Mal\_Functions for String Quartet and Live Electronics

Elliott Andrew Lupp
Western Michigan University, luppelliott@yahoo.com

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Mal_Functions
For String Quartet and Live Electronics

by

Elliott Andrew Lupp

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in partial fulfillment of the requirements
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Thesis Committee:

Lisa Coons, Ph.D., Chair
Maria Cristina Fava, Ph.D.
Carter Rice, D.A.
Mal_Functions
For String Quartet and Live Electronics

Elliott Andrew Lupp, M.M.
Western Michigan University, 2019

Mal_Functions is a four-movement work for string quartet and live electronic that takes as its subject the timbrally rich and expansive acoustic capabilities of a string quartet and twists, warps, and expands upon them with the addition of the live electronic processing. The addition of electronics acts as only an extension of the performer, and therefore, appears to be generated by the performers themselves - as opposed to the computer. The overall goal of this piece is to take a well-established object of the musical past (the string quartet) and add to it something from the present day (live electronic processing).
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Independent Signal Processors: Each instrument has its own effects chain given the cue.

Effects:
- Each effect has a wet/dry knob and various other controllable parameters
- Signal in smooth
- Delay Lines
- Pitch Shifter (in cents)
- Reverb wet/dry
- Bit Shifter/Granular Effect
- Effects and Dry Signal display
- Panning
- Clear Delay: will flash when delay line is cleared

Master:
- MiraWeb Link: for Performers to view Cues
- Master Control for Delay Lines
- Cue Data Storage
- Master Reverb Control
- Main Balance
- Cue Information
- Master Out

The Patch
Performance Notes

**Bridge**  
Play directly on bridge

**MSP**  
Molto Sul Ponticello

**Ord.**  
Ordinary Bow Placement

**MST**  
Molto Sul Tasto

**Clb.**  
Col Legno Battuto

**Clt.**  
Col Legno Tratto

**SH**  
*(Shakey hand)* Your bowing should be shakey, inaccurate, and like that of someone who has barely played your instrument.

**NH**  
*(Normal hand):* Control your right hand as you normally would.

---

**Accented overpressure:** overpressure should be brief

**Bow behind the bridge**

**Sub tones (scratch)**

**Vibrato contour:** perform with vibrato according to contour

**As fast as possible**

**Finger pitches without bowing. This notehead is often used in tandem with improvisatory guidelines for a variety of bowing techniques (instructed within the score).**

*When a regular notehead is used within this texture, bow normally.*

**As high as possible**

**Gradually transition from one effect to the other**

---

**Ricochet into arco MORE CONTROL:** allow the bow to bounce with some pressure applied and transition into arco

**Ricochet into arco LESS CONTROL:** allow the bow to bounce freely and transition into arco

**Jete (ricochet):** fully controlled

---

**All Tremolos are very dense EXCEPT:**

- When measured tremolos are given, bow speed changer should be gradual.
- Pitch successions without articulations or slurs are to be played quasi legatissimo (one note to a bow).
slowly transition to natural harmonic while glissing (E♭ - E♮)
begin gradually slowing down tremolo to MSP

begin gradually slowing down tremolo to Ord.

bow at different paces

accent re-bows

bow at different paces

accent re-bows
Try to match bowing of another performer
DO NOT accent re-bows
as high as possible
hold for 10 sec.

Vln. I

Vln. II

Vla.

Vc.

Elec.
as steady as possible

mf

bridge

SFZppp

mf ppp

bridge

mf ppp

mf ppp

mp

1+ to MSP

Ord. to NH

MSP to Ord.
Vln. I

- Measured trem. (1)
- One bow per note

Vln. II

- Measured trem. (1)
- (Still SH)

Vla.

- Measured trem. (2)
- Measured trem. (1)
- (Still SH)

Vc.

- Measured trem. (1)
- One bow per note

Elec.

- Measured trem. (1)
- (Still SH)

M

RHL. to $\text{q.} \cdot 60$

- MSP (still 6+ to Ord.)
accent.

Vln. I

Vln. II

Vla.

Vc.

Elec.
Allegro (M.M. \( \frac{3}{4} \) c. 120)

Vln. I

Vln. II

as exact as possible

Vla.

Vc.

Elec.
like walking on thin ice \( \frac{3}{4} \) c. 50
rubato sempre

Violin I

Violin II

Viola

Cello

Electronics
like walking on thin ice \( \text{d} = c. 50 \)

---

Vln. I

\[ \text{MST (flautando)} \]

\[ \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \]

\[ \text{Ord.} \rightarrow \text{to MST} \rightarrow \text{MST} \]

keep bow position still

Vln. II

\[ \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \rightarrow \text{to MSP} \rightarrow \text{MST} \rightarrow \text{to MST} \rightarrow \text{MST} \]

keep bow position still

to MST

Vla.

\[ \text{MSP} \rightarrow \text{Ord.} \rightarrow \text{MSP} \rightarrow \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \]

keep bow position still

to MST

Vc.

\[ \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \rightarrow \text{MSP} \rightarrow \text{MST} \]

keep bow position still

to MST

Elec.

\[ \text{2} \rightarrow \text{4} \rightarrow \text{4} \]
Moderato (\( \cdot \approx \) c. 108)

Vln. I

\[ \text{MST} \]

Vln. II

\[ \text{MST} \]

Vla.

\[ \text{MST} \]

Vc.

\[ \text{MST} \]

Elec.

\[ \text{MST} \]
slowly become less precise

frantically (not exact)
\begin{enumerate}
\item Frequently randomly switch bow angles
\item Producing scratch tones
\end{enumerate}
frequently/randomly bow a harmonic

frequently/randomly bow a harmonic

frequently/randomly bow a harmonic

frequently/randomly bow a harmonic
Vln. I

Vln. II

Vla.

Vc.

Elec.

frequently/randomly bow a harmonic
as rhythmically precise as possible

rit.

as rhythmically precise as possible

as rhythmically precise as possible

as rhythmically precise as possible

as rhythmically precise as possible
like walking on thin ice $\frac{j}{}= c. 50$

Vln. I

Vln. II

Vla.

Vc.

Elec.
Vln. I

- MSPI (fingered)
- bow rhythm legato
- to MST (flautando)
- frequently/randomly bow a harmonic
- frantically
- pppp

Vln. II

- to MST (flautando)
- bow rhythm legato
- MSP
- MST (flautando)

Vla.

- how rhythm legato
- to MSP
- ffff

Vc.

- how rhythm legato
- to MSP
- MSP
- MST

Elec.

- MSR
- ffff
- pppp
increase circular bow speed with dynamic

create steady pulse with circular bowing
follow rhythm

create steady pulse with circular bowing
follow rhythm

increase circular bow speed with dynamic

create steady pulse with circular bowing
follow rhythm

increase circular bow speed with dynamic

create steady pulse with circular bowing
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create steady pulse with circular bowing
follow rhythm

increase circular bow speed with dynamic

create steady pulse with circular bowing
follow rhythm

increase circular bow speed with dynamic

create steady pulse with circular bowing
follow rhythm

increase circular bow speed with dynamic
increase circular bow speed with dynamic

frantically

increase circular bow speed with dynamic

increase circular bow speed with dynamic

arco

arco

48

3/4
IV

Moderato \( \approx \text{c. 108} \)

Violin I

\( \text{MSP} \)

Violin II

\( \text{MSP} \)

Viola

\( \text{MSP} \)

Cello

\( \text{MSP} \)

Electronics

\( \text{MSP} \)
Vln. I

Vln. II

Vla.

Vc.

Elec.
OUT OF TIME (15 - 20 seconds)

CUE TOGETHER

Improvise as chromatically as possible with aggressive, quick, and pizzicato gestures.
Use pizzicato, harmonics, quick glissandi and the full range of your instrument.

Vln. I

Vln. II

Vla.

Vc.

Elec.

Moderato \( \text{\textit{c. 108}} \)
LOOK FOR CUE FROM VIOLIST

Vln. I

Improvise as charitably as possible with aggressive, quick, and periodicistic gestures. Use pizzicato, harmonics, quick glissandi, and the full range of your instrument.

Vln. II

Improvise as charitably as possible with aggressive, quick, and periodicistic gestures. Use pizzicato, harmonics, quick glissandi, and the full range of your instrument.

Vla.

Vc.

Improvise as charitably as possible with aggressive, quick, and periodicistic gestures. Use pizzicato, harmonics, quick glissandi, and the full range of your instrument.
Improvis as chaotically as possible with aggressive, quick, and porous gestures. Use only pianissimo, with and without harmonics. Use the full range of your instrument.
occasional clb.

Vln. I

Vln. II

Vla.

Vc.

clb.

Elec.
occasional cfb.