

you are required
to split your
attention between
multiple sources
of information

/ James
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/ 2017

INSTRUMENTS

2 violins
viola
cello

flute
oboe
clarinet
horn (straight mute)
trombone (plunger mute)
piano (with melodica)
percussion:

crotales; small tom tom (or hand drum); bass drum (or other large resonant drum); 5 chime bars (G3, C#4, G#4, B4, A#5); suspended cymbal; 2 plastic cups (rigid, with thin, sharp edge); 2 wood boards; 2 thin metal sheets; polystyrene block
supaball mallet; 2 elastic bands; takeaway cardboard coffee cup; bow; table tennis ball; notched wood rod

2 violins
viola
cello
double bass

auxiliary instruments

16 desk bells (different pitches)
16 harmonicas (any tunings)
16 aerosols (with fairly neutral contents!)
16 horns (any combination of bicycle horns, air horns etc)
16 whistles (any combination of referee, samba, etc.)
paper (enough for c.5 sheets per person)

audio playback

PA for playing the audio file.

(the audio track can be started by an ensemble member or another person as necessary)

The audio file and rehearsal tracks are available from the composer.

duration: 20'

**WIEN
MODERN**

Commissioned by Wien Modern. First performed by Arditti Quartet and Ensemble Modern
at Wiener Konzerthaus, Vienna, 23 November 2018.

you are required to split your attention between multiple sources of information (2018) presents the players with a stream of auditory cues to which they must respond with specified sounds. The cues regularly switch between different types and are directed at different sub-groups within the two ensembles, requiring the players to think and act very quickly. The piece explores *cognitive load* and the way we remember associations between cues and responses. Cognitive load is the amount of mental effort needed to remember things in different situations. An example of it in practice is the children's party game where a tray of objects is displayed before being hidden, and then participants are asked to remember as many of the items as possible. The difficulty of this task is affected by the type and arrangement of the objects. In the piece, moments of ordered information are disrupted by less predictable cue sequences and regular changes of cue type. The cues include samples of real world sounds which induce a range of different responses, as well as text-to-speech computer voices reading extracts from the Harvard Sentences (a set of phonetically balanced texts developed in the 1960s to test artificial voice modelling) and giving other verbal cues. The title is adapted from Mousavi, Low and Sweller's 'Reducing Cognitive Load by Mixing Auditory and Visual Presentation Modes' (1995) in which they investigate the *split-attention effect* and its impact on cognitive load. They argue that if subjects 'are required to split their attention among multiple sources of information that must be mentally integrated before they can be understood, learning may be inhibited', while suggesting that 'if effective working memory can be increased by having two sources of information presented via different modalities, the negative effects of split attention may be ameliorated.' In the piece, all the cues and responses are aural, requiring players to negotiate the stream of information in one mode. The increased cognitive load affects the speed of response by players and the variations in time required to complete sound-producing actions on the different instruments, producing an unpredictable trail of sounds after each cue.

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The text-to-speech recordings were made using the voices provided in Google Cloud Text-to-Speech. For full information, please see <https://cloud.google.com/text-to-speech>.



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Other samples and field recordings were made by the composer.

alarm [325367__moonlightshadow__fire-house-alarm].wav
bell [219047__jarredgibb__church-clock-strikes-1].wav
buzzer [164089__hypocore__buzzer2].wav
cannon [187767__qubodup__cannon-shot].wav
car [436589__julien-matthey__jm-transport-ext-horn-01a-car-short-mini-countryman].wav
dog [100032__nfrae__rose-bark].wav
foghorn [99630__tec-studios__foghorn].wav
gate [177194__barkenov__hard-grating-metal-gate].wav
pirate [401931__qalba4j__piratematt-1].wav
siren[121532__thaighaudio__01052010-tornado-siren-test].wav
steam [234782__wubitog__steam-hiss].wav
telephone [79440__xyzr-kx__telephone-ring].wav
till [253946__jmayoff__grocery-store-cash-register].wav
train [209970__jrosin__trainwhistle-with-natural-delay].wav
whistle [218318__splicesound__referee-whistle-blow-gymnasium].wav

SETUP

The string quartet and ensemble should be positioned as two distinct groups, but in close enough proximity for a single group to be apparent when required.

Each player needs a small table/surface to store the auxiliary instruments for easy access.

The audio should be played back through a PA, ideally with speakers close to the ensemble. The players need to be able to hear the audio throughout, so monitor speakers might be necessary in some spaces. There should be a good balance between the audio playback and the acoustic instruments so that the audience can hear both equally well.

PERFORMANCE INSTRUCTIONS

The piece comprises an audio track containing a sequence of audio cues that both the players and audience can hear, and a set of responses that the players make.

Players respond as quickly as they can to each cue and work independently of each other: the speed of response will vary based on factors including memory, difficulty of sound production, context, and cue density. It is not intended that all players should play perfectly in unison, rather that the variable speed of response will generate a series of delayed sounds.

The audio track for the performance can be used in rehearsals, but it is important that players do not learn it too well, such that they anticipate the cues.

The cues found in the audio track are as follows:

Noun phrases/sentences

There are 12 sentences (selected from the Harvard Sentences), each containing two noun-phrases; there are 24 noun-phrase cues in total.

Each noun phrase is a cue for a response by the players.

As soon as a player hears one of the noun phrase cues, they make the corresponding sound as soon as possible afterwards.

Sounds are either short (solid noteheads) or sustained briefly for up to c.2 seconds (empty noteheads), although the stream of cues may prevent this.

The noun phrases are read by six artificial voices and are as follows (cue words in **bold**), although they are normally presented as fragments or different permutations:

Steam hissed from **the broken valve**.
It was **a bad error** on the part of **the new judge**.

The child almost hurt **the new dog**.
A thin book fits in **the side pocket**.

The pirates seized **the crew of the lost ship**.
Tear **a thin sheet** from **the yellow pad**.

A man in a blue sweater sat at **the desk**.
Torn scraps littered **the stone floor**.

The doctor cured him with **these pills**.
Either **mud** or **dust** are found at all times.

Fine soap saves **tender skin**.
The horse balked and threw **the tall rider**.

Number cues (string quartet only)

The quartet have a set of 12 number cues spoken by an artificial voice, signalled by the numbers 1-12.

These cues indicate the looping material with the same number should be played.

Each number cue is preceded by a name (or names) and followed by a beep.

For example: 'Lucas 5 [beep]' would result in Lucas playing material 5 as soon as the beep is heard.

Players should continue to play the cued material until they are either given a cue that overrides it (e.g. 'Lucas 1 [beep]') or they are given an 'off' cue (e.g. 'Lucas off [beep]' or 'Everybody off [beep]').

While playing this material, players ignore other cues directed at the ensemble, until they are integrated back into the larger group with an 'off' command.

Each system contains two material types. The character and approximate tempo is indicated at the start of the system.

Dynamics and other playing techniques hold for the whole system, unless otherwise indicated.

Players can start a system at any point and stop playing immediately when given a new cue. There is a repeat at the end of the system that enables return to beginning of the system as necessary. Sections between repeat marks may be optionally repeated any number of times. Where repeats overlap, any of the possible units may be repeated (in the example below A-C, B-D or B-C).

• = 200-240

[f.n. pizz] [col legno battuto] [f.n. pizz]

A B C D

The image shows a musical staff with a treble clef and a common time signature. The staff contains several measures of music, each starting with a repeat sign (two dots). Above the staff, there are three performance instructions: "[f.n. pizz]" above the first measure, "[col legno battuto]" above the second measure, and "[f.n. pizz]" above the third measure. Below the staff, there are four red arrows pointing upwards, labeled A, B, C, and D. Arrows A, B, and C are positioned under the first, second, and third measures respectively. Arrow D is positioned under the fourth measure. The first measure is marked with a piano dynamic "p".

Spelling alphabet cues

There are eight spelling alphabet cues spoken by an artificial voice: Alpha, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel.

Each spelling alphabet cue indicates a sustained drone response, either with an audio sample of an electrical drone, or alone. The drone responses are approximate transcriptions of the electrical drones, but any tuning differences and irregularities should not be adjusted to match the recordings.

These cues may be directed at individual players (e.g. 'Jagdish Foxtrot' or 'Irvine and Ashot Hotel'), or at everybody (e.g. 'Everybody Bravo'). The response sounds should be sustained until a new cue instructs players to do something different (e.g. 'Ashot Delta' or 'Jagdish Off').

Sound sample cues

There are 12 sound sample cues spoken by an artificial voice: alarm, bell, buzzer, cannon, car, foghorn, gate, siren, telephone, till, train, whistle.

Each sample cue is a recording of the named sound source, and players respond with a sustained sound (except for 'till', which is short). The sounds are broadly imitative but should not be rhythmicised (i.e. for 'alarm' and 'till', do not imitate the rhythm in the sample). Sounds should sustain briefly so that they blend with the sample.

Pulse cues

Pulse cues comprise a number spoken by an artificial voice, four-beat metronome count in, and then a drum beat at the same pulse lasting the named number of beats (e.g. 'Seventeen – [beep, beep, beep, beep] [drums for 17 beats]').

All players respond to this whatever they were doing. It cancels all other actions.

Players should select two sounds each and alternate between them for the duration of the pulse on the strong and weak beats.

Sounds should be consistent during each pulse cue but may change for subsequent cues.

Object cues

There are six object cues: aerosol, bell, harmonica, horn, paper, whistle.

These cues are spoken by an artificial voice.

Players make a short sound using the indicated object as soon as they hear the cue.

Each sound should be a simple gesture (e.g. a single bell strike, a single blown harmonica chord etc.)

Note cues (ensemble only)

The note cues comprise the spoken word 'notes' followed by a sequence of names, all spoken by an artificial voice.

The named player plays their single pitch as soon as they can after hearing their name, producing a hocket.

Sing cue

The sing cue comprises the word 'sing' followed by a piano triad.

All players choose a pitch from the chord and sing it with enthusiasm for c.1-2".

The pitches can be sung in any comfortable register.

Hold

If 'hold' is included in a spoken cue, the resulting response should be held. For example: 'Notes Hold Aglaya' would mean that Aglaya plays her note and sustains it; 'Hold / tender skin' would mean that the response to 'tender skin' is sustained rather than played as a shorter response.

or

At certain points 'or' is used in a cue to specify options for cues and responses. For example 'Ashot and Ralf Bravo or Golf' would mean that Ashot and Ralf each choose whether to respond to the 'Bravo' or 'Golf' drone cues.

Other sounds

There are a few other inserted sounds that do not have a cueing function. They are just there for decoration and to confuse matters. The lengthy on-hold music at the end offers an opportunity to sit and relax for a short time.

GENERAL INSTRUCTIONS

ALL

o-pppp(----)

The sound should be on the edge of silence, and stop and start irregularly, or have an inconsistent quality due to any associated playing techniques.

ppp(<>)

The sound should centre on the indicated dynamic, but allow any micro-variations to emerge naturally (do not try to play them though)

[vib]

An exaggerated, fast, vibrato.

[distort]

Extreme energy channelled into the sound (heavy bow pressure, overblowing etc) to distort the sound.

WIND AND BRASS

[throat]

A very rapid series of single articulations of the air stream in the throat (not a growl or flutter-tongue). The pace should be as fast as possible, to the point where it is hard to control the regularity of the attack.

[air/noise]

Breath sound with little pitch component. Noise tones should be emphasised.

[growl]

Vocal input to the played note (hum, sing etc) to produce a distortion of the sound.

+

Closed plunger mute

o

Open plunger mute

♯

Blocked – as closed, but with extra pressure to seal the tube as much as possible.

PERCUSSION

U

Circle the cup on the surface using the base of cup on surface

∩

Circle the cup on the surface using rim of cup on surface (upside down)

[elastic band]

Tension the band between thumb and index finger, pull back band and release onto drumhead to produce a short, sharp attack. Attaching the elastic bands in advance may ease speed of articulation.

[notched rod]

Bow object with notched rod to produce a rasping sound.

PIANO



Tremolo with all pitches sounding together as a fast, repeated chord (each hand independent). If the bracket extends to both hands, the whole chord should be played in this manner (hands synchronised).

For tremolos without the bracket, the chord may be broken (bisbigliando).

[damp: LH]

[heavy damp: RH]

Damp the strings with the indicated hand. The pitches should still be clearly audible, but muffled.

For 'heavy damp', the sound should be more muffled, with less audible pitch.

[f.t.rub]

Rub the across the strings lightly with the fingers to produce a slightly damped tremolo.

BOWED STRINGS

[minimal movement]

Minimal bow movement necessary to produce sound, which should be unstable as a result.

[damp]

Damp all strings lightly with the fingers of the left hand. A coloured pitch/noise sound will result.

[f.n.pizz]

Pizzicato with fingernail

STEAM

TORN SCRAPS

THE CREW OF THE LOST SHIP

THE HORSE

THE STONE FLOOR

A BAD ERROR

[air/noise]

[air/noise]

[air/noise]

[air/noise]

[distort]

[distort]

FLUTE

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

OBOE

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

CLARINET

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

HORN

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

TROMBONE

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

PIANO

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

PERCUSSION

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

VIOLIN 1

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

VIOLIN 2

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

VIOLA

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

CELLO

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

DOUBLE BASS

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

VIOLIN 1 [SOLO]

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

VIOLIN 2 [SOLO]

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

VIOLA [SOLO]

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

CELLO [SOLO]

ppp (<>)

ppp (<>)

ppp (<>)

ppp (<>)

sffz

sffz

THE NEW JUDGE

THE DOCTOR

THE TALL RIDER

THE PIRATES

TENDER SKIN

THE SIDE POCKET

Musical score for various instruments across six pieces. The score is organized into columns for each piece and rows for each instrument. Dynamics and performance instructions are provided for each part.

INSTRUMENTS AND PARTS:

- FLUTE
- OBOE
- CLARINET
- HORN
- TROMBONE
- PIANO (MELODICA)
- PERCUSSION (CROTALE [bow], WOOD [notched rod])
- VIOLIN 1
- VIOLIN 2
- VIOLA
- CELLO
- DOUBLE BASS
- VIOLIN 1 [SOLO]
- VIOLIN 2 [SOLO]
- VIOLA [SOLO]
- CELLO [SOLO]

DYNAMICS AND INSTRUCTIONS:

- p* (piano)
- pp* (pianissimo)
- ppp* (pianississimo)
- sffz* (sforzando)
- [tongue]
- [damp: LH]
- [damp: RH]
- [col legno battuto]
- [wood]
- [notched rod]
- [hard mallet]
- [bow]
- [MELODICA]
- [CROTALE]
- [CHIME BAR]

BELL

GATE

TELEPHONE

FOGHORN

TILL

BUZZER

FLUTE

FLUTE staff with mp dynamic and crescendo hairpin.

[breathy]

FLUTE staff with [breathy] marking, sfz dynamic, and hairpin.

FLUTE staff with f dynamic and hairpin.

FLUTE staff with f dynamic.

FLUTE staff with f dynamic.

FLUTE staff with mp dynamic.

OBOE

OBOE staff with mp dynamic and crescendo hairpin.

[breathy]

OBOE staff with [breathy] marking, sfz dynamic, and hairpin.

OBOE staff with f dynamic and hairpin.

OBOE staff with f dynamic.

OBOE staff with f dynamic.

OBOE staff with mp dynamic.

CLARINET

CLARINET staff with mp dynamic and crescendo hairpin.

[breathy]

CLARINET staff with [breathy] marking, sfz dynamic, and hairpin.

CLARINET staff with f dynamic and hairpin.

CLARINET staff with f dynamic.

CLARINET staff with f dynamic.

CLARINET staff with f dynamic.

HORN

HORN staff with f dynamic and hairpin.

[tongue]

HORN staff with [tongue] marking, mf dynamic, and hairpin.

HORN staff with f dynamic.

HORN staff with mf dynamic.

HORN staff with f dynamic.

TROMBONE

TROMBONE staff with f dynamic and hairpin.

[tongue]

TROMBONE staff with [tongue] marking, mf dynamic, and hairpin.

TROMBONE staff with f dynamic.

TROMBONE staff with mf dynamic.

TROMBONE staff with f dynamic.

PIANO

PIANO staff with f dynamic, hairpin, and Ped. marking.

PIANO staff with mp dynamic, hairpin, and Ped. marking.

PIANO staff with mp dynamic, hairpin, and Ped. marking.

PIANO staff with mf dynamic, hairpin, and Ped. marking.

PIANO staff with f dynamic.

PIANO staff with f dynamic.

PERCUSSION

CHIME BAR

[bow]

PERCUSSION staff with CHIME BAR [bow], f dynamic, and hairpin.

SUSPENDED CYMBAL

[bow]

PERCUSSION staff with SUSPENDED CYMBAL [bow], sfz dynamic, and hairpin.

CROTALE

[notched rod]

PERCUSSION staff with CROTALE [notched rod], f dynamic, and hairpin.

BASS DRUM

[supaball: drag]

PERCUSSION staff with BASS DRUM [supaball: drag], f dynamic.

CHIME BAR

PERCUSSION staff with CHIME BAR, f dynamic.

POLYSTYRENE

[bow]

PERCUSSION staff with POLYSTYRENE [bow], f dynamic.

VIOLIN 1

VIOLIN 1 staff with mp dynamic and crescendo hairpin.

[molto sul pont]

VIOLIN 1 staff with [molto sul pont] marking, sfz dynamic, and hairpin.

VIOLIN 1 staff with [ricochet] marking, f dynamic, and hairpin.

VIOLIN 1 staff with f dynamic.

VIOLIN 1 staff with [pizz] marking, f dynamic.

VIOLIN 1 staff with mp dynamic.

VIOLIN 2

VIOLIN 2 staff with mp dynamic and crescendo hairpin.

[molto sul pont]

VIOLIN 2 staff with [molto sul pont] marking, sfz dynamic, and hairpin.

VIOLIN 2 staff with [ricochet] marking, f dynamic, and hairpin.

VIOLIN 2 staff with f dynamic.

VIOLIN 2 staff with [pizz] marking, f dynamic.

VIOLIN 2 staff with mp dynamic.

VIOLA

VIOLA staff with mp dynamic and crescendo hairpin.

[molto sul pont]

VIOLA staff with [molto sul pont] marking, sfz dynamic, and hairpin.

VIOLA staff with [ricochet] marking, f dynamic, and hairpin.

VIOLA staff with f dynamic.

VIOLA staff with [pizz] marking, f dynamic.

VIOLA staff with [distort] marking, f dynamic.

CELLO

CELLO staff with ff dynamic and hairpin.

[molto sul pont]

CELLO staff with [molto sul pont] marking, sfz dynamic, and hairpin.

CELLO staff with [ricochet] marking, f dynamic, and hairpin.

CELLO staff with f dynamic.

CELLO staff with [pizz] marking, f dynamic.

CELLO staff with [distort] marking, f dynamic.

DOUBLE BASS

DOUBLE BASS staff with ff dynamic and hairpin.

[molto sul pont]

DOUBLE BASS staff with [molto sul pont] marking, sfz dynamic, and hairpin.

DOUBLE BASS staff with [ricochet] marking, f dynamic, and hairpin.

DOUBLE BASS staff with f dynamic.

DOUBLE BASS staff with [pizz] marking, f dynamic.

DOUBLE BASS staff with [distort] marking, f dynamic.

VIOLIN 1 [SOLO]

VIOLIN 1 [SOLO] staff with f dynamic and hairpin.

[molto sul pont]

VIOLIN 1 [SOLO] staff with [molto sul pont] marking, sfz dynamic, and hairpin.

VIOLIN 1 [SOLO] staff with [ricochet] marking, f dynamic, and hairpin.

VIOLIN 1 [SOLO] staff with f dynamic.

VIOLIN 1 [SOLO] staff with [pizz] marking, f dynamic.

VIOLIN 1 [SOLO] staff with mp dynamic.

VIOLIN 2 [SOLO]

VIOLIN 2 [SOLO] staff with f dynamic and hairpin.

[molto sul pont]

VIOLIN 2 [SOLO] staff with [molto sul pont] marking, sfz dynamic, and hairpin.

VIOLIN 2 [SOLO] staff with [ricochet] marking, f dynamic, and hairpin.

VIOLIN 2 [SOLO] staff with f dynamic.

VIOLIN 2 [SOLO] staff with [pizz] marking, f dynamic.

VIOLIN 2 [SOLO] staff with mp dynamic.

VIOLA [SOLO]

VIOLA [SOLO] staff with f dynamic and hairpin.

[molto sul pont]

VIOLA [SOLO] staff with [molto sul pont] marking, sfz dynamic, and hairpin.

VIOLA [SOLO] staff with [ricochet] marking, f dynamic, and hairpin.

VIOLA [SOLO] staff with f dynamic.

VIOLA [SOLO] staff with [pizz] marking, f dynamic.

VIOLA [SOLO] staff with [distort] marking, f dynamic.

CELLO [SOLO]

CELLO [SOLO] staff with f dynamic and hairpin.

[molto sul pont]

CELLO [SOLO] staff with [molto sul pont] marking, sfz dynamic, and hairpin.

CELLO [SOLO] staff with [ricochet] marking, f dynamic, and hairpin.

CELLO [SOLO] staff with f dynamic.

CELLO [SOLO] staff with [pizz] marking, f dynamic.

CELLO [SOLO] staff with [distort] marking, f dynamic.

ALARM

WHISTLE

CAR

TRAIN

SIREN

CANNON

FLUTE

[air/noise]

OBOE

[air/noise]

CLARINET

HORN

TROMBONE

PIANO

[MELODICA]

[air/bleed]

PERCUSSION

CROTALE

CROTALE

[bow]

KAZOO

KAZOO

SMALL DRUM

[supaball: drag]

WOOD

[bow]

VIOLIN 1

[damp]-----

VIOLIN 2

[damp]-----

VIOLA

[damp]-----

CELLO

[damp]-----

DOUBLE BASS

[damp]-----

VIOLIN 1 [SOLO]

[damp]-----

VIOLIN 2 [SOLO]

[damp]-----

VIOLA [SOLO]

[damp]-----

CELLO [SOLO]

[damp]-----

ALPHA

BRAVO

CHARLIE

DELTA

FLUTE
o-pppp (----)

OBOE
o-pppp (----)

CLARINET
o-pppp (----)

HORN
o-pppp (----)

TROMBONE
o-pppp (----)

PIANO
pp
ped

PERCUSSION
 [CROTALE]
 [bow]
o-pppp (----)

VIOLIN 1
o-pppp (----)

VIOLIN 2
o-pppp (----)

VIOLA
o-pppp (----)

CELLO
o-pppp (----)

DOUBLE BASS
o-pppp (----)

VIOLIN 1 [SOLO]
o-pppp (----)

VIOLIN 2 [SOLO]
o-pppp (----)

VIOLA [SOLO]
o-pppp (----)

CELLO [SOLO]
o-pppp (----)

FLUTE
p

OBOE
p

CLARINET
p

HORN
p

TROMBONE
p

PIANO
p
ped

PERCUSSION
 [CROTALE]
 [bow]
p

VIOLIN 1
p

VIOLIN 2
pp

VIOLA
pp

CELLO
p

DOUBLE BASS
p

VIOLIN 1 [SOLO]
p

VIOLIN 2 [SOLO]
pp

VIOLA [SOLO]
p

CELLO [SOLO]
p

FLUTE
p

OBOE
mf

CLARINET
f

HORN
f

TROMBONE
f

PIANO
f
ped

PERCUSSION
 [BASS DRUM]
 [supaball: drag]
mf

VIOLIN 1
pp

VIOLIN 2
mf

VIOLA
mf

CELLO
mp

DOUBLE BASS
mp

VIOLIN 1 [SOLO]
p

VIOLIN 2 [SOLO]
mf

VIOLA [SOLO]
f

CELLO [SOLO]
f

FLUTE
pp

OBOE
pp

CLARINET
pp

HORN
mf

TROMBONE
mf

PIANO
ff
ped

PERCUSSION
 [CROTALE]
 [bow]
ff

VIOLIN 1
ff

VIOLIN 2
ff

VIOLA
ff

CELLO
mp

DOUBLE BASS
mp

VIOLIN 1 [SOLO]
ff

VIOLIN 2 [SOLO]
ff

VIOLA [SOLO]
ff

CELLO [SOLO]
ff

ECHO

FOXTROT

GOLF

HOTEL

FLUTE *mf*

OBOE *mf*

CLARINET *p*

HORN *mf*

TROMBONE *mf*

PIANO *p* Ped.

PERCUSSION [CROTALE] [bow] *p*

VIOLIN 1 *p*

VIOLIN 2 *p*

VIOLA *p*

CELLO *p*

DOUBLE BASS *p*

VIOLIN 1 [SOLO] *f*

VIOLIN 2 [SOLO] *f*

VIOLA [SOLO] *f*

CELLO [SOLO] *f*

FLUTE *p*

OBOE *p*

CLARINET *p*

HORN *mf*

TROMBONE *mf*

PIANO *mf* Ped.

PERCUSSION [CROTALE] [bow] *ff*

VIOLIN 1 *ff*

VIOLIN 2 *ff*

VIOLA *mp*

CELLO *mp*

DOUBLE BASS *mp*

VIOLIN 1 [SOLO] *ff*

VIOLIN 2 [SOLO] *ff*

VIOLA [SOLO] *ff*

CELLO [SOLO] *ff*

FLUTE *mf*

OBOE *p*

CLARINET *p*

HORN *mf*

TROMBONE *mf*

PIANO *mf* Ped.

PERCUSSION [CROTALE] [bow] *mf*

VIOLIN 1 *mf*

VIOLIN 2 *p*

VIOLA *mf*

CELLO *p*

DOUBLE BASS *mf*

VIOLIN 1 [SOLO] *mf*

VIOLIN 2 [SOLO] *mf*

VIOLA [SOLO] *mf*

CELLO [SOLO] *mf*

FLUTE *pp*

OBOE *p*

CLARINET *p*

HORN *p*

TROMBONE *p*

PIANO *p* Ped.

PERCUSSION [CHIME BAR] [bow] *mf*

VIOLIN 1 *pp*

VIOLIN 2 *pp*

VIOLA *p*

CELLO *p*

DOUBLE BASS *p*

VIOLIN 1 [SOLO] *p*

VIOLIN 2 [SOLO] *p*

VIOLA [SOLO] *p*

CELLO [SOLO] *p*

NOTES

PULSE

OBJECTS

SING

FLUTE

mf

TWO SOUNDS

f

aerosol

[sing a note from the piano chord]

bell

harmonica

horn

paper

whistle

OBOE

mf

TWO SOUNDS

f

CLARINET

mf

TWO SOUNDS

f

HORN

mf

TWO SOUNDS

f

TROMBONE

mf

TWO SOUNDS

f

PIANO

mf

TWO SOUNDS

f

PERCUSSION

CROTALE

mf

TWO SOUNDS

f

VIOLIN 1

mf

TWO SOUNDS

f

VIOLIN 2

mf

TWO SOUNDS

f

VIOLA

mf

TWO SOUNDS

f

CELLO

mf

TWO SOUNDS

f

DOUBLE BASS

mf

TWO SOUNDS

f

VIOLIN 1 [SOLO]

TWO SOUNDS

f

VIOLIN 2 [SOLO]

TWO SOUNDS

f

VIOLA [SOLO]

TWO SOUNDS

f

CELLO [SOLO]

TWO SOUNDS

f

violin 1

• = 200-240

[heavy pressure] [distort][heavy pressure][distort] *sim.*

1

fff

o = 2-6"

2

[damp]-----

ppp (<>)

p *ppp (<>)*

p *ppp (<>)*

p *ppp (<>)*

p *ppp (<>)*

• = 60-80

[col legno battuto]

3

[ricochet]

p

p *p* *p* *p* *p*

[ricochet]

[ricochet]

[ricochet]

[ricochet]

[ricochet]

• = 80-100

[pizz]

4

[pizz]

p

p *pppp (-----)*

[arco]

[pizz]

[arco]

[pizz]

[arco]

p *pppp (-----)* *p*

pppp (-----)

o = 1-2"

5

fff *sffz*

fff *sffz*

fff *sffz*

fff *sffz*

fff *sffz*

fff *sffz*

fff *sffz*

fff *sffz*

o = 2-4"

6

[vib]

ppp (<>) *mp* *ppp (<>)*

[vib]

mp *ppp (<>)*

[vib]

[vib]

[vib]

ppp (<>) *mp*

[vib]

[vib]

[vib]

ppp (<>) *mp*

• = 200-240

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

7

Musical notation for measure 7, featuring a treble clef and a series of vertical strokes with flags. The notation is divided into four measures by repeat signs. The first measure starts with a dynamic marking *p*. Above the staff, there are vertical lines representing the bow's position, with some lines having a sharp sign (#) above them.

o = 1-5"

[vib]

[vib]

[vib]

8

Musical notation for measure 8, featuring a treble clef and a series of notes with stems. The notation is divided into four measures by repeat signs. The first measure starts with a dynamic marking *ppp (<>)*. Above the staff, there are wavy lines representing vibrato, with some lines having a sharp sign (#) above them.

o = 3-8"

[damp]

[damp]

[damp]

9

Musical notation for measure 9, featuring a treble clef and a series of notes with stems. The notation is divided into four measures by repeat signs. The first measure starts with a dynamic marking *ppp (<>)*. Above the staff, there are horizontal lines representing dampening, with some lines having a sharp sign (#) above them.

• = 200-240

[heavy pressure]

[distort]

[heavy pressure]

[distort]

sim.

10

Musical notation for measure 10, featuring a treble clef and a series of notes with stems. The notation is divided into four measures by repeat signs. The first measure starts with a dynamic marking *fff*. Above the staff, there are vertical lines with flags, some with a sharp sign (#) above them.

o = 2-4"

[ricochet]

[ricochet]

[ricochet]

[ricochet]

[ricochet]

11

Musical notation for measure 11, featuring a treble clef and a series of notes with stems. The notation is divided into four measures by repeat signs. The first measure starts with a dynamic marking *ppp (<>)*. Above the staff, there are horizontal lines representing ricochet, with some lines having a sharp sign (#) above them.

• = 120-180

12

Musical notation for measure 12, featuring a treble clef and a series of notes with stems. The notation is divided into four measures by repeat signs. The first measure starts with a dynamic marking *sffz*. Above the staff, there are vertical lines with flags, some with a sharp sign (#) above them.

violin 2

• = 200-240

[heavy pressure] [distort][heavy pressure][distort] *sim.*

1

fff

o = 2-6"

2

[damp]-----

ppp (<>)

p

ppp (<>)

p

ppp (<>)

p

• = 60-80

[col legno battuto]

[col legno battuto]

[col legno battuto]

[col legno battuto]

[col legno battuto]

3

[ricochet]

p

p

p

p

p

• = 80-100

[pizz]

[arco]

[pizz]

[arco]

[pizz]

[arco]

4

p

ppppp (-----)

p

ppppp (-----)

p

ppppp (-----)

o = 1-2"

5

fff

sffz

fff

sffz

fff

sffz

fff

sffz

fff

sffz

fff

sffz

fff

sffz

o = 2-4"

6

[vib]

ppp (<>)

mp

ppp (<>)

mp

ppp (<>)

mp

ppp (<>)

mp

ppp (<>)

mp

• = 200-240

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

7

Musical notation for measure 7, featuring a treble clef and a series of vertical strokes with various accents and dynamics.

o = 1-5"

[vib]

[vib]

[vib]

8

Musical notation for measure 8, featuring a treble clef, a series of notes with vibrato, and dynamic markings like ppp and p.

o = 3-8"

[damp]

[damp]

[damp]

9

Musical notation for measure 9, featuring a treble clef, notes with dampening, and dynamic markings like ppp and pppp.

• = 200-240

[heavy pressure]

[distort]

[heavy pressure]

[distort]

sim.

10

Musical notation for measure 10, featuring a treble clef, notes with heavy pressure and distortion, and dynamic markings like fff and sffz.

o = 2-4"

[ricochet]

[ricochet]

[ricochet]

[ricochet]

[ricochet]

11

Musical notation for measure 11, featuring a treble clef, notes with ricochet, and dynamic markings like ppp and p.

• = 120-180

12

Musical notation for measure 12, featuring a treble clef, notes with various dynamics like sffz and fff.

viola

• = 200-240

[heavy pressure] [distort][heavy pressure][distort] *sim.*

1

fff

o = 2-6"

[damp]-----

[damp]-----

[damp]-----

2

ppp (<>) *p* *ppp (<>)* *p* *ppp (<>)* *p* *ppp (<>)* *p*

• = 60-80

[col legno battuto]

[col legno battuto]

[col legno battuto]

[col legno battuto]

[col legno battuto]

[ricochet]

[ricochet]

[ricochet]

[ricochet]

[ricochet]

3

p *p* *p* *p* *p* *p* *p* *p* *p* *p* *p* *p*

• = 80-100

[pizz]

[arco]

[pizz]

[arco]

[pizz]

[arco]

4

p *o-pppp (----)* *p* *o-pppp (----)* *p* *o-pppp (----)*

o = 1-2"

5

fff *sffz* *fff* *sffz* *fff* *sffz* *sffz* *fff* *sffz* *sffz* *fff* *sffz* *fff* *sffz*

o = 2-4"

[vib]

[vib]

[vib]

[vib]

[vib]

[vib]

[vib]

[vib]

6

ppp (<>) *mp* *ppp (<>)* *mp* *ppp (<>)* *mp* *ppp (<>)* *mp* *ppp (<>)* *mp* *ppp (<>)* *mp*

• = 200-240

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

7

Musical notation for measure 7, featuring a series of vertical strokes with flags and beams, indicating percussive or woodblock-like sounds.

o = 1-5"

[vib]

[vib]

[vib]

8

Musical notation for measure 8, showing a sequence of notes with dynamic markings like *ppp (<>)* and *p*, and vibrato lines above the notes.

o = 3-8"

[damp]

[damp]

[damp]

9

Musical notation for measure 9, featuring notes with dynamic markings like *ppp (<>)* and *o-pppp (----)*, and a dashed line indicating damping.

• = 200-240

[heavy pressure] [distort] [heavy pressure] [distort]

sim.

10

Musical notation for measure 10, showing a sequence of notes with dynamic markings like *fff*, *sffz*, and *ppp (<>)*.

o = 2-4"

[ricochet]

[ricochet]

[ricochet]

[ricochet]

[ricochet]

11

Musical notation for measure 11, featuring notes with dynamic markings like *ppp (<>)*, *p*, and *sffz*, and a curved line above the notes.

• = 120-180

12

Musical notation for measure 12, showing a sequence of notes with dynamic markings like *sffz* and *fff*.

cello

• = 200-240

[heavy pressure] [distort][heavy pressure][distort] *sim.*

1

○ = 2-6"

[damp]-----

[damp]-----

[damp]-----

2

• = 60-80

[col legno battuto]

[col legno battuto]

[col legno battuto]

[col legno battuto]

[col legno battuto]

3

• = 80-100

[pizz]

[arco]

[pizz]

[arco]

[pizz]

[arco]

4

○ = 1-2"

5

○ = 2-4"

[vib]~~~~~

[vib]~~~~~

[vib]~~~~~

[vib]~~~~~

[vib]~~~~~

[vib]~~~~~

[vib]~~~~~

[vib]~~~~~

6

• = 200-240

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

[f.n. pizz]

[col legno battuto]

7

Musical notation for measure 7, treble clef. It features a sequence of notes with stems pointing up and down, indicating a specific rhythmic pattern. The notes are grouped into four measures. The first measure starts with a piano (*p*) dynamic. The notation includes various articulations such as accents and slurs.

o = 1-5"

[vib]

[vib]

[vib]

8

Musical notation for measure 8, bass clef. It shows a series of notes with stems pointing up and down. The first measure starts with a pianissimo (*ppp*) dynamic. The notation includes vibrato markings (*[vib]*) and dynamic markings such as *p* and *ppp*.

o = 3-8"

[damp]

[damp]

[damp]

9

Musical notation for measure 9, bass clef. It features notes with stems pointing up and down. The first measure starts with a pianissimo (*ppp*) dynamic. The notation includes damping markings (*[damp]*) and dynamic markings such as *ppp* and *pppp*.

• = 200-240

[heavy pressure]

[distort]

[heavy pressure]

[distort]

sim.

10

Musical notation for measure 10, treble clef. It shows a series of notes with stems pointing up and down. The first measure starts with a fortissimo (*fff*) dynamic. The notation includes articulations such as accents and slurs, and dynamic markings such as *sffz* and *fff*.

o = 2-4"

[ricochet]

[ricochet]

[ricochet]

[ricochet]

[ricochet]

11

Musical notation for measure 11, bass clef. It features notes with stems pointing up and down. The first measure starts with a pianissimo (*ppp*) dynamic. The notation includes ricochet markings (*[ricochet]*) and dynamic markings such as *p* and *ppp*.

• = 120-180

12

Musical notation for measure 12, treble clef. It shows a series of notes with stems pointing up and down. The first measure starts with a sforzando (*sffz*) dynamic. The notation includes articulations such as accents and slurs, and dynamic markings such as *fff* and *sffz*.