In the Deep End

For five improvisers

Score (transposed)

Martin Kay

Composed for my Doctor of Musical Arts,
Sydney Conservatorium of Music, University of Sydney

Premiered by Martin Kay (alto saxophone/clarinet), Emily Granger (harp), Steve Barry (piano),
Ben Carey (modular synthesiser) and Jamie Cameron (drums)
Recital Hall West, Sydney Conservatorium of Music, 31 October 2017

Instrumentation

Saxophone/clarinet
Scordatura harp
Prepared piano
Modular synthesiser
Drumkit/gongs

Duration: circa 55’

Dedicated to Emily Granger (harp), Steve Barry (piano), Ben Carey (modular synthesiser) and Jamie Cameron (drums) for their artistry. Your unique contributions indelibly shaped my work.

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Every surfer knows you have to put yourself in harm's way to catch a wave. The zone of bliss for the surfer is that thin line between a harmless swell and the impact zone of a crashing wave. As you paddle to catch a wave, you never know what's going to happen. You might catch the wave, make the drop, carve a bottom turn, and set your rail for the ride of your life. Or you might wipe out, crash in a torrent of thundering whitewater, and be left wondering which way is up.

Tim Cooley

Performance notes

Movements

1. *Resolve*
2. *Glare*
3. *Drift*
4. *Limber*
5. *Loom*
6. *Impact zone*
7. *Surfacing*
8. *Barrelling*
9. *One More*

I imaginatively shaped the formal evolution of *In the Deep End* through a surfing metaphor. Each movement creates a vignette of a surfing experience, arcing across the course of a session. For me, the experience of surfing is improvisational. To surf a wave, I must negotiate a chaotic system, a fact persisting from my first wave to the present day, with the only difference being the gradual emergence of a personal style and a growing range of responses. No two waves are the same and a surfer's trajectory remains a state of constant transformation: there is a feedback loop between the surfer, the consequences of the surfer's actions, and the wave, causing the surfer to constantly and intuitively modulate their actions. Relating this experience to an improvisational network: the ocean represents the composed elements, the immovable aspects of the ocean, the mass with the greatest resistance, as well as other improvised elements, a shifting and indeterminate body; like sand, or the rips and currents of the ocean, or the crumbling lip of the wave giving way after a swift manoeuvre.

Resolve is calm: as the surfer awakes, she gradually becoming more agitated, drinking coffee and imagining possibilities. *Glare* represents the surfer staring into the sun. *Drift* represents the ocean currents moving around the surfer's feet. *Limber* represents the surfer is warming up, finding her rhythm. *Loom* represents a clean-up set appearing on the horizon. The waves are large, breaking further out, marking the end of a rhythmic cycle. The surfer paddles towards the waves, hoping to

avoid a drubbing, or perhaps to catch one. The movement builds tension as the surfer gradually realises that she really must get a move on. *Impact Zone* represents the glorious moment the surfer, after having paddled vigorously, is now in a position to catch the wave. Operating above her skill level, she tumbles, now at the mercy of the turbulent, chaotic whitewash. *Surfacing*: the surfer broaches the surface of the ocean, able to breath. This movement is the most still and calm of the entire work, representing a catharsis. *Barrelled* is the moment the surfer catches a wave, riding the tube. This is the most flowing groove in the work, a steady, relaxed progression, with contracting and expanding rhythmic patterns and overlapping wavelike melodies. *One More:* The surfer is exhausted, paddling in, going home as it begins to rain.

Tibetan gong analysis

My compositional process for *In the Deep End* was improvisational from conception to conclusion. I experimented with eliciting a variety of sounds from the gong, striking and scraping it with a variety of materials, with an approach exploratory and spontaneous. The gong was subjected to hammers, hands, cloth, nails and several violin bows. Eventually I settled on several samples to be used as a part of the work. The composed elements for *In the Deep End* continuously developed during rehearsals, as my appreciation of each performers' capacities deepened.

Using the sonic analysis program *Spear*, I analysed a sample I made of the bowed Tibetan gong: the chosen sample generating the sonic space. Working from a sonogram, I translated sine waves into a table recording the closest equal temperament equivalent (with the cents deviation) and the equivalent hertz. Guided by the practicalities of writing for harp, I selected seven-and-a-half octaves of partials, I retained a mixture of the strongest, most stable partials, and a selection of unstable, intermittent and variable partials. I assigned these notes across the entire range, with no repeated tunings across octaves. At the bottom of the harp range, gaps are filled by standard, equally tempered tuning. As the range reaches higher every string conforms to the harp analysis (Figure 1).

Octave	Pitch (difference from Equal temperament)	Frequency (hz)
Octave 1 (O1)	A#1 (-87)	55.4
	B1 (-24)	60.9
Octave 2 (O2)	D2 (-83)	70.8
	B2 (-24)	121.8
Octave 3 (O3)	F3 (+48)	179.4
	A#3 (-69)	224
	B3 (-24)	243.6
Octave 4 (O4)	F4 (4)	350.1
	G#4 (20)	420.22
	A#4 (-53)	452.2
	B4 (-48)	480.4
Octave 5 (O5)	C#5 (-17)	549.1
	D5 (-19)	581
	F5 (-36)	684.1
	G#5 (-16)	822.92
	A#5 (-27)	917.8
	B5 (-50)	960
Octave 6 (O6)	C#6 (26)	1005
	D6 (-74)	1125.3
	E6 (-22)	1302.2
	F6 (-30)	1372.7
	G#6 (-43)	1515
	A#6 (-46)	1700.5
	B6 (-55)	1913.8
Octave 7 (O7)	C#7 (47)	2109.3
	D7 (-53)	2278.1
	F7 (-50)	2714.4

Figure 1: Tibetan gong analysis for In the Deep End

Harp scordatura

For simplicity of performance, I made the decision to construct the scordatura so that no pedalling was required to express the full set (Figure 2).

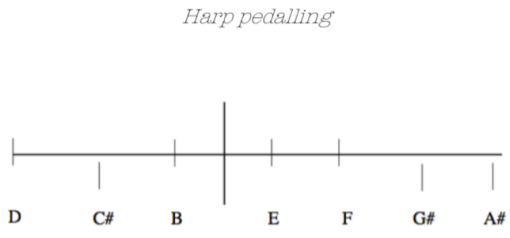


Figure 2: harp pedalling for In the Deep End

Piano preparations

Piano preparations radiate out from the central organising principle of the gong spectrum. Each note of the analysis governs a piano preparation. The process of preparation is an improvised act of discovery, as the pianist experiments with the placement of materials to gain an interesting array of sounds. For the first performance, the preparations mixed percussive sounds, creating a connection to the drums, as well as split sounds and surprising pitch shifts which hark back to characteristic qualities of the Tibetan gong.

Modular synthesiser

Figure 3 shows sine tones assigned to the modular synthesiser. Sine tones project a clarity contrasting with the more complex timbres occurring throughout the ensemble.

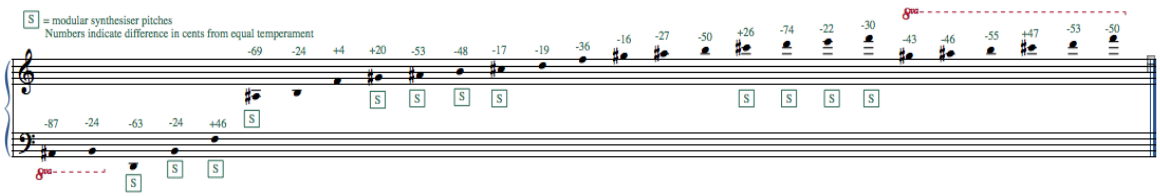


Figure 3: Modular synthesiser set (subset of gong analysis)

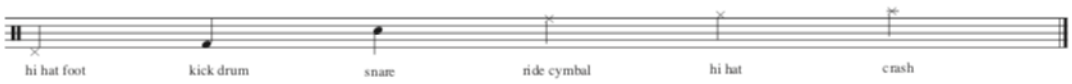
The modular synthesiser represents each temporal stage in the composition, from deconstructions of samples of the original gong sound, to playing melodies based on a pitch aggregate based from the gong analysis, to the improvised evolution of these structures in the perceptual present. For the first performance, I supplied recorded improvisations I made of my Tibetan gong. These samples were used in compositional tasks as well as being manipulated throughout the work, by being reversed, placed out of phase with each other, subjected to frequency and amplitude modulation, distortion, pitch shifting, looping, and any other mode of decomposition the performer

wished to engage. For future performances of the work, the performer should record samples from a gong being used in the work.

Saxophone/clarinet

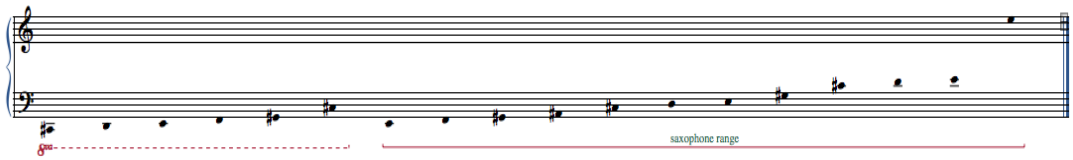
The saxophone/clarinet plays an intuitive role, experimenting with timbre and microtonal tunings to find a territory complementary to the altered pitch space.

Drumkit



Shared pitch material

The modular synthesiser, saxophone/clarinet, piano, and harp share an equal tempered set.



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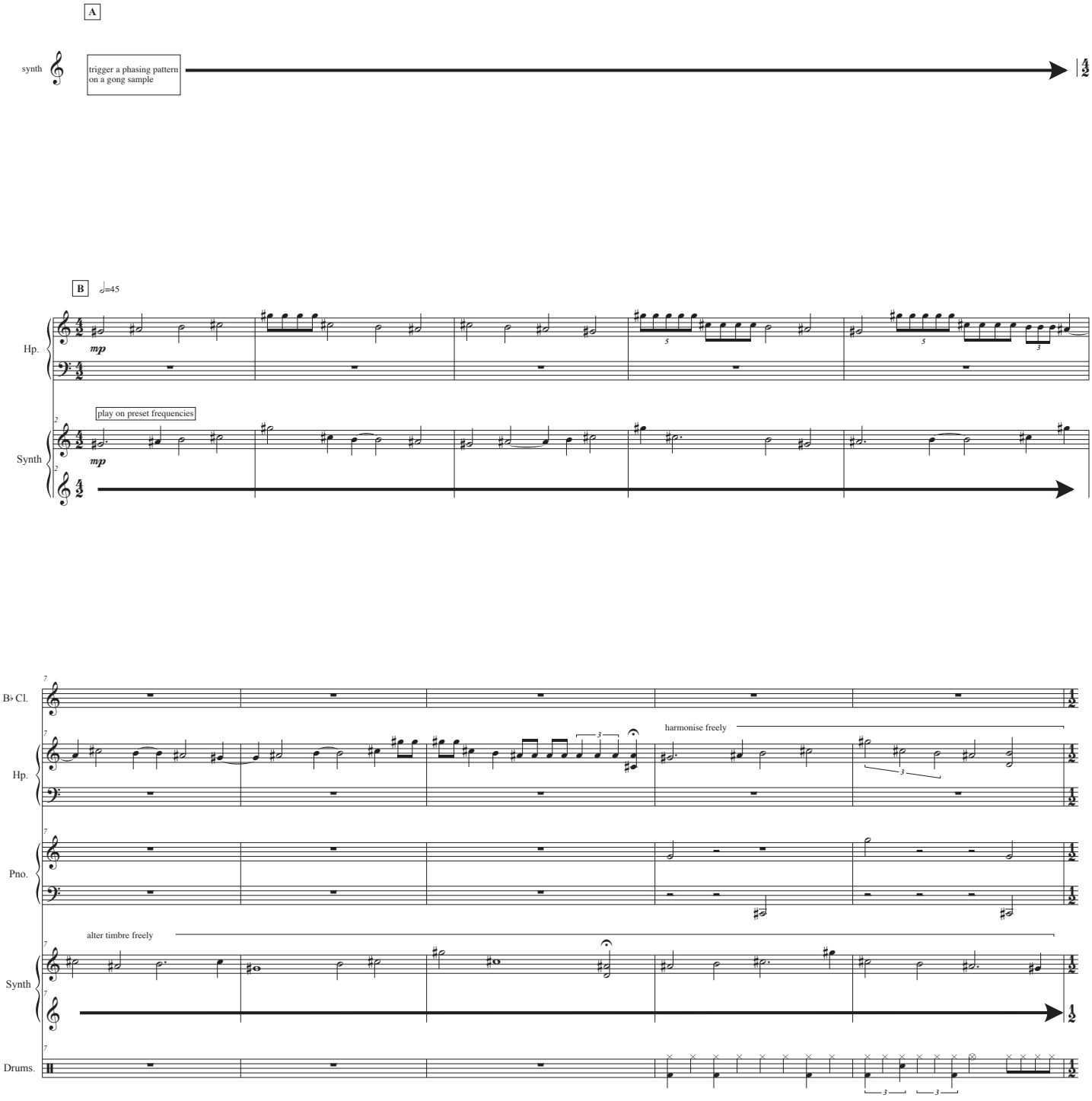
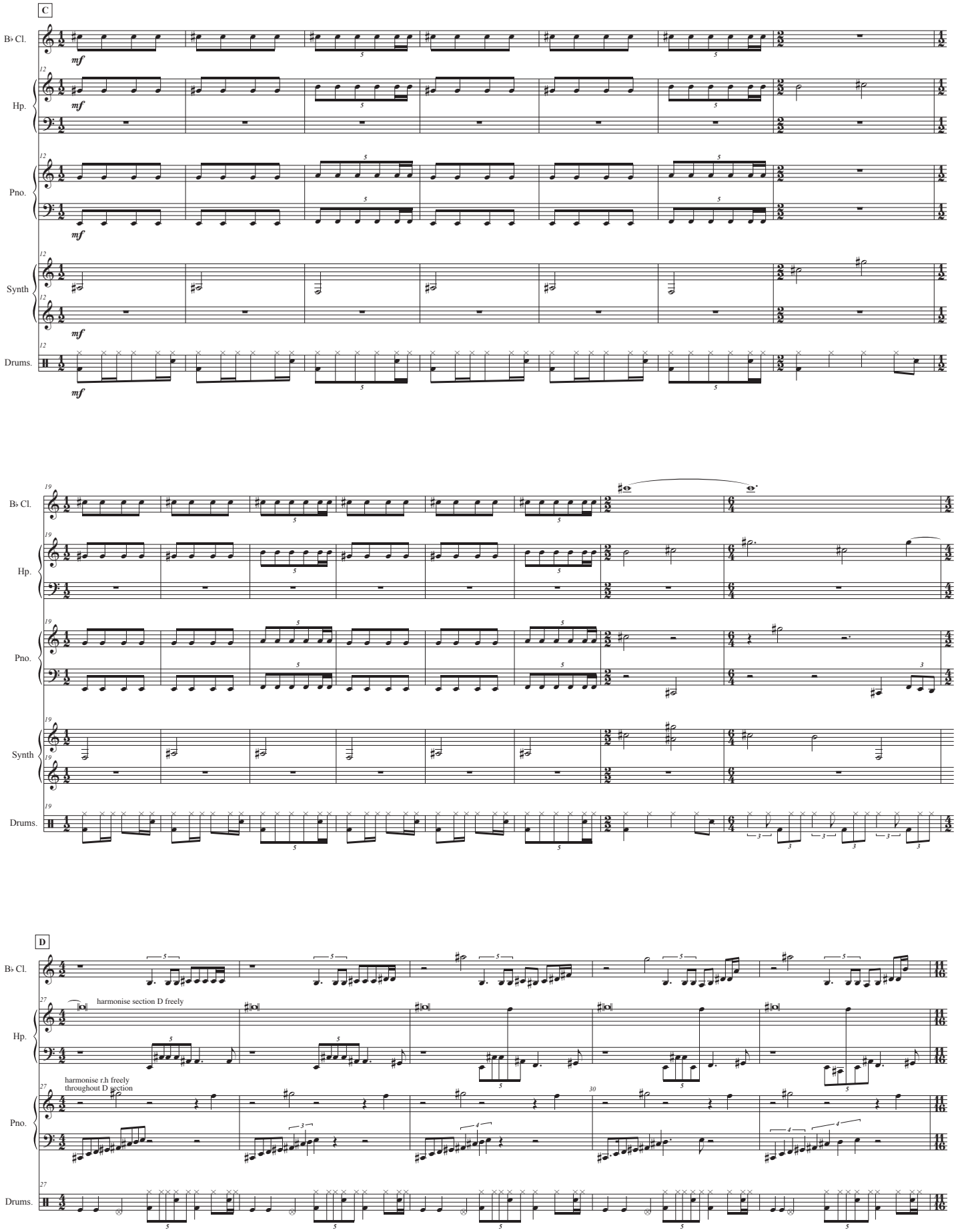
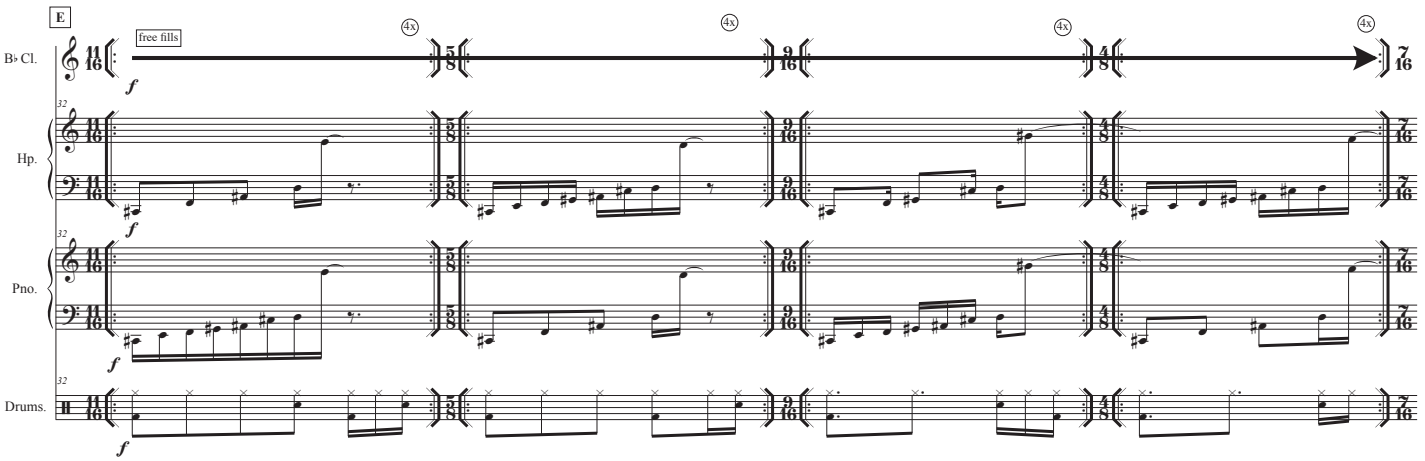
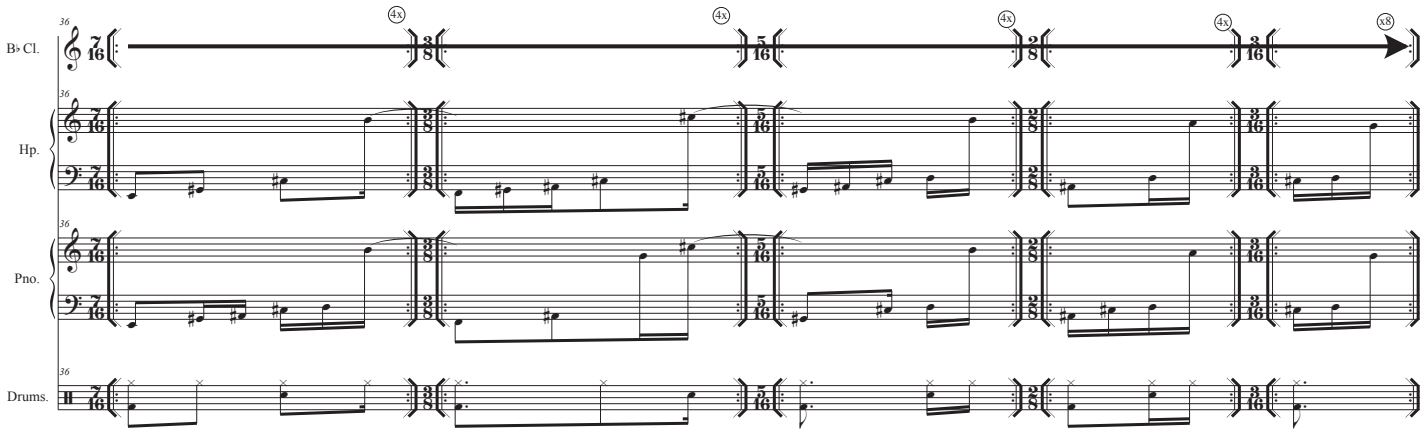
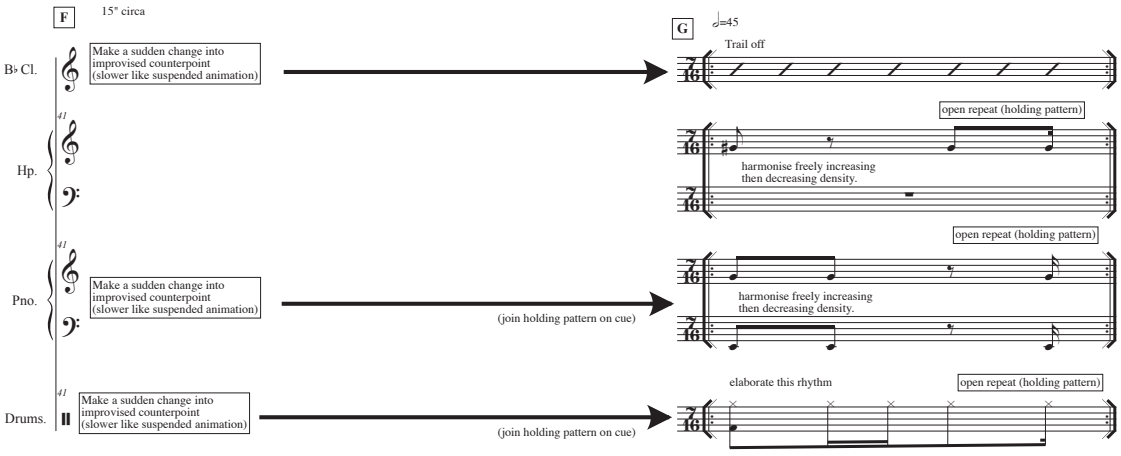
Resolve


A
synth
trigger a phasing pattern on a gong sample
B
♩=45
Hp.
mp
play on preset frequencies
Synth
mp
B♭ Cl.
harmonise freely
Pno.
alter timbre freely
Drums.

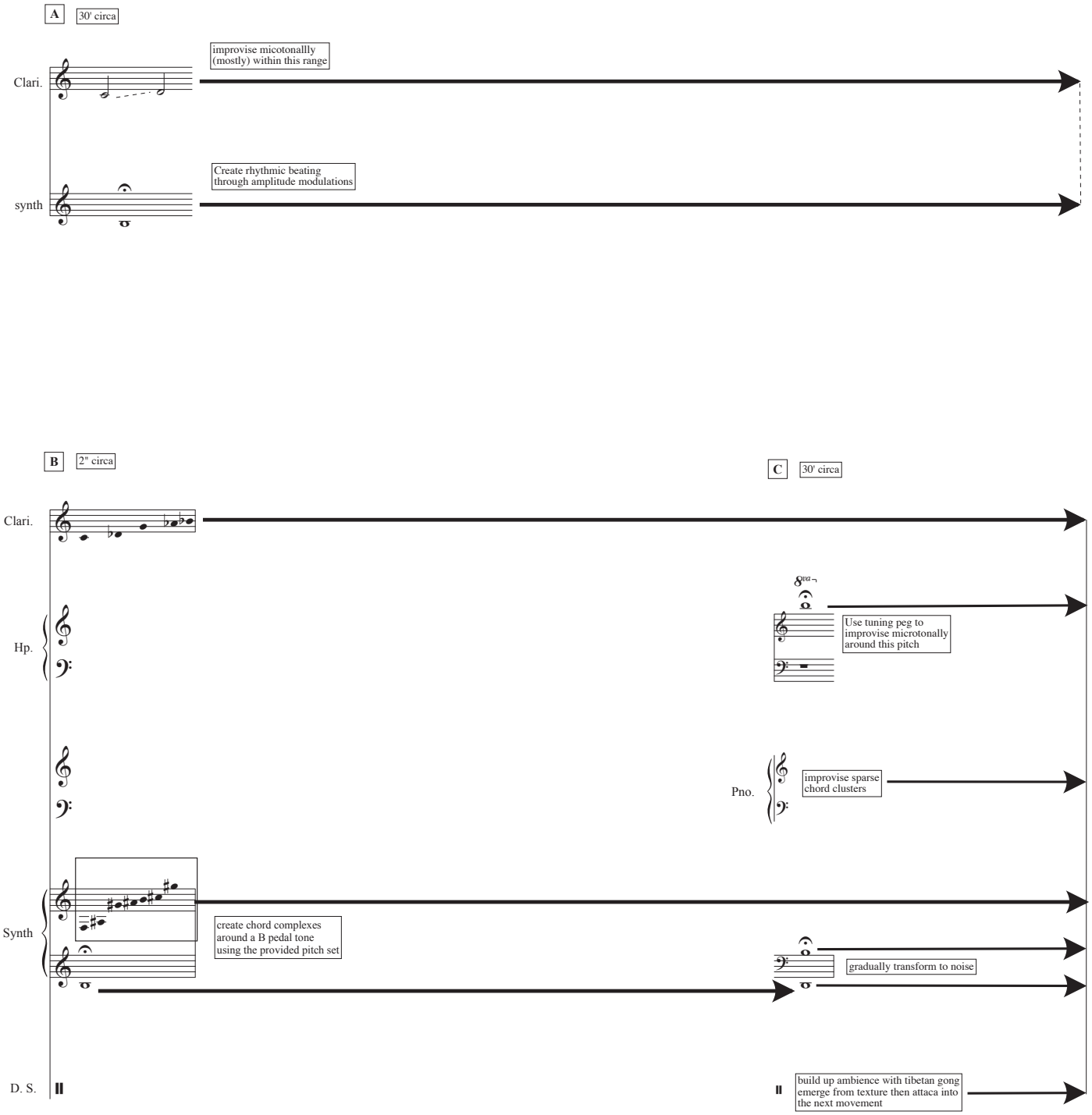

C
B♭ Cl.
Hp.
Pno.
Synth
Drums.
mf
D
harmonise section D freely
harmonise r.h freely throughout D section


E
free fills
B♭ Cl.
Hp.
Pno.
Drums.
4x

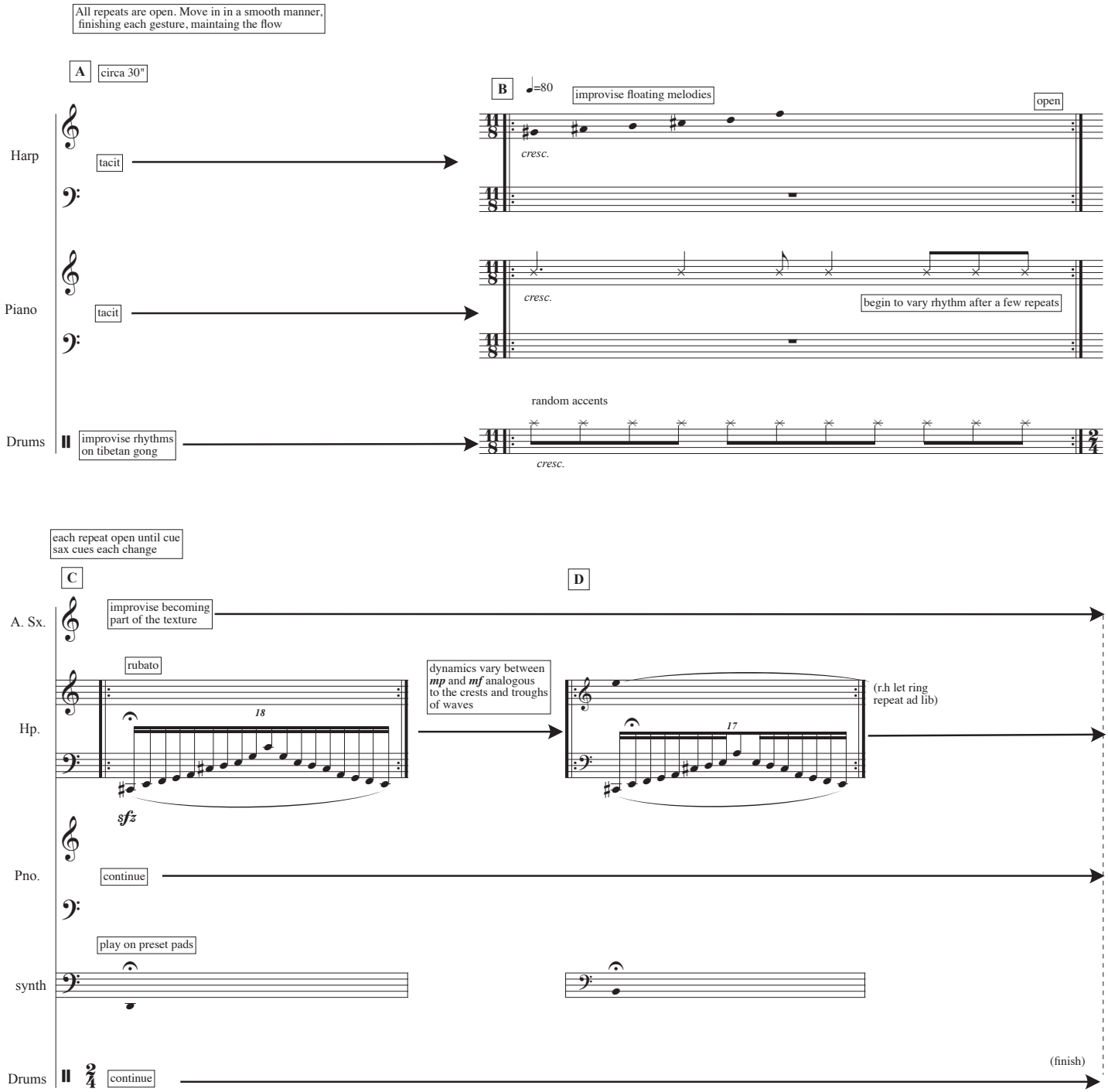

B♭ Cl.
Hp.
Pno.
Drums.
4x
x8

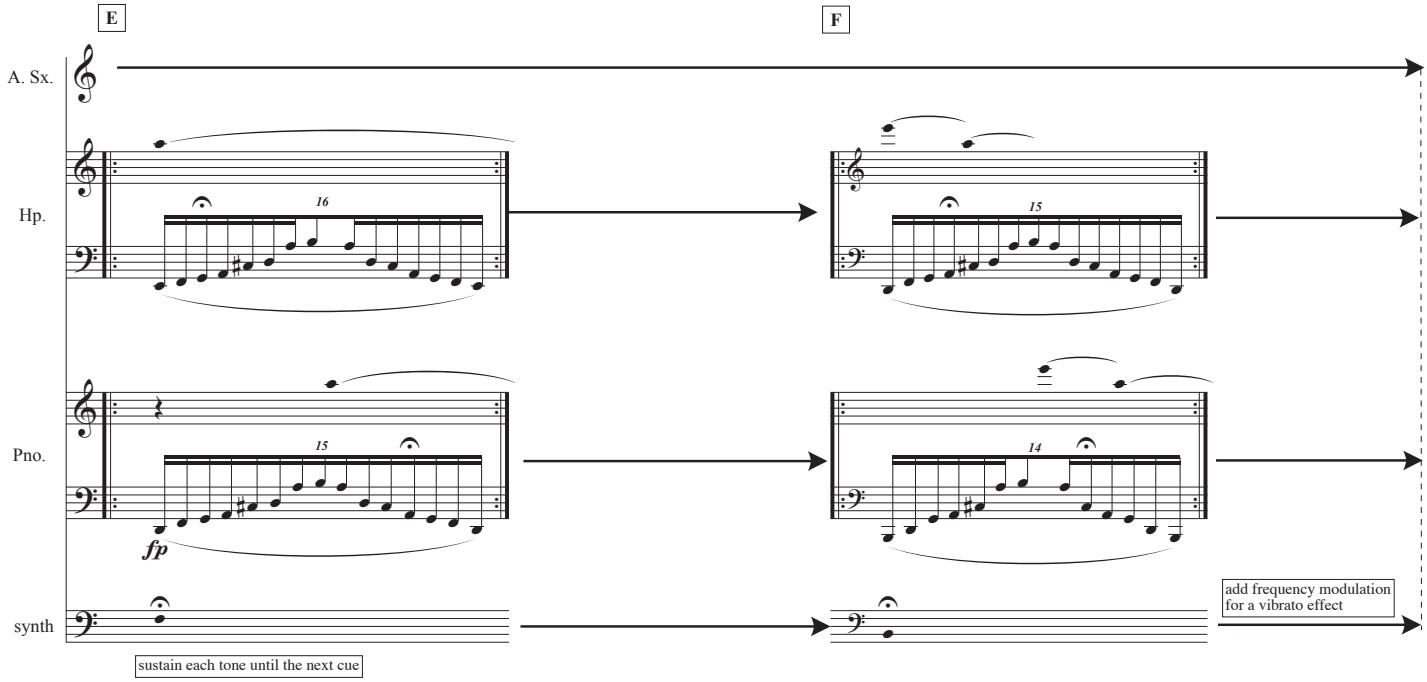

F
15" circa
B♭ Cl.
Hp.
Pno.
Drums.
Make a sudden change into improvised counterpoint (slower like suspended animation)
(join holding pattern on cue)
G
♩=45
Trail off
open repeat (holding pattern)
harmonise freely increasing then decreasing density.
elaborate this rhythm
attaca

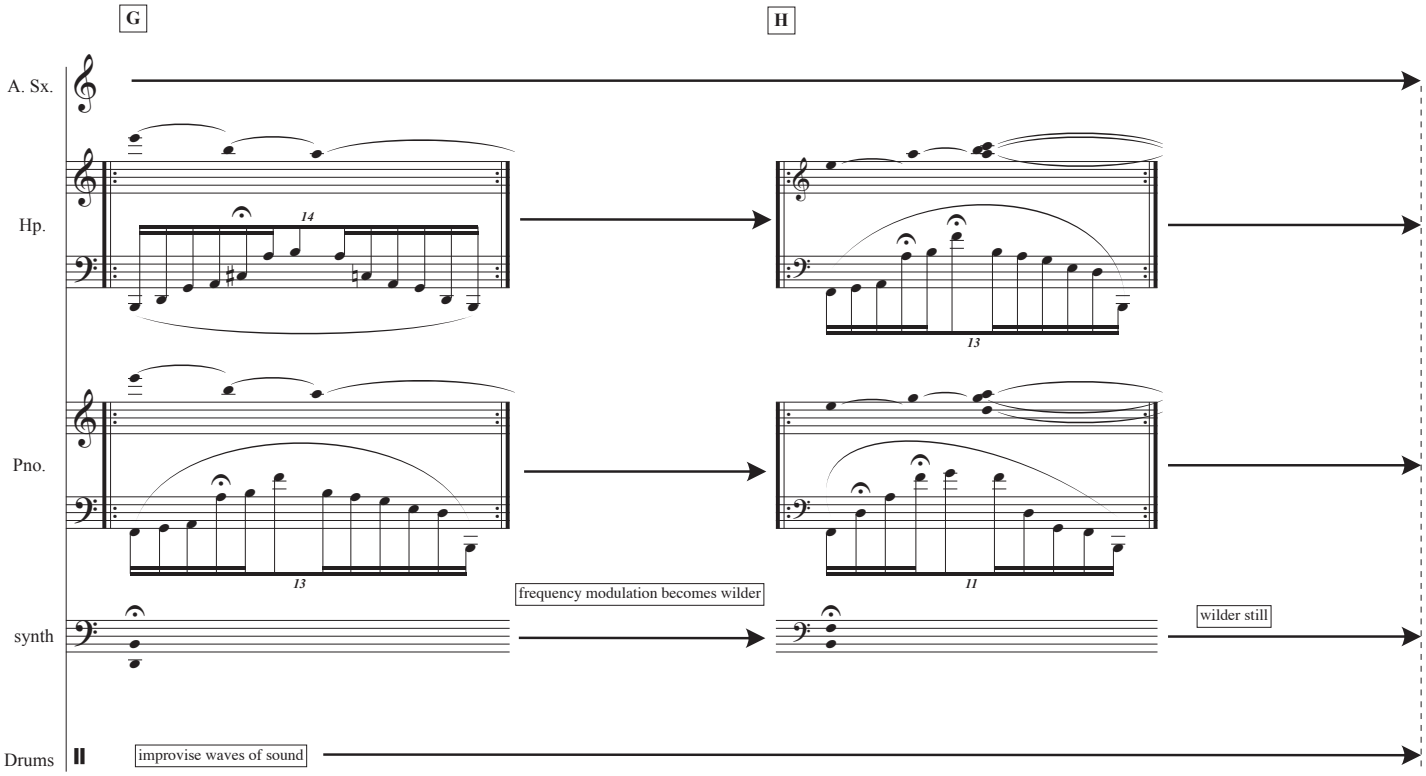
Glare

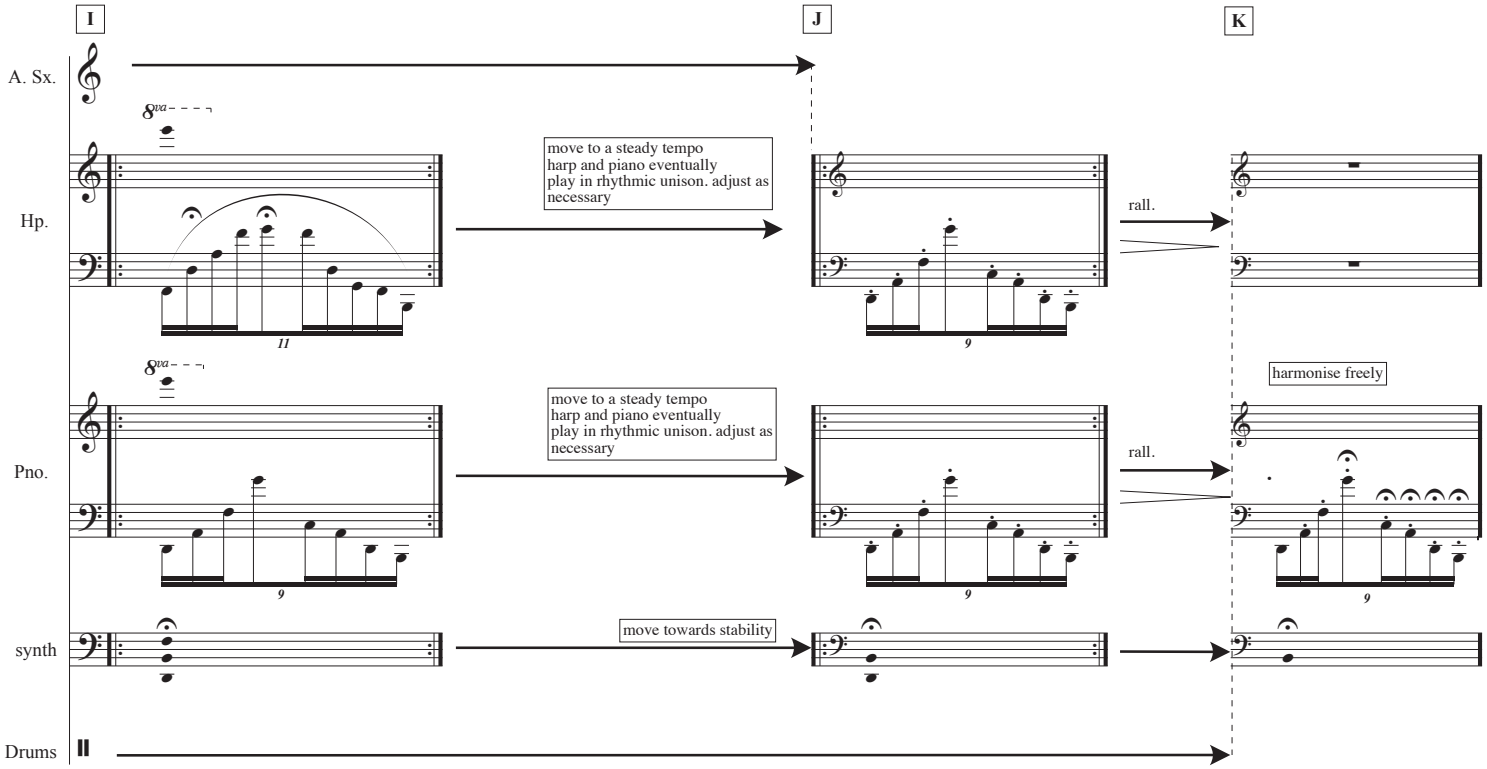

A
30' circa
Clari.
improvise micotonallly
(mostly) within this range
synth
Create rhythmic beating
through amplitude modulations
B
2" circa
C
30' circa
Clari.
Hp.
Use tuning peg to
improvise microtonally
around this pitch
Pno.
improvise sparse
chord clusters
Synth
create chord complexes
around a B pedal tone
using the provided pitch set
gradually transform to noise
D. S.
build up ambience with tibetan gong
emerge from texture then attaca into
the next movement
ATTACA

Drift

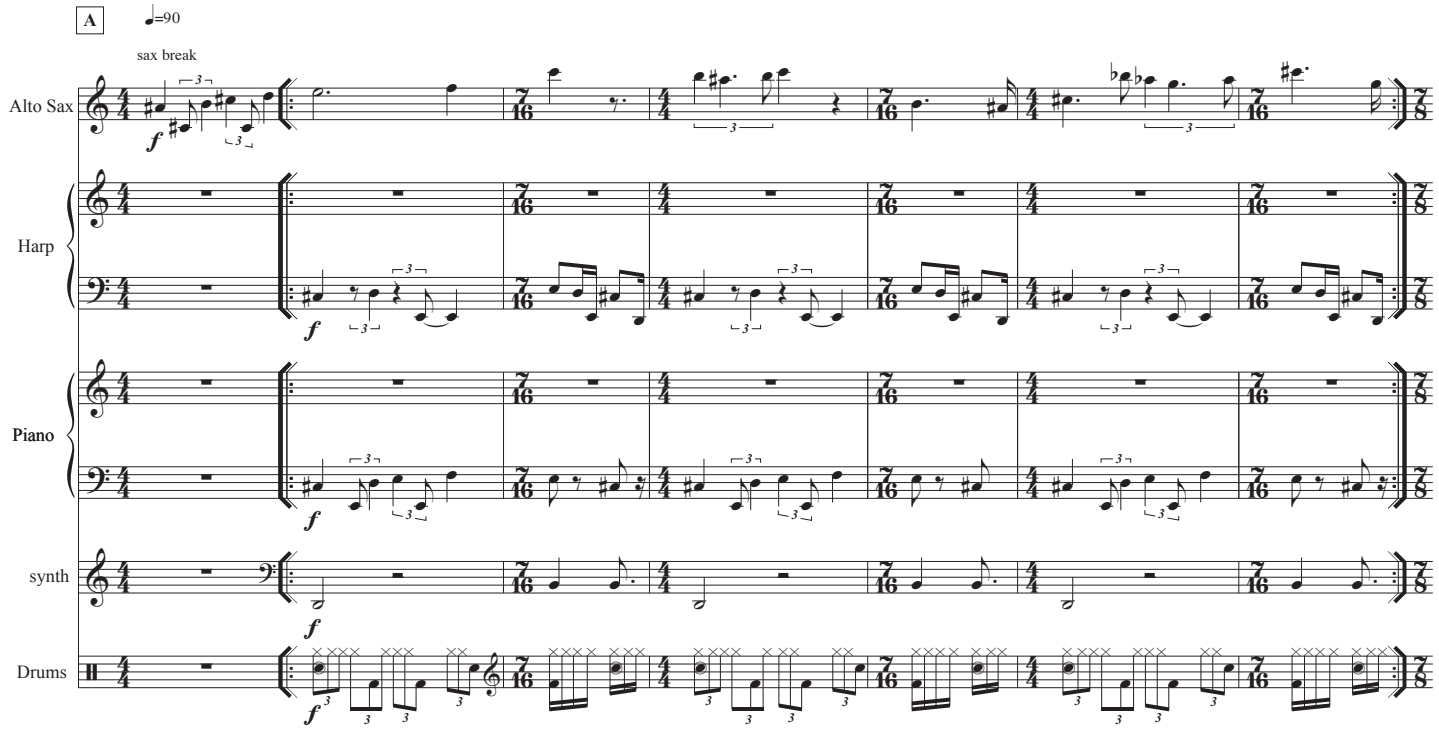

All repeats are open. Move in in a smooth manner, finishing each gesture, maintaing the flow
A
circa 30"
B
♩=80
improvise floating melodies
open
Harp
tacit
cresc.
Piano
tacit
cresc.
begin to vary rhythm after a few repeats
random accents
Drums
improvise rhythms on tibetan gong
cresc.
each repeat open until cue
sax cues each change
C
D
A. Sx.
improvise becoming part of the texture
rubato
dynamics vary between mp and mf analogous to the crests and troughs of waves
(r.h let ring repeat ad lib)
Hp.
18
sfz
17
Pno.
continue
play on preset pads
synth
Drums
continue
(finish)

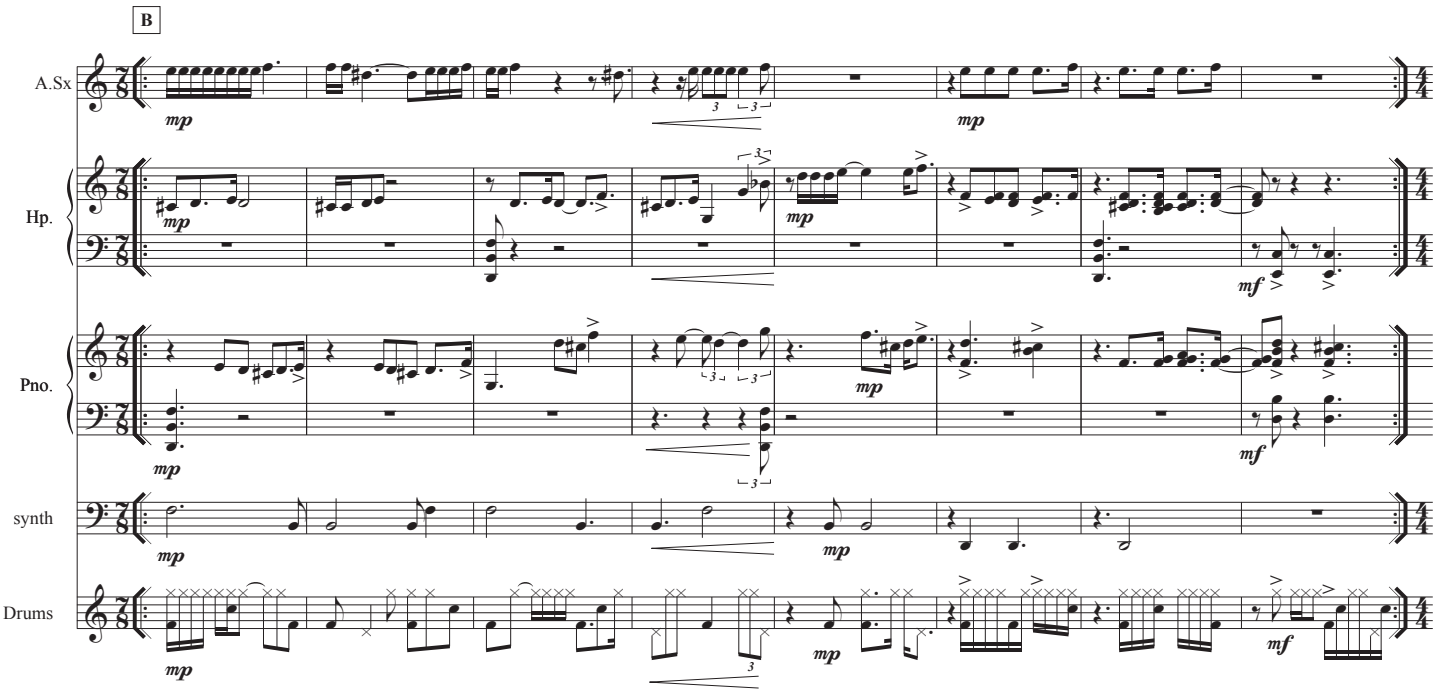

E
F
A. Sx.
Hp.
16
15
Pno.
15
14
fp
synth
add frequency modulation
for a vibrato effect
sustain each tone until the next cue

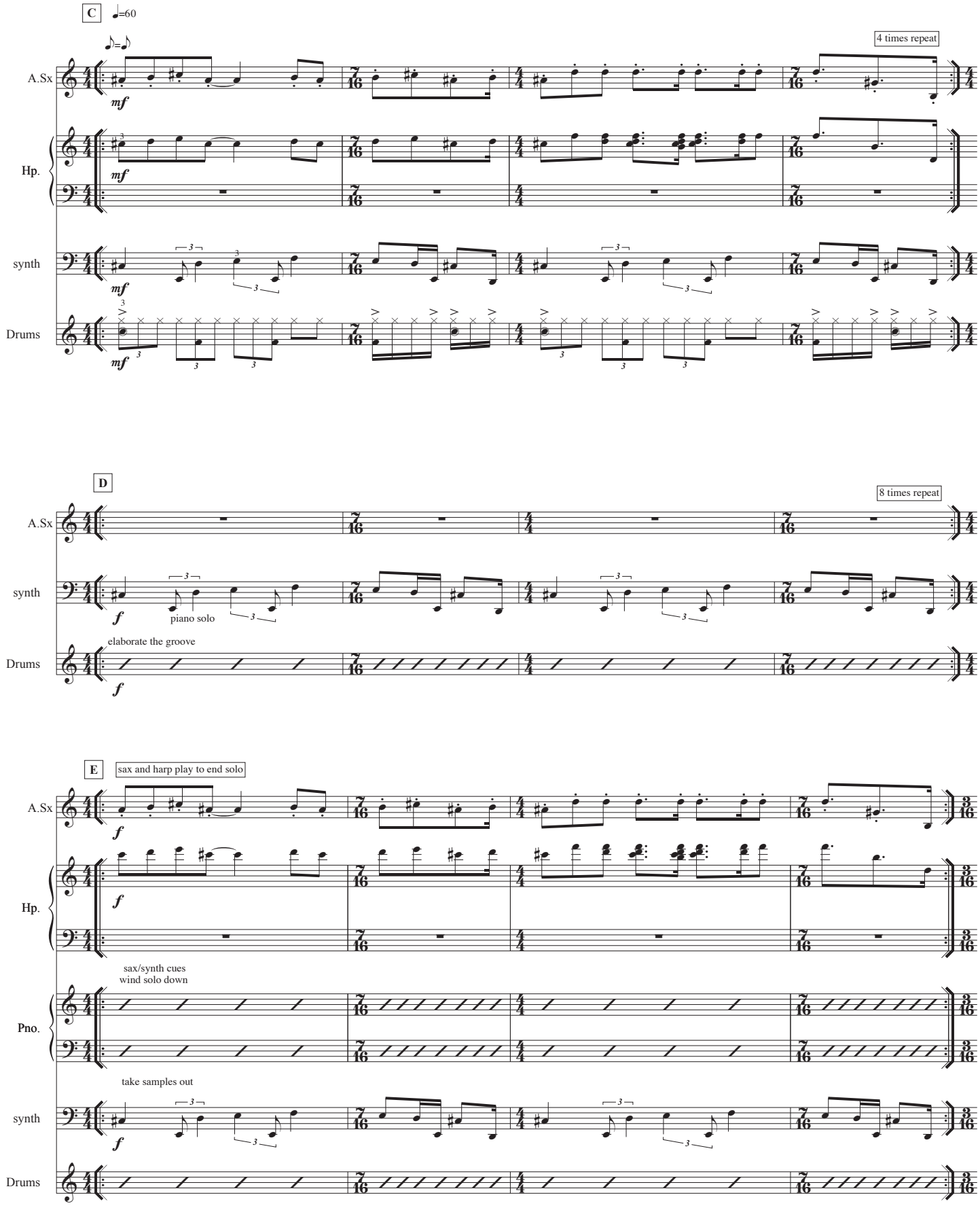

G
H
A. Sx.
Hp.
14
13
Pno.
13
11
frequency modulation becomes wilder
synth
wilder still
Drums
improvise waves of sound

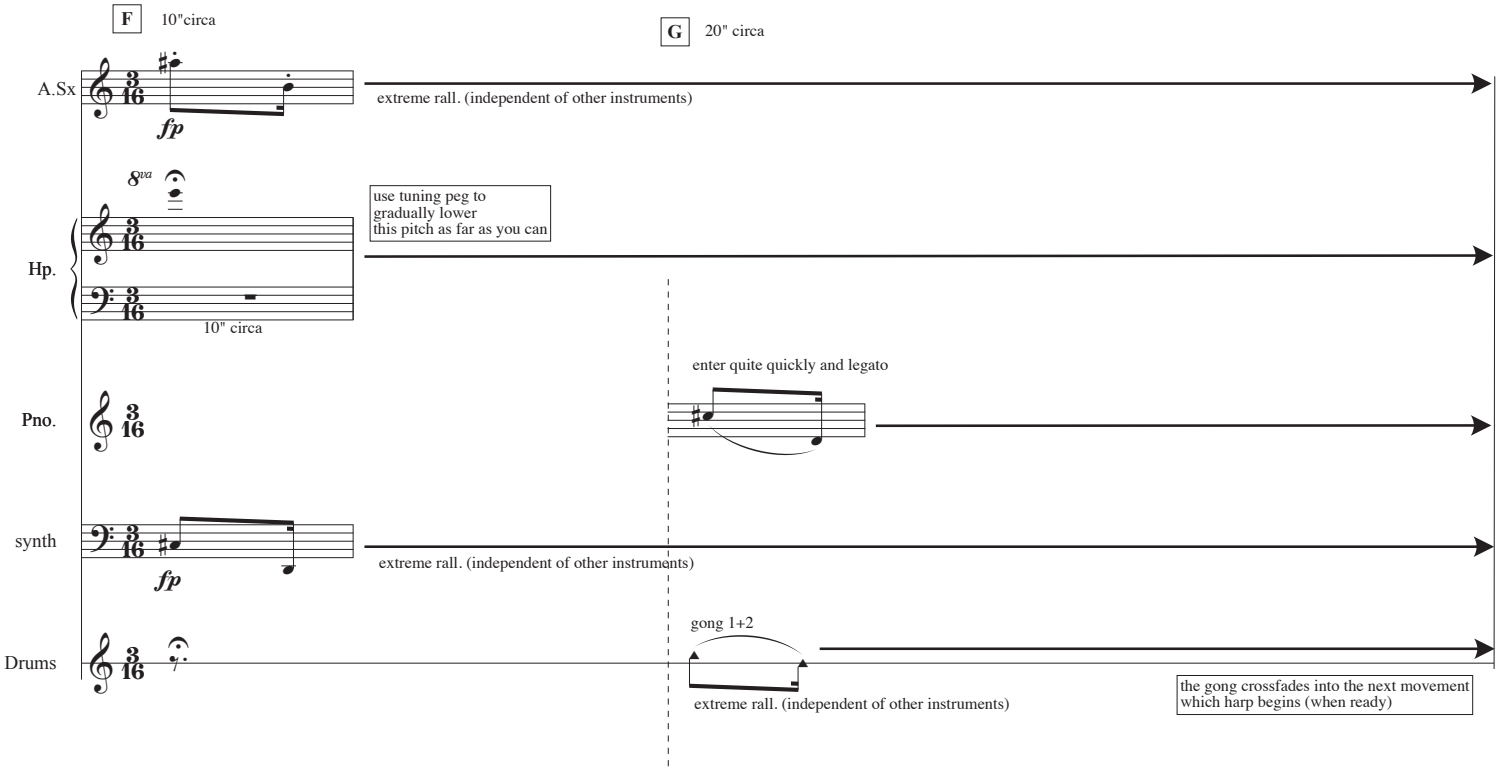

I
J
K
A. Sx.
Hp.
Pno.
synth
Drums
8va
move to a steady tempo
harp and piano eventually
play in rhythmic unison. adjust as
necessary
rall.
move towards stability
harmonise freely

Limber

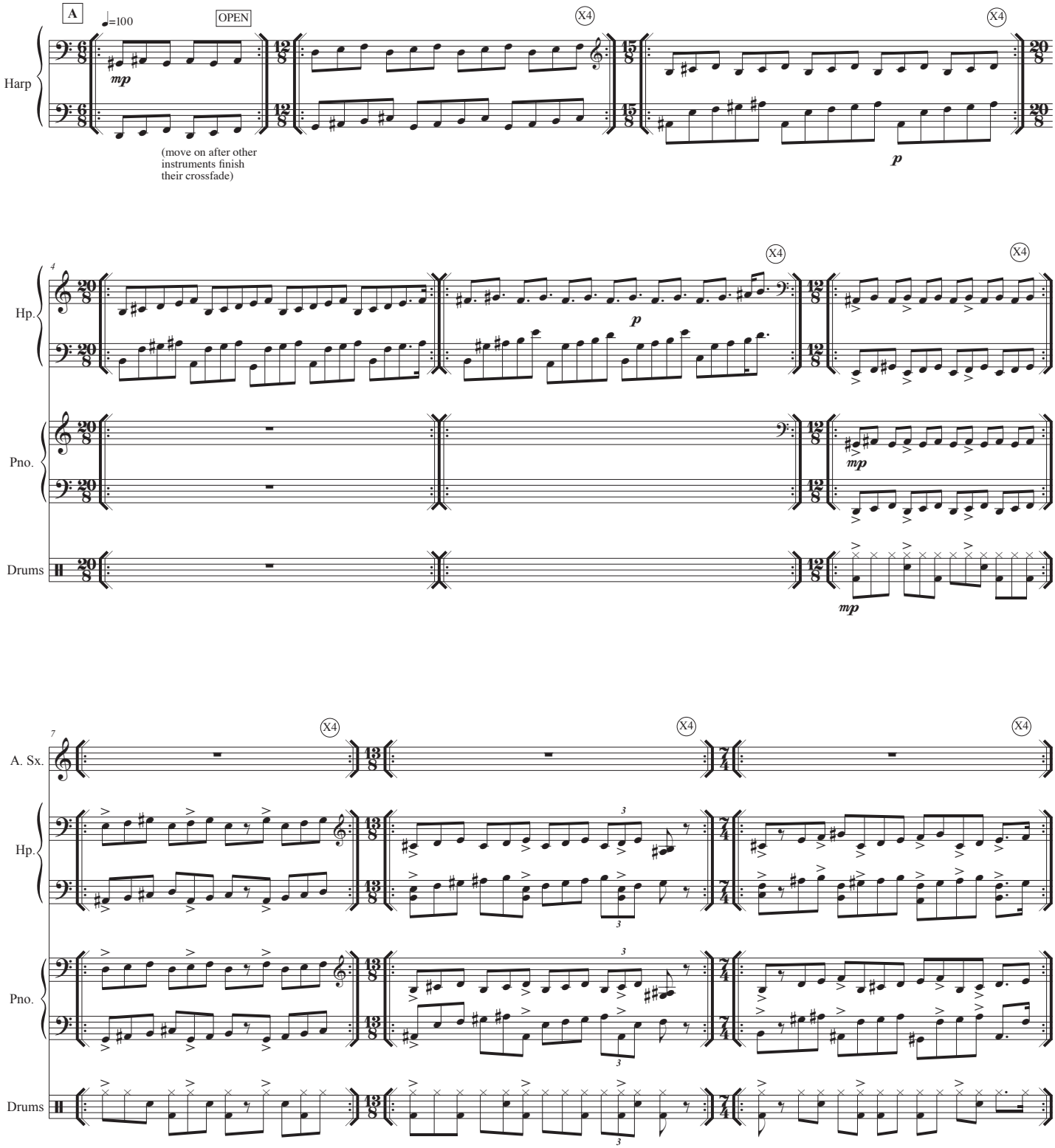

A
♩=90
sax break
Alto Sax
Harp
Piano
synth
Drums

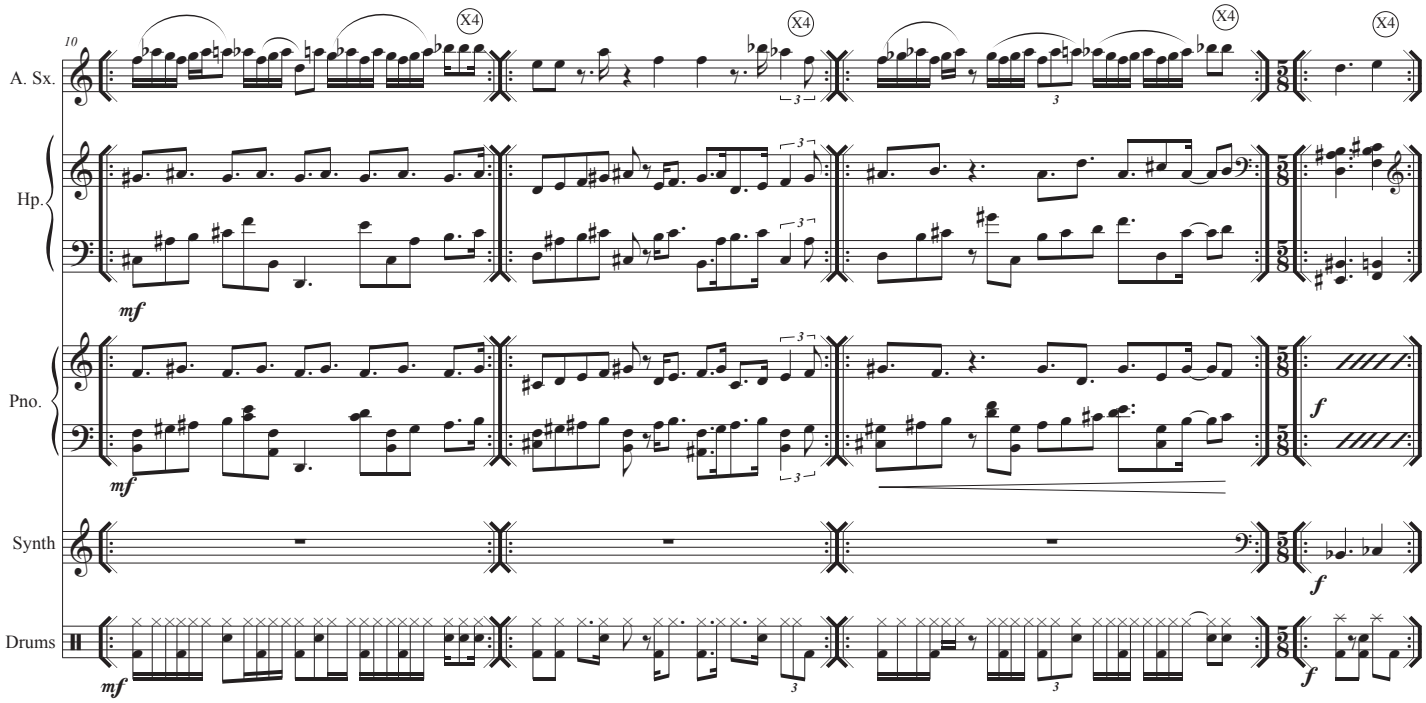

B
A.Sx
Hp.
Pno.
synth
Drums

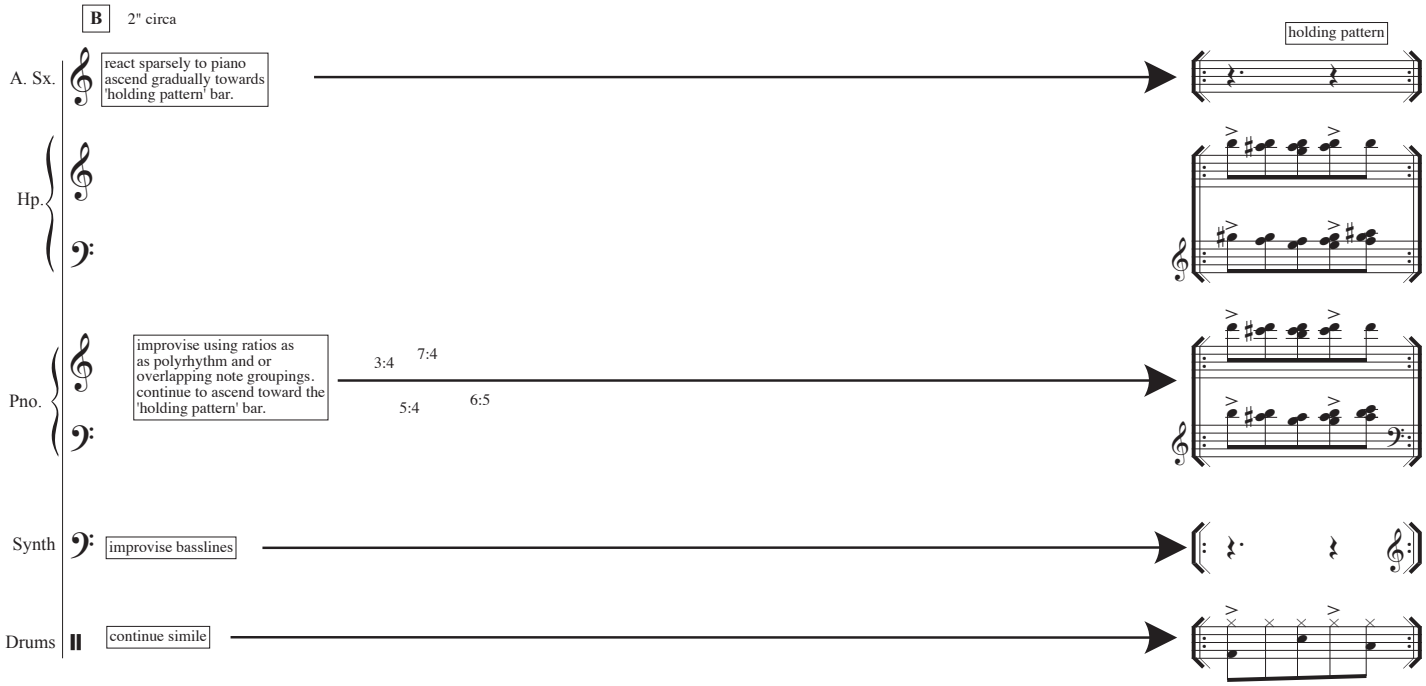

C
♩=60
4 times repeat
A.Sx
Hp.
synth
Drums
mf
D
8 times repeat
piano solo
elaborate the groove
f
E
sax and harp play to end solo
sax/synth cues
wind solo down
Pno.
take samples out

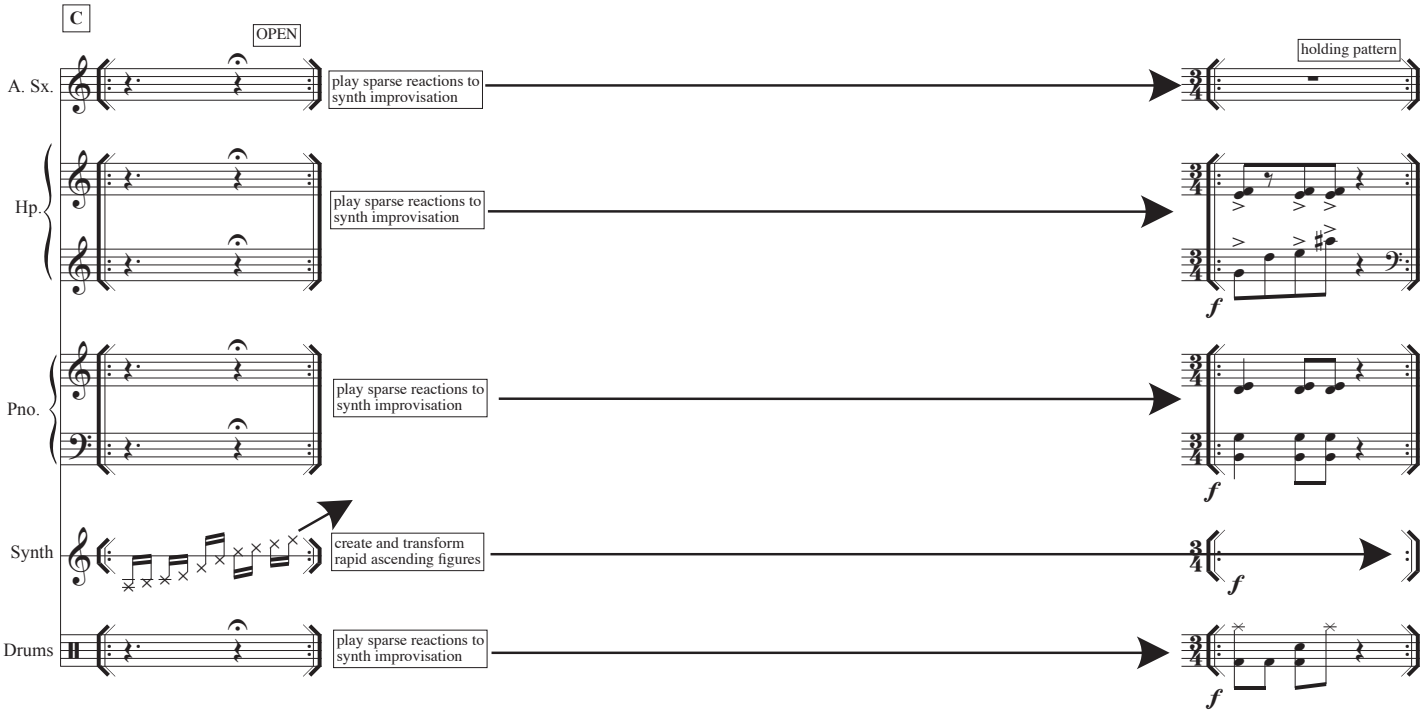

F
10"circa
G
20" circa
A.Sx
fp
extreme rall. (independent of other instruments)
8va
use tuning peg to
gradually lower
this pitch as far as you can
Hp.
10" circa
enter quite quickly and legato
Pno.
synth
fp
extreme rall. (independent of other instruments)
gong 1+2
Drums
extreme rall. (independent of other instruments)
the gong crossfades into the next movement
which harp begins (when ready)

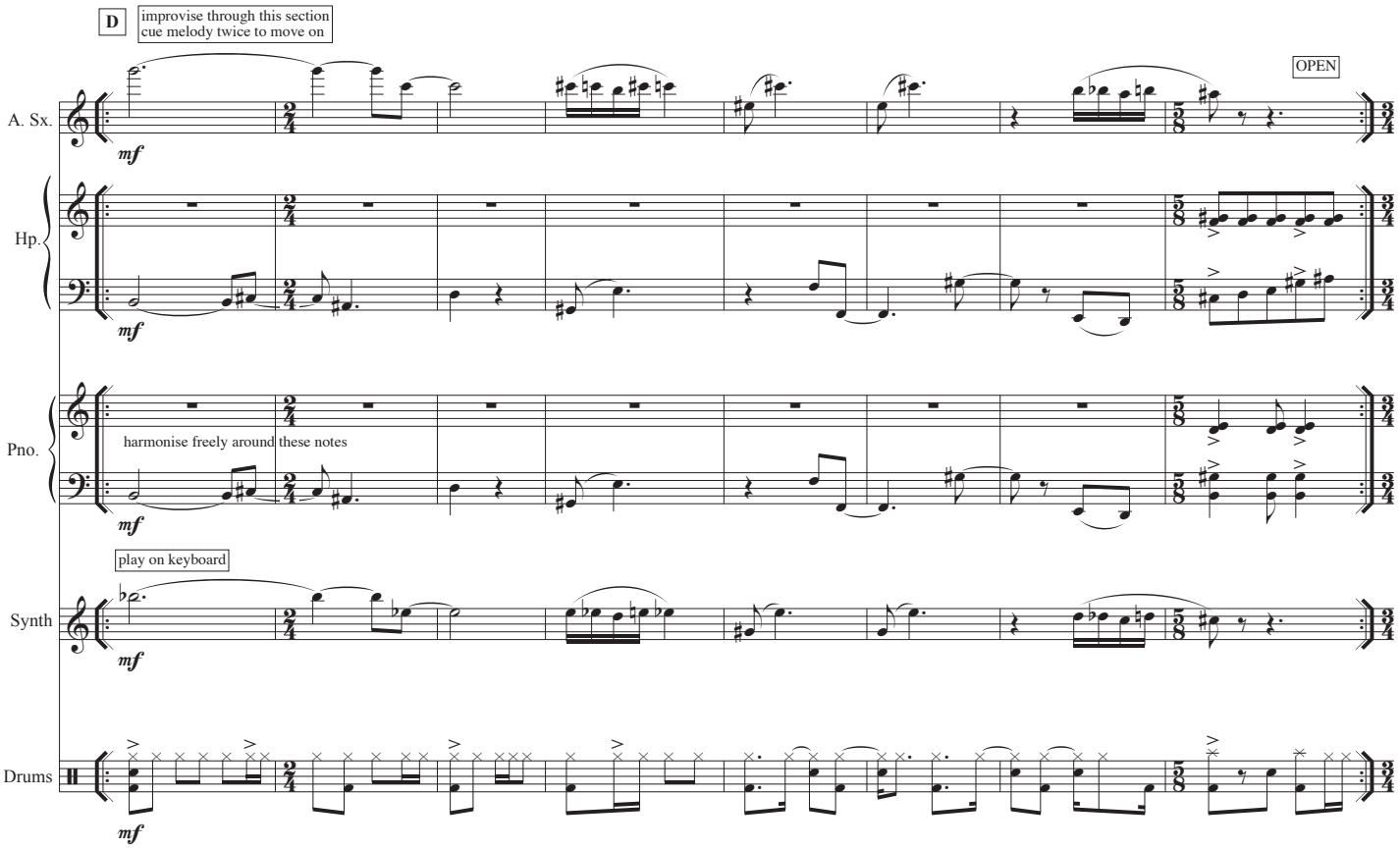
Loom

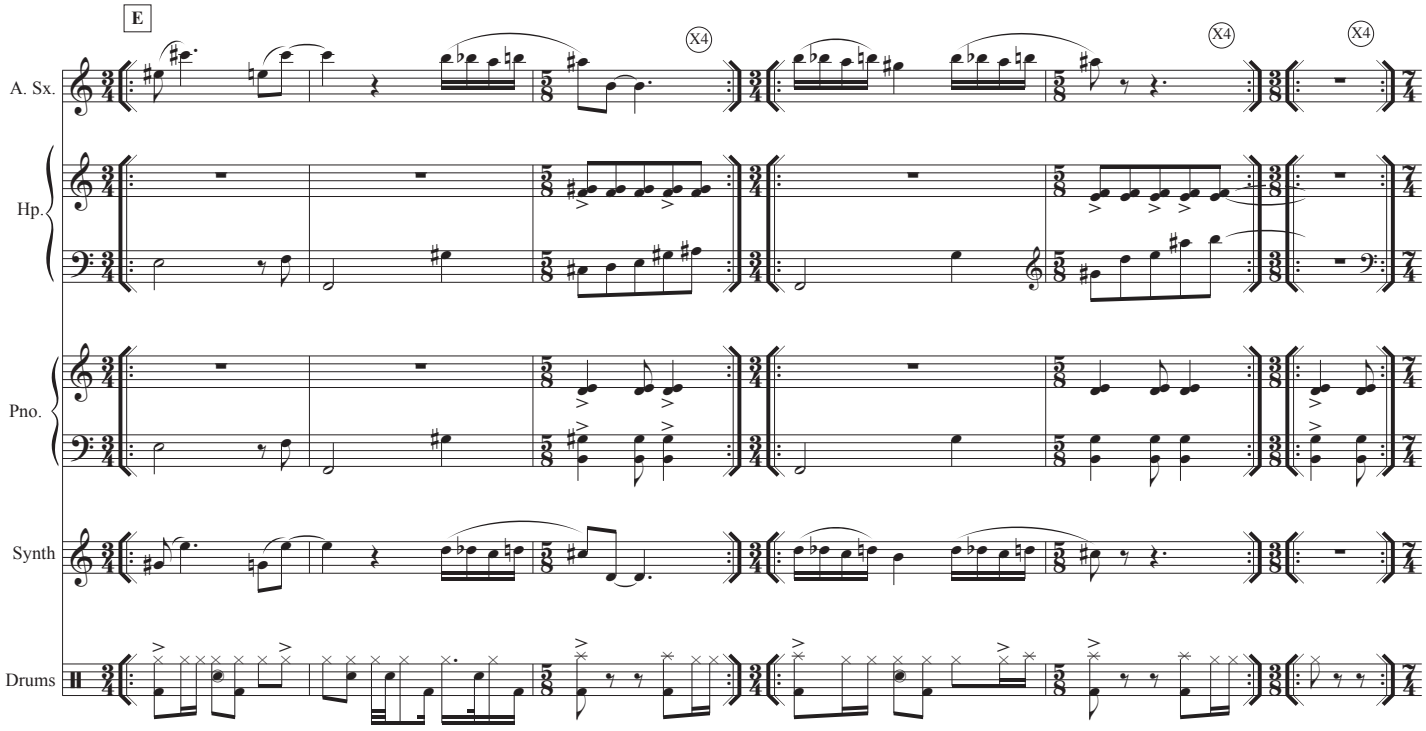

A
♩=100
OPEN
X4
mp
p
(move on after other instruments finish their crossfade)
Harp
Hp.
Pno.
Drums
A. Sx.
mp

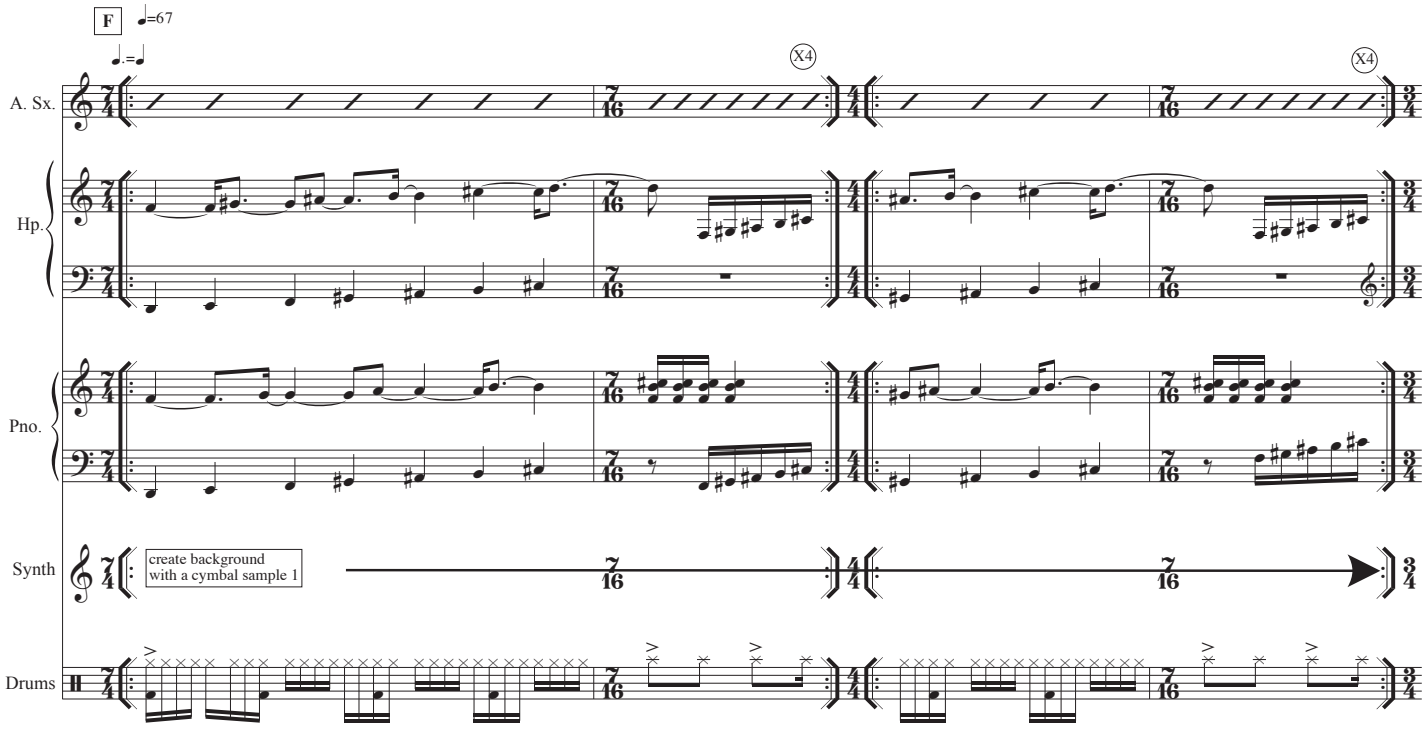

10
A. Sx.
Hp.
Pno.
Synth
Drums
X4
mf
f

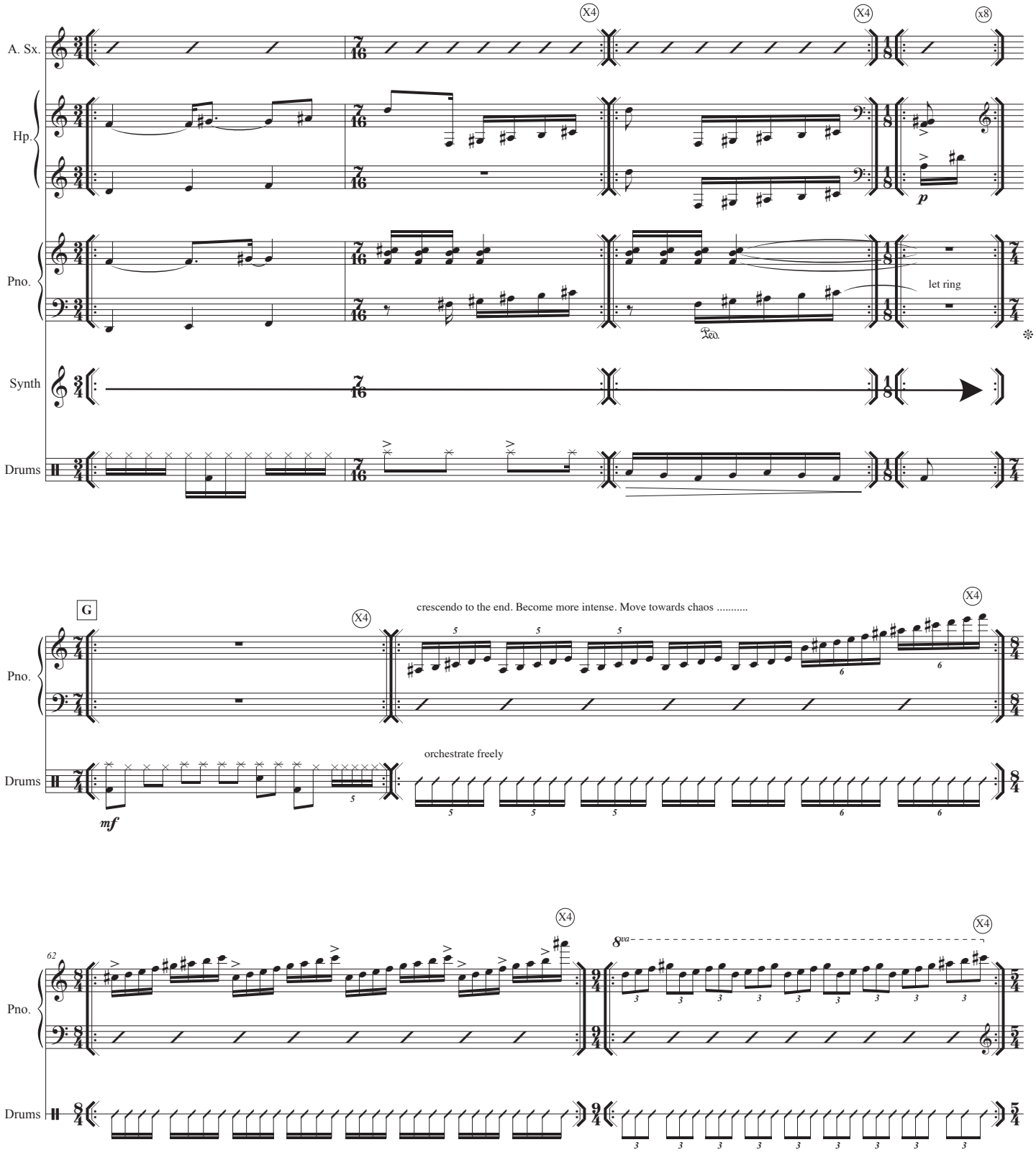

B
2" circa
A. Sx.
react sparsely to piano ascend gradually towards 'holding pattern' bar.
holding pattern
Hp.
Pno.
improvise using ratios as as polyrhythm and or overlapping note groupings. continue to ascend toward the 'holding pattern' bar.
3:4
7:4
5:4
6:5
Synth
improvise basslines
Drums
continue simile

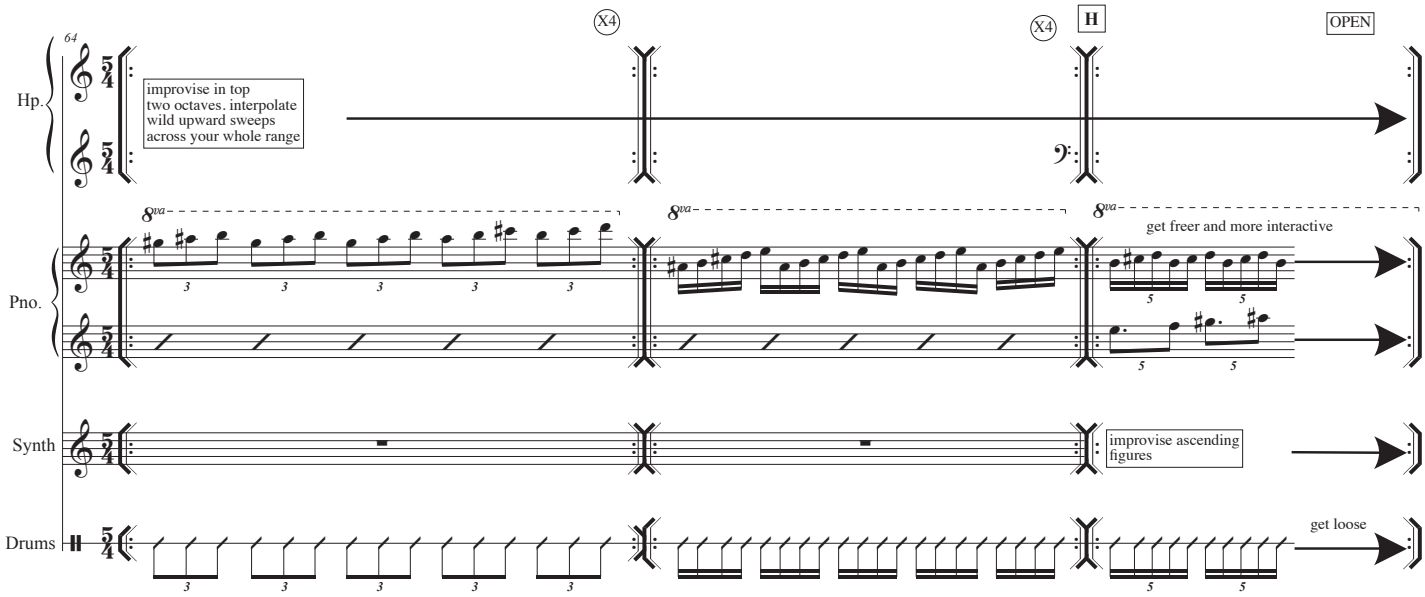

C
OPEN
holding pattern
A. Sx.
play sparse reactions to synth improvisation
Hp.
play sparse reactions to synth improvisation
Pno.
play sparse reactions to synth improvisation
Synth
create and transform rapid ascending figures
Drums
play sparse reactions to synth improvisation
f


D
improvise through this section cue melody twice to move on
OPEN
A. Sx.
mf
Hp.
Pno.
harmonise freely around these notes
play on keyboard
Synth
Drums


E
A. Sx.
Hp.
Pno.
Synth
Drums
X4
X4
X4


F
♩.=♩
♩=67
A. Sx.
Hp.
Pno.
Synth
Drums
X4
X4
create background
with a cymbal sample 1


A. Sx.
Hp.
Pno.
Synth
Drums
X4
X4
x8
p
let ring
G
X4
crescendo to the end. Become more intense. Move towards chaos .....
X4
mf
orchestrate freely
62
X4
8va
X4


64
Hp.
Pno.
Synth
Drums
improvise in top
two octaves. interpolate
wild upward sweeps
across your whole range
X4
X4
H
OPEN
8va
8va
8va
get freer and more interactive
improvise ascending
figures
get loose

attaca

Impact Zone

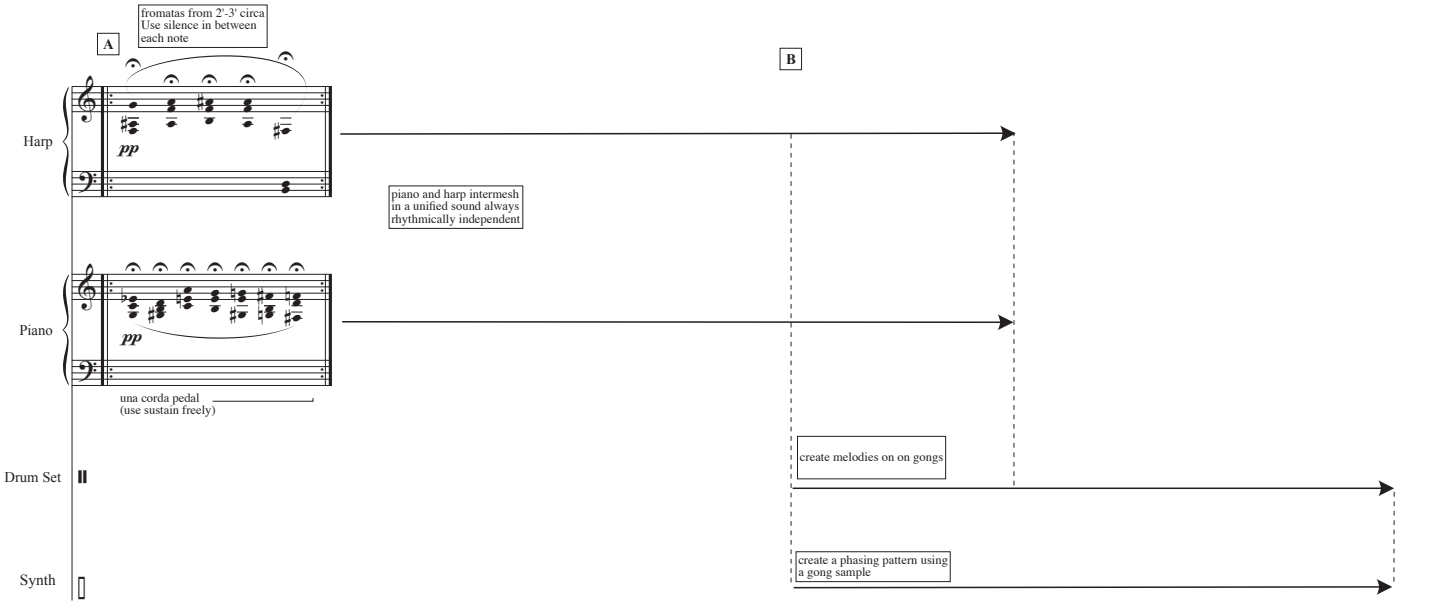
Improvise drawing on previous movements

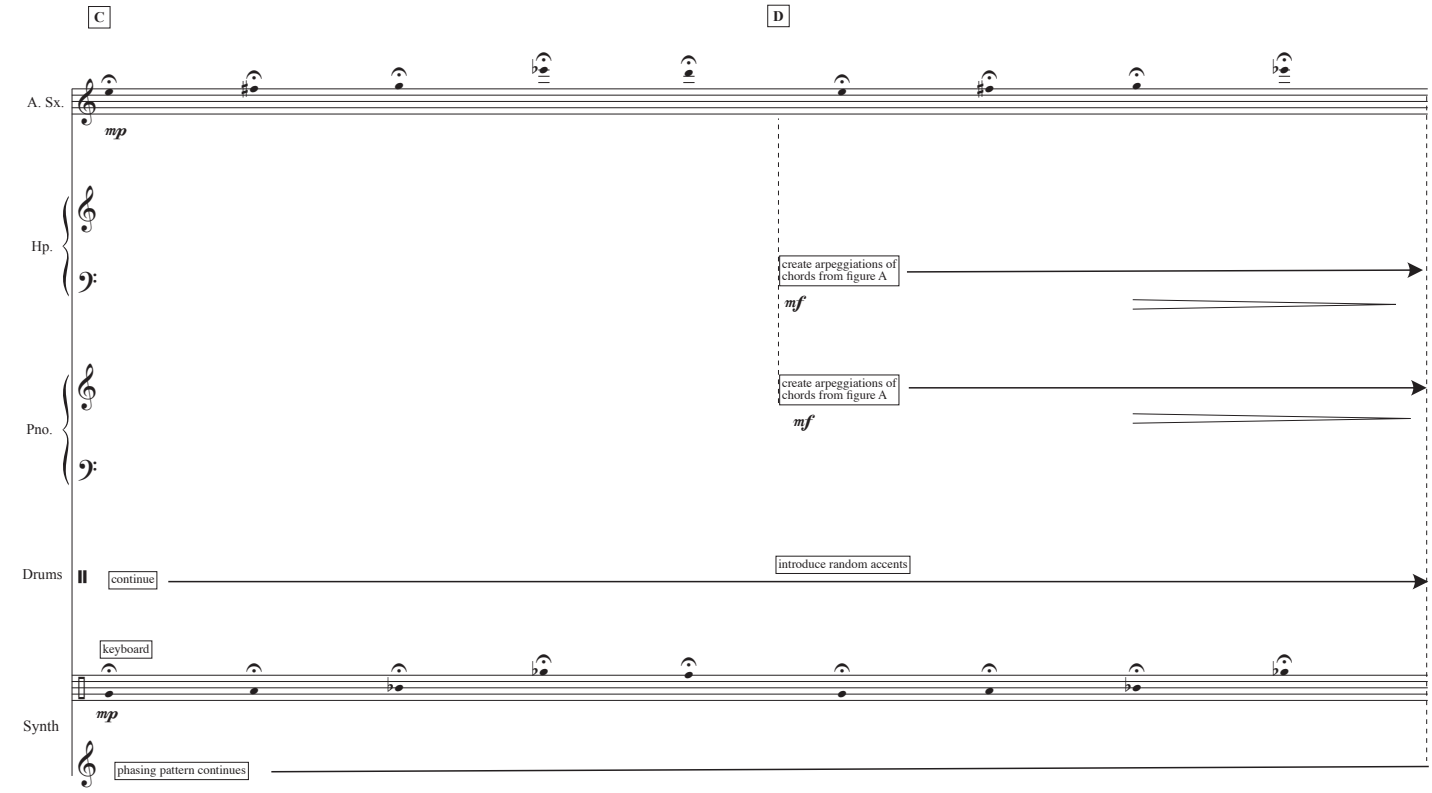
Move from flux towards calmness and predictability

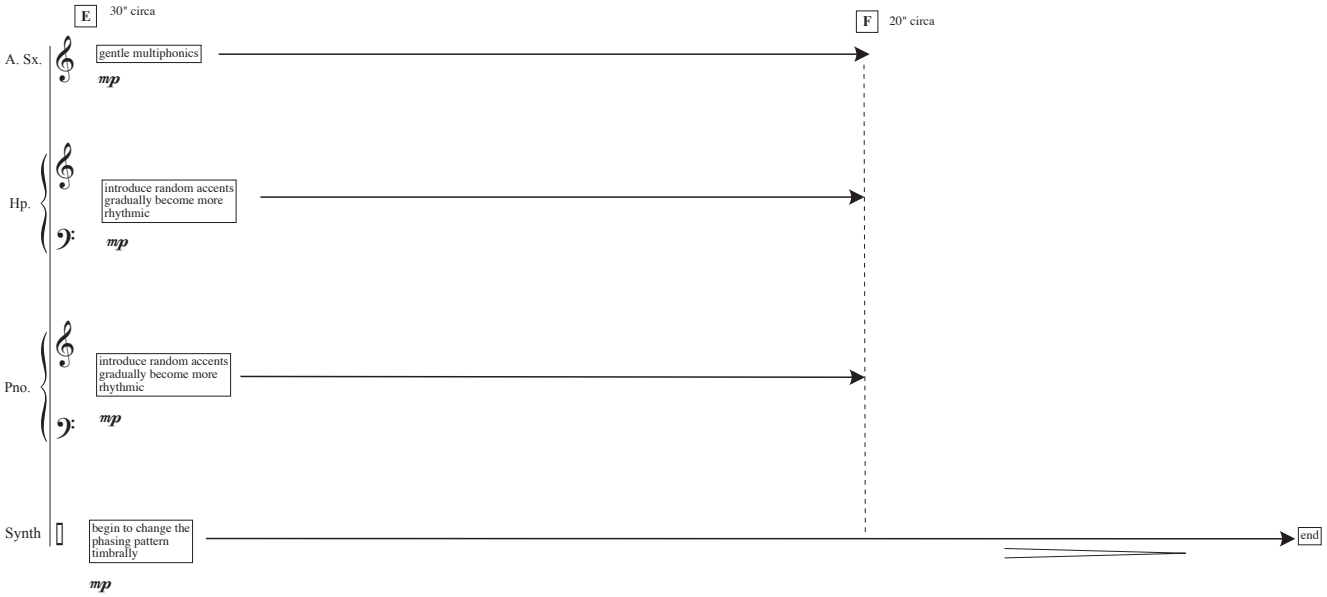
From no repetition of material to repetition

From no interaction to interaction

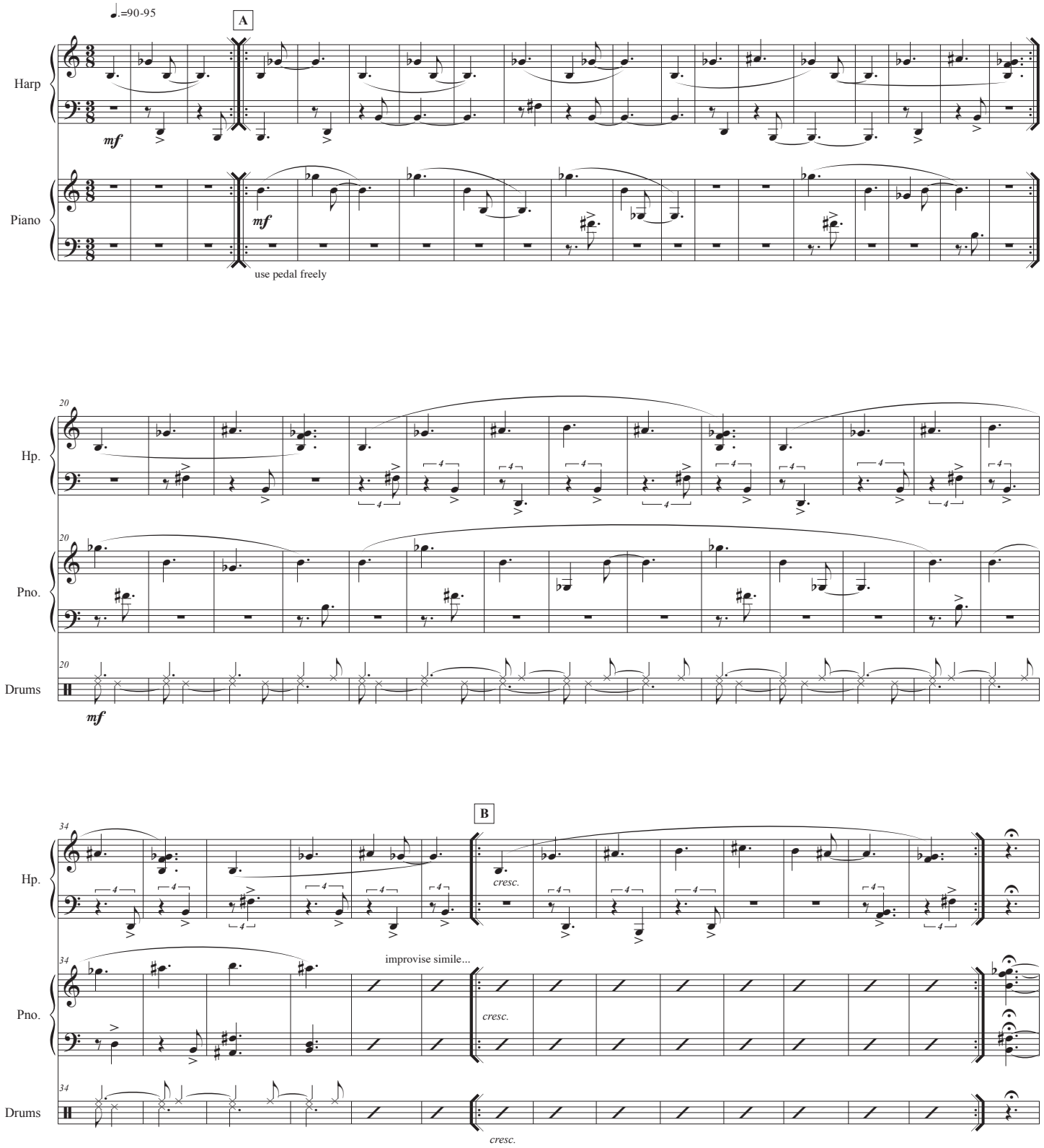
Surfacing

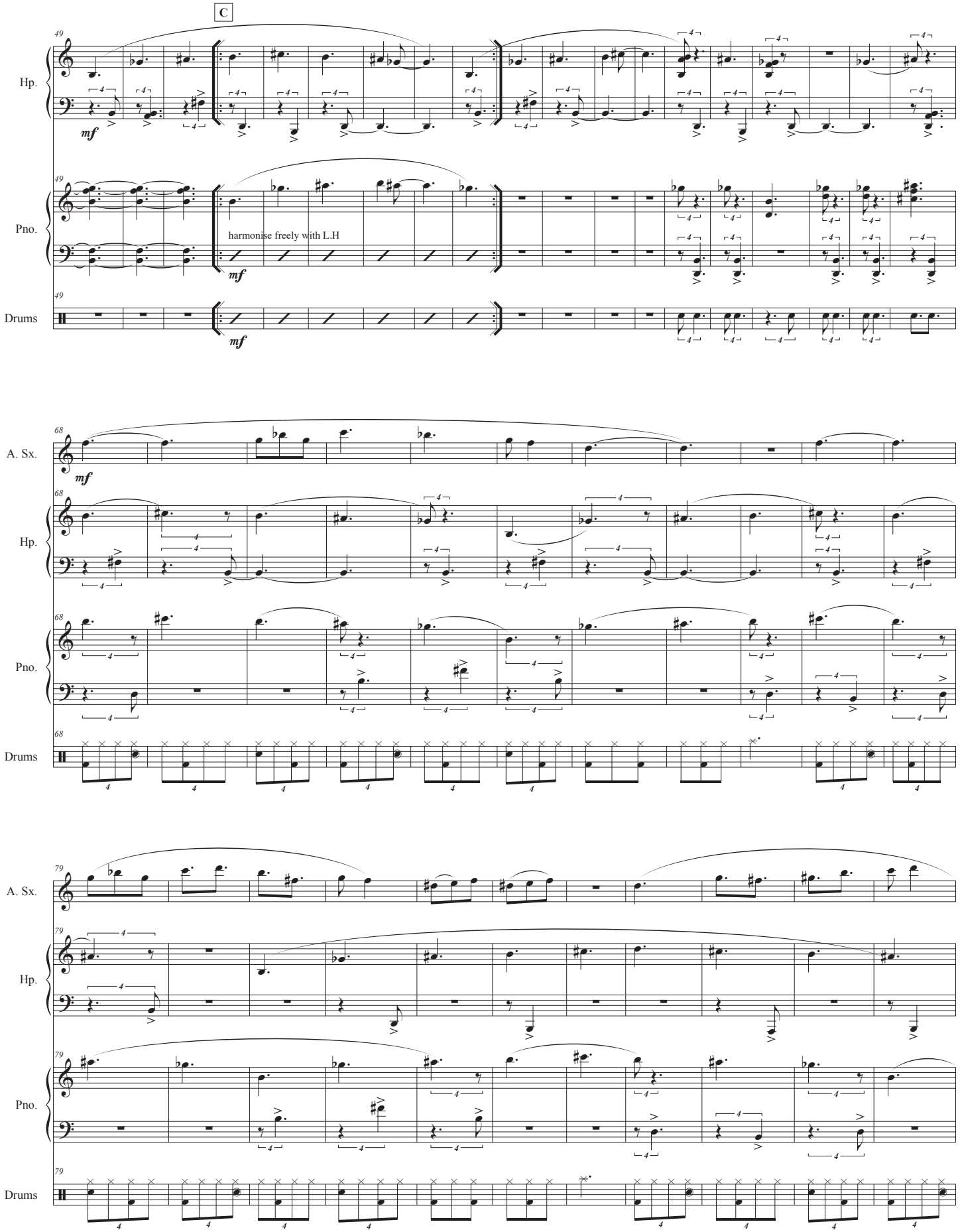

A
fromatas from 2'-3' circa
Use silence in between
each note
B
Harp
pp
piano and harp intermesh
in a unified sound always
rhythmically independent
Piano
pp
una corda pedal
(use sustain freely)
Drum Set
create melodies on on gongs
Synth
create a phasing pattern using
a gong sample

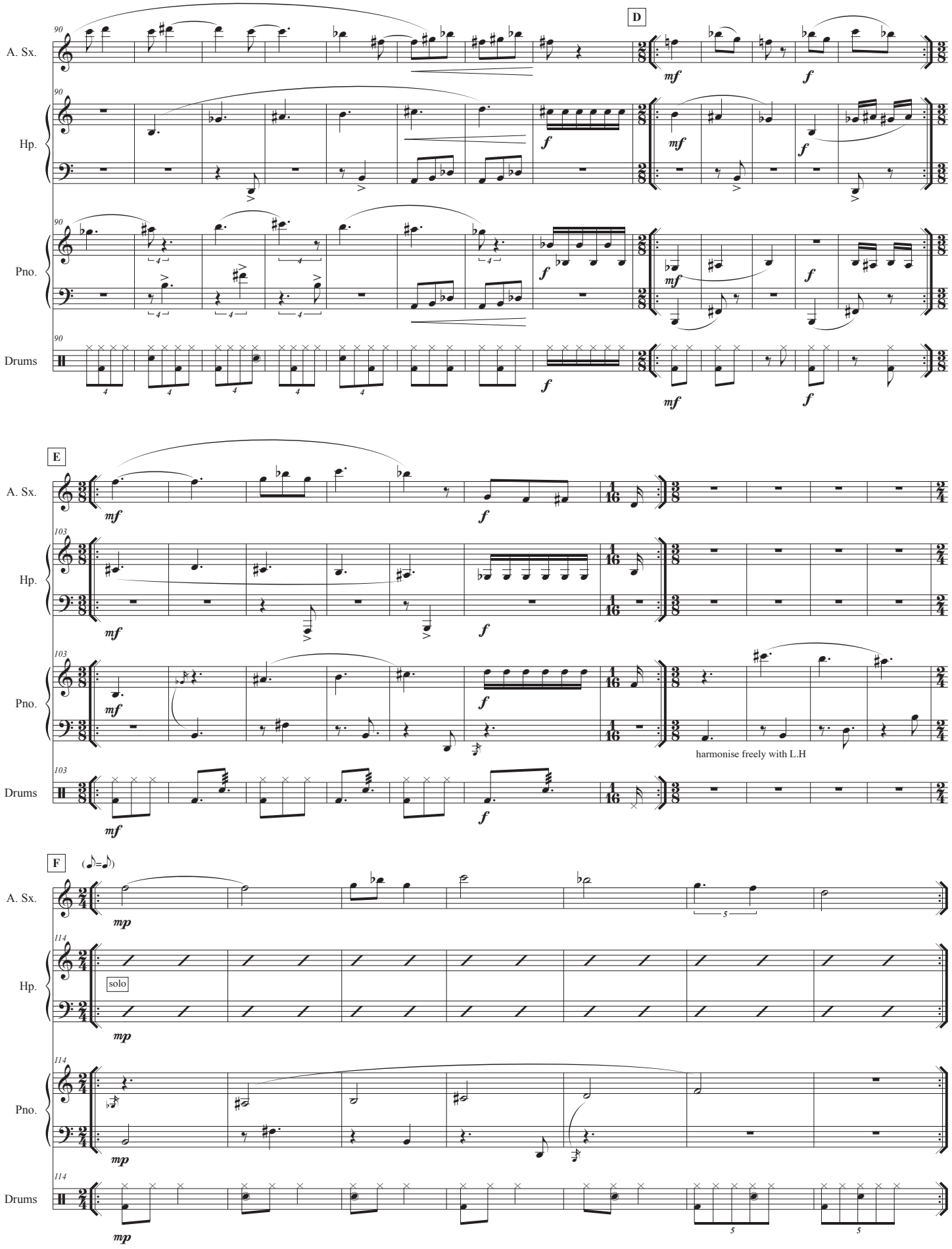

C
D
A. Sx.
mp
Hp.
create arpeggiations of
chords from figure A
mf
Pno.
create arpeggiations of
chords from figure A
mf
Drums
continue
introduce random accents
keyboard
mp
Synth
phasing pattern continues

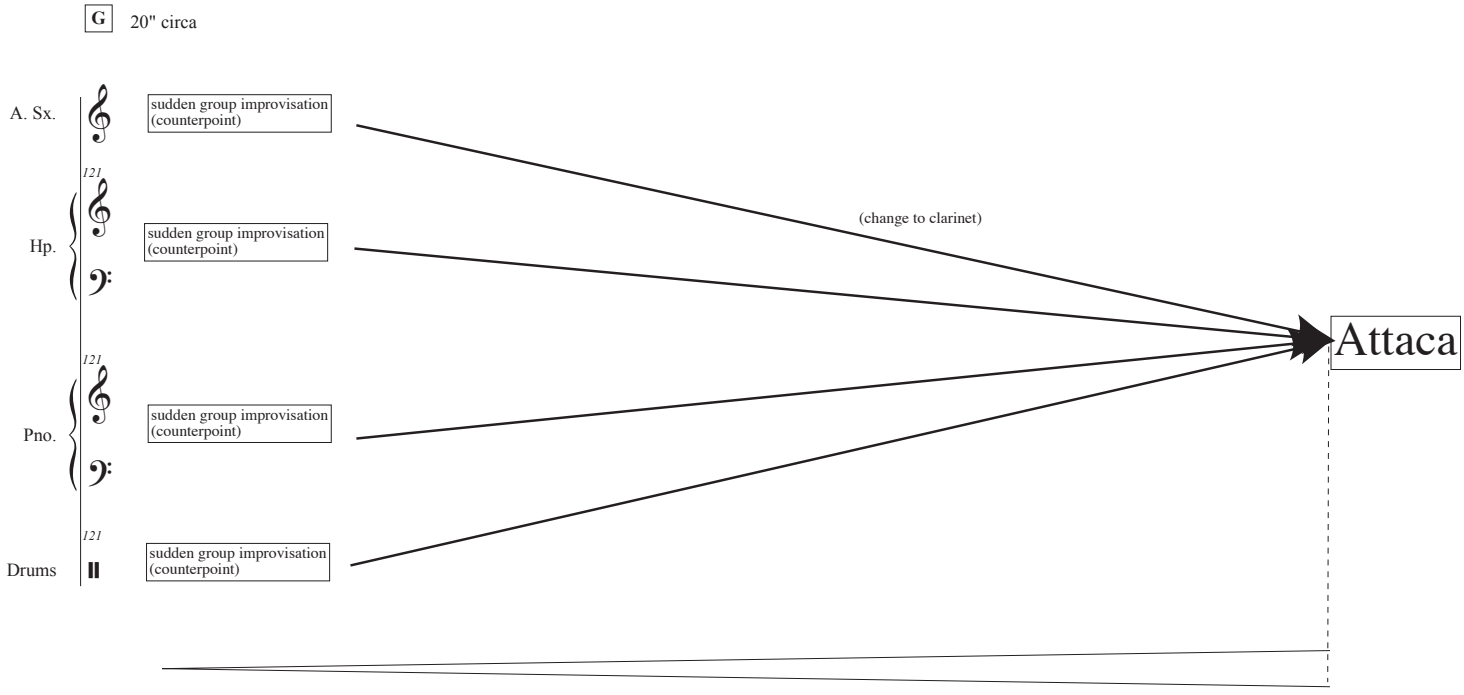

E
30" circa
F
20" circa
A. Sx.
gentle multiphonics
mp
Hp.
introduce random accents gradually become more rhythmic
mp
Pno.
introduce random accents gradually become more rhythmic
mp
Synth
begin to change the phasing pattern timbrally
mp
end

Barreled

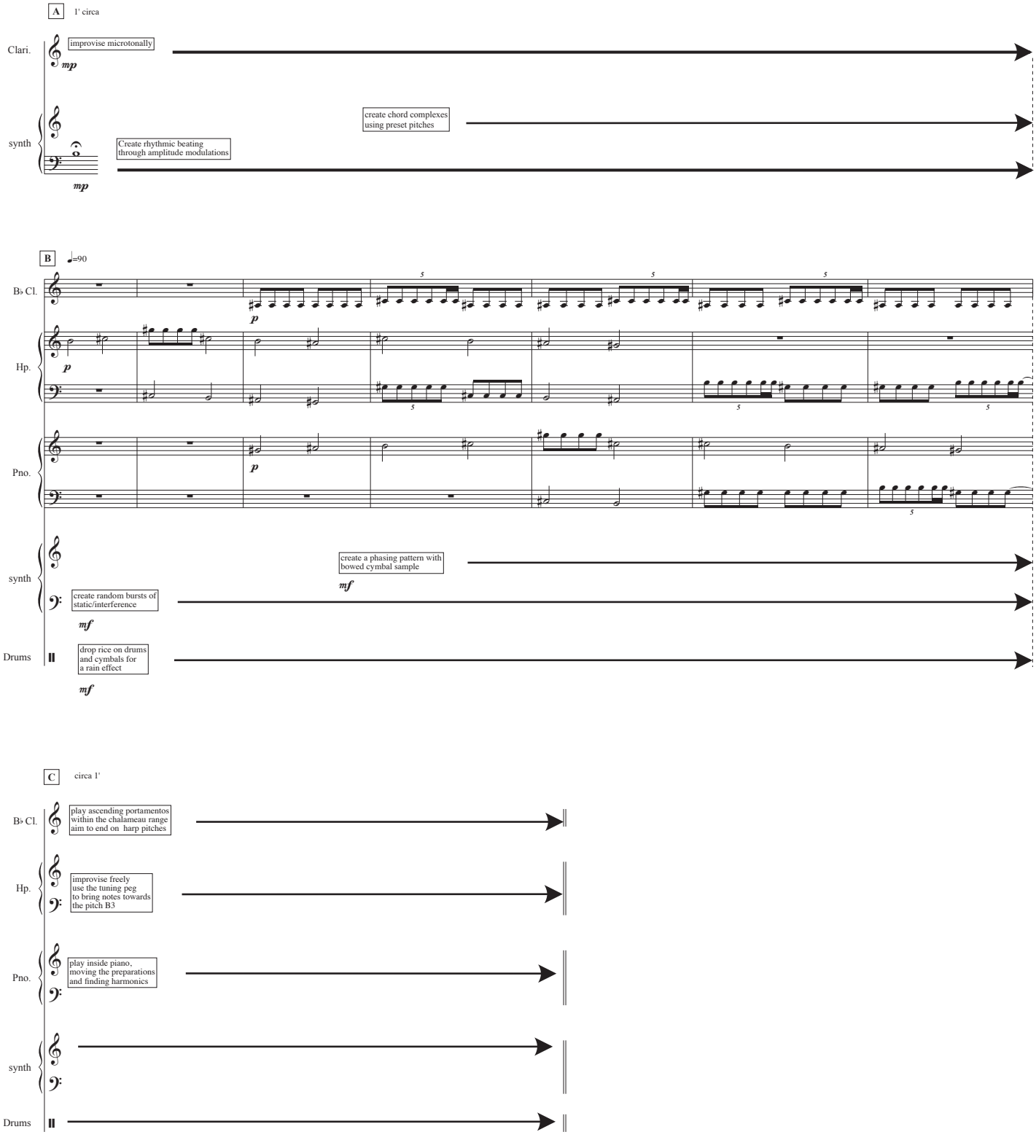

♩.=90-95
A
Harp
Piano
mf
use pedal freely
20
Hp.
Pno.
Drums
mf
34
B
cresc.
improvise simile...
cresc.
cresc.


C
49
Hp.
mf
Pno.
harmonise freely with L.H
Drums
68
A. Sx.
79


D
A. Sx.
Hp.
Pno.
Drums
90
mf
f
E
103
harmonise freely with L.H
F
(♪=♪)
mp
114
solo


G
20" circa
A. Sx.
121
Hp.
121
Pno.
121
Drums
sudden group improvisation (counterpoint)
sudden group improvisation (counterpoint)
sudden group improvisation (counterpoint)
sudden group improvisation (counterpoint)
(change to clarinet)
Attaca

One More


A
1' circa
Clari.
improvise microtonally
mp
synth
create chord complexes
using preset pitches
Create rhythmic beating
through amplitude modulations
mp
B
♩=90
B♭ Cl.
p
Hp.
p
Pno.
p
synth
create a phasing pattern with
bowed cymbal sample
mf
create random bursts of
static/interference
mf
Drums
drop rice on drums
and cymbals for
a rain effect
mf
C
circa 1'
B♭ Cl.
play ascending portamentos
within the chalameau range
aim to end on harp pitches
Hp.
improvise freely
use the tuning peg
to bring notes towards
the pitch B3
Pno.
play inside piano,
moving the preparations
and finding harmonics
synth
Drums