening of perceived time is the running 16th notes in the woodwinds and piano, in combination with the other two figures—mm. 93 - 97. The running 16th notes themselves will not cause too much temporal distortion due to the fact that the tempo is slow enough (quarter note = 50, at m. 98) that each and every note will be heard and easily processed, and, also due to the fact that the 16th notes are not broken; there are no rests inserted to create an unpredictable figure.

Section D—mm. 107 - 146

There are two parts in Section D; mm. 107 - 135, and mm. 136 - 146. Section D is the middle of the piece, approximately near the 7'30" mark. With

this in mind, a change in time signature seemed appropriate. In a way, it is also a change of pace. The halving of the beat unit from a quarter to an eighth represents an illusion to a quicker tempo. The time signature changes here take the form of a palindrome: 9/8–5/8–7/8–6/8–13/8–6/8–7/8–5/8–9/8. It seems only fitting to set these time signatures into a palindrome at the center of the work. Not only does this pattern repeat three times, thereby forming its own palindrome, but formally, the main sections of the piece form a palindrome. This will become apparent in the discussion of Sections E and F.

The musical material in the three repetitions of the palindromic rhythmic cycles is very similar in that all three are based on the 'unison' figure from the previous section. With each successive repetition, the 'unison' figure takes on a new timbre, and because of the similarity in pitch structure, the figures simply expand through addition. The section begins with the solo clarinet; the second clarinet plays when the first clarinetist 'should' breathe, as the intent is to have a seamless musical line until the flute and oboe entry in mm. 113 - 114. The same four 12-tone series are used as in the previous section, which provides a natural and smooth continuation from Section C into Section D. In mm. 116 - 124, in the first repetition of the rhythmic cycle, the upper strings, percussion and piano take over and extend the 'unison' figure, but the sequence of pitches is not part of the 12-series used earlier, in mm. 107 - 115.

In the second and final repetition of the rhythmic cycle, mm. 125 - 133, the brass and percussion enter with a starkly contrasting timbre. Despite the shift in timbre, the brass continues the extension of the 'unison' figure. The third rhythmic cycle ends in m. 133, but the 'unison' figure continues into what seems to be another repetition of the rhythmic cycle—the 9/8 and 5/8 in mm. 134 - 135—but another cycle does not begin. If the pattern of time signature changes could be aurally received and decoded, then the ear and mind would be fooled in predicting the continuation of a complete new cycle beginning in m. 134. As the 'unison' figure comes to a close, the second part of Section D begins, mm. 136 - 146.

The second part of Section D acts as a transition to Section E. After the cacophonous ending of the first part of Section D, a more stable and calmer part is required in order to lead smoothly to Section E. In mm. 139 - 146, the foreground is represented by the oboe and muted trombone solo, doubled at the octave, which serves to continue the section's emphasis of lines at the unison, while other instruments support the solo through small dynamic swells, to which the percussion adds tremolos. This 'calm after the storm' also serves to lower the general register, so as to lead smoothly towards the low register at the beginning of Section E.

One of the ways in which perceived time will be altered is caused by the time signature changes. When the meter constantly shifts, the listener may feel lost. Ornstein has found that "more 'organized' experiences were estimated as shorter than disorganized ones. In storage size terms, a situation which was

'organized' would need less space in storage than a 'disorganized' one."[10] Compared to the previous time signature (4/4), the listener has no strong sense of the downbeat, making it difficult to predict or anticipate the next. Beginning in mm. 107 - 115, perceived time maintains relatively close to 'clock-time.' This begins to change at m. 116 where the entries of the woodwinds and percussion are unpredictable (in addition to the meter changes), and in the same manner, the entries of pitch patterns in the upper strings. The addition of layers, and increase in activity in the percussion in mm. 125 - 135, will also cause the listener's experienced time to lengthen. Although the perceived time will lengthen, the amount will not be as great as in Sections A or B. Also, the use of 'unison' figures provides a sense of harmonic stability, with which the listener will feel comfortable, even though the note patterns are chromatic and atonal. In mm. 136 - 146, the passing of perceived time should gradually return back to a stable 'clock-time' due to these two elements: a solo doubled in octaves, and the relatively static activity in the background.

Sections E and F—mm. 147 - 159, mm. 160 - 183

Beginning in m. 147, there is a return to figures similar to those heard previously in Section A. All of the rhythmic patterns employed in Section A (See p. 57), are now involved in mm. 147 - 156. In m. 155, the flute, oboe and upper

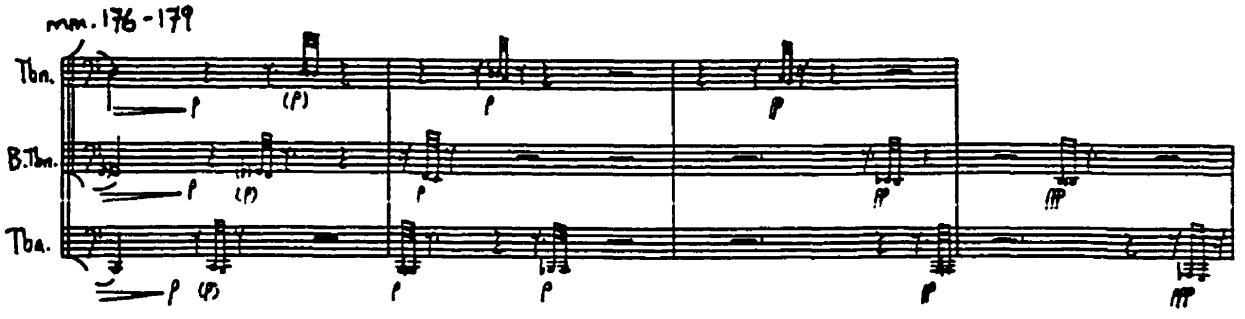
---

[10] Ornstein, 77.

strings continue the upward motion initiated by the brass. As the brass ends in m. 156, these higher pitched instruments continue the registral ascent, in a different manner from the brass only in that the notes are slurred. This registral ascent only serves to provide a smooth transition to Section F.

In Section F, beginning in m. 160, there is a return to figures heard in Section B. The piano solo is in the upper register, prepared by the registral ascent in the previous section, and is supported by the crystal glasses, harmonics in the strings and a low *c* in the double bass. The piano's registral descent in mm. 167 - 168 prepares the return of the low figures previously heard in Section A. The muted low-brass figure, against which the continuation of the string harmonics and crystal glasses are juxtaposed, descends chromatically with every repetition of the 'rhythmic pattern,' except for the first. Acting more as a musical 'link' than an object of juxtaposition to the low figures, is a muted trumpet that descends chromatically every measure. In mm. 172 - 176 the two violins, viola and cello play descending *glissandi*, which can be viewed as a continuation and/or addition to the chromatically descending figures in the brass. In m. 175 the two-note motive makes its final return as it concludes the work. An interesting event occurs rhythmically in mm. 176 to the end. Though linearly structurally intact, the repetition of the two-note motives takes the form of rhythmic pattern "d"(p. 57); therefore, in addition to *rit. al Fine* and *decrescendo*, there are greater rests between entries of the motive. The two-note motive

appears less frequently through time, thereby also resembling rhythmic pattern "d":



The work concludes with a final statement of the two-note motive played by the muted tuba.

Though the musical materials and events in Sections E and F are almost identical to those of Sections A and B, perceived time will not be affected as much as the first hearing. It is because the musical events are so similar, that in the 'second hearing' of these events, the listener will have already heard the material, and will be able to process the information far more quickly. Ornstein believes that one way in which a "given stimulus situation is changed is by its repetition."[11] He terms the repetition an 'automatic' stimulus situation. When repeating a stimulus, little memory space is needed (as the stimulus is already there), and our awareness for new activities decreases. Therefore, there is little, if any, distortion of perceived time in Sections E and F. An event that is perceptually interesting, though does not concern the manipulation of perceived

[11] Ornstein, 73.

time, is the very end. As the two-note motives become more sparse linearly and non-linearly, the anticipation of the next becomes heightened. As the last two-note motive sounds, almost two complete silent measures are conducted. The listener is waiting for the next tuba entry, and is wondering if there will be another. Nonetheless, the piece ends as it started.

Relationships within global form

As mentioned earlier, palindrome plays a role in this piece. Palindrome, as a device, exists in Section D as an organization of time signature changes, and it also exists as a large-scale structural device of constraint to provide an method of recognition and ability to 'follow' the motion and progression of figures within the piece. Given this, the piece has an ABA' large-scale form. One of the main determining factors of this form is the way in which pitch is used. In A and A', the pitches are randomly chosen on the most part, as opposed to B, where the pitch selection follows a predetermined system.

Bibliography

Barry, Barbara R.. *Musical Time: the sense of order*. Stuyvesant, NY: Pendragon Press, 1990.

Boros, James. "Composing a Variable (If Transitory) Self—Brian Ferneyhough in conversation with James Boros." *Perspectives of New Music* 28/2 (Win. 1994) 114 - 130.

Boros, James. "Why Complexity? Part Two (Guest Editor's Introduction)." *Perspectives of New Music* 32/1 (Win. 1994) 90 - 101.

Ferneyhough, Brian. "Parallel Universes." in Asthetik und Komposition: Zur Aktualitat der Darmstadter Ferienkursarbeit. *Darmstadter Beitrage* 20 (Mainz, 1994) 17 - 22.

Ferneyhough, Brian. "The Tactility of Time." *Perspectives of New Music* 31/1 (Win. 1993) 20 - 30.

Friedman, William. *About Time: Inventing the Fourth Dimension*. Cambridge, MA: The MIT Press, 1990.

Gabrielsson, Alf, Ed.. *Action and Perception in Rhythm and Music*. Stockholm: Kungl. Musikaliska akademien, 1987.

Gorman, Bernard S., and Wessman, Alden E., Eds.. *The Personal Experience of Time*. New York: Plenum Press, 1977.

Hartocollis, Peter. *Time and Timelessness, or, The Varieties of Temporal Experience*. New York: International Universities Press, Inc., 1983.

Hasty, Christopher F.. *Meter as Rhythm*. New York: Oxford University Press, 1997.

Kramer, Jonathan. *The Time of Music: new meanings, new temporalities, new listening strategies*. New York: Schirmer Books, 1988.

Ornstein, Robert E.. *On the Experience of Time*. Middlesex, England: Penguin Books, 1969.

Toop, Richard. "On Complexity." *Perspectives of New Music* 31/1 (Win. 1993) 42 - 57.