

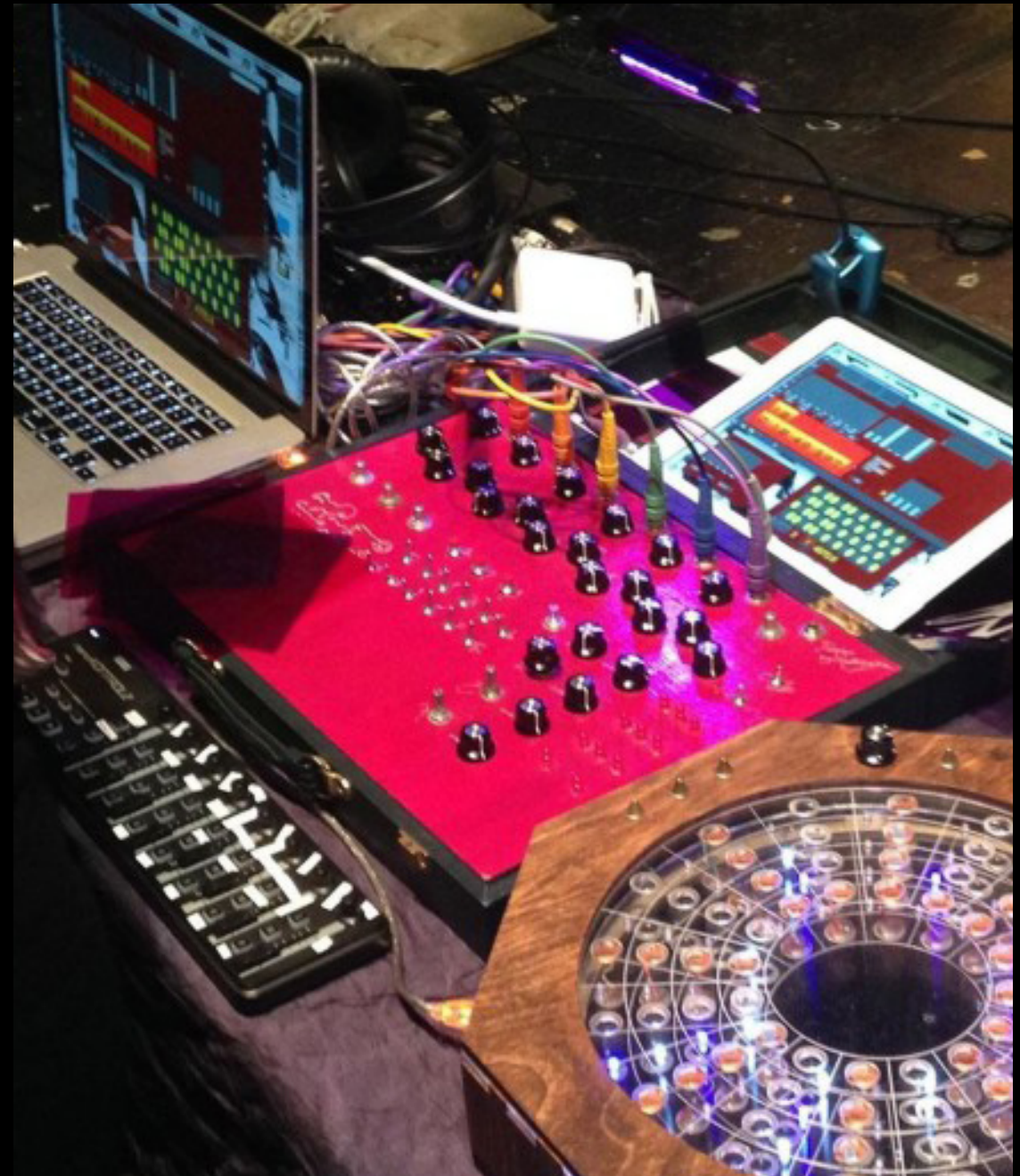
A Percussionist's Guide to Performing Live with Fixed-Media Electronics

Lecture Recital presented by Matt Jordan
September 25, 2018

*Presented in Partial Fulfillment of the Doctor of Music Degree
from the Florida State University*

Introduction

- Electroacoustic Music - music involving the integration of electronic elements.
- Music written for percussion and electronics is becoming standard practice
- There is a lack of written information or research on the performance practice of electroacoustic music
- Many undergraduate, graduate, and professional recitals contain electroacoustic pieces



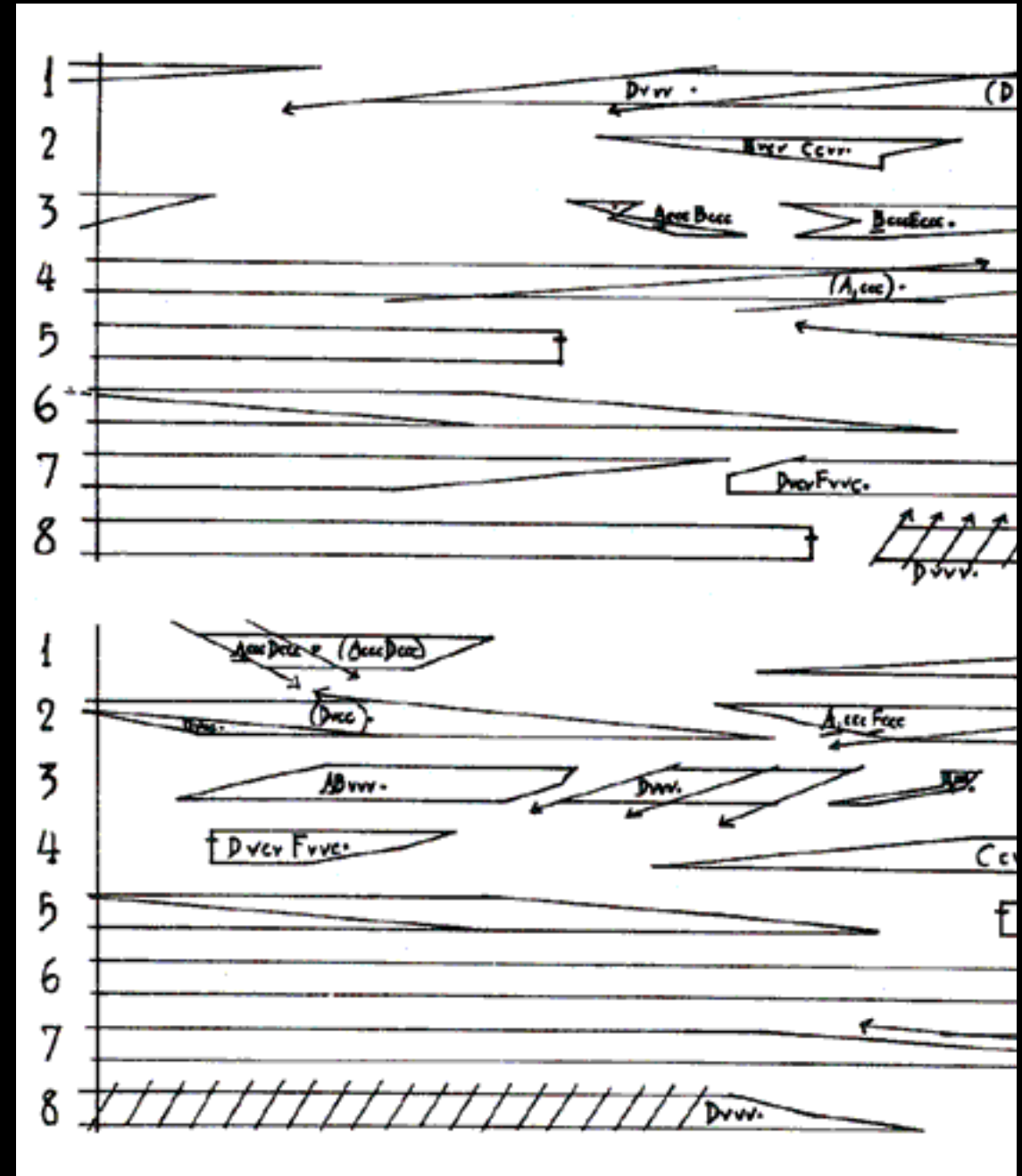
Electroacoustic Percussion Music

A Brief History

- Chamber Percussion Repertoire and Electronics were in their infancy at the same time in the early 20th century.
- Composers such as John Cage, Karlheinz Stockhausen, and Edgard Varèse were involved early in the evolution of both mediums.
 - Composers writing for percussion alone in the early 20th century were exploring new timbres and colors not previously available to them.
 - As electronic instruments were developed, these same composers used electronic elements the same way through the techniques of *musique concrète*.

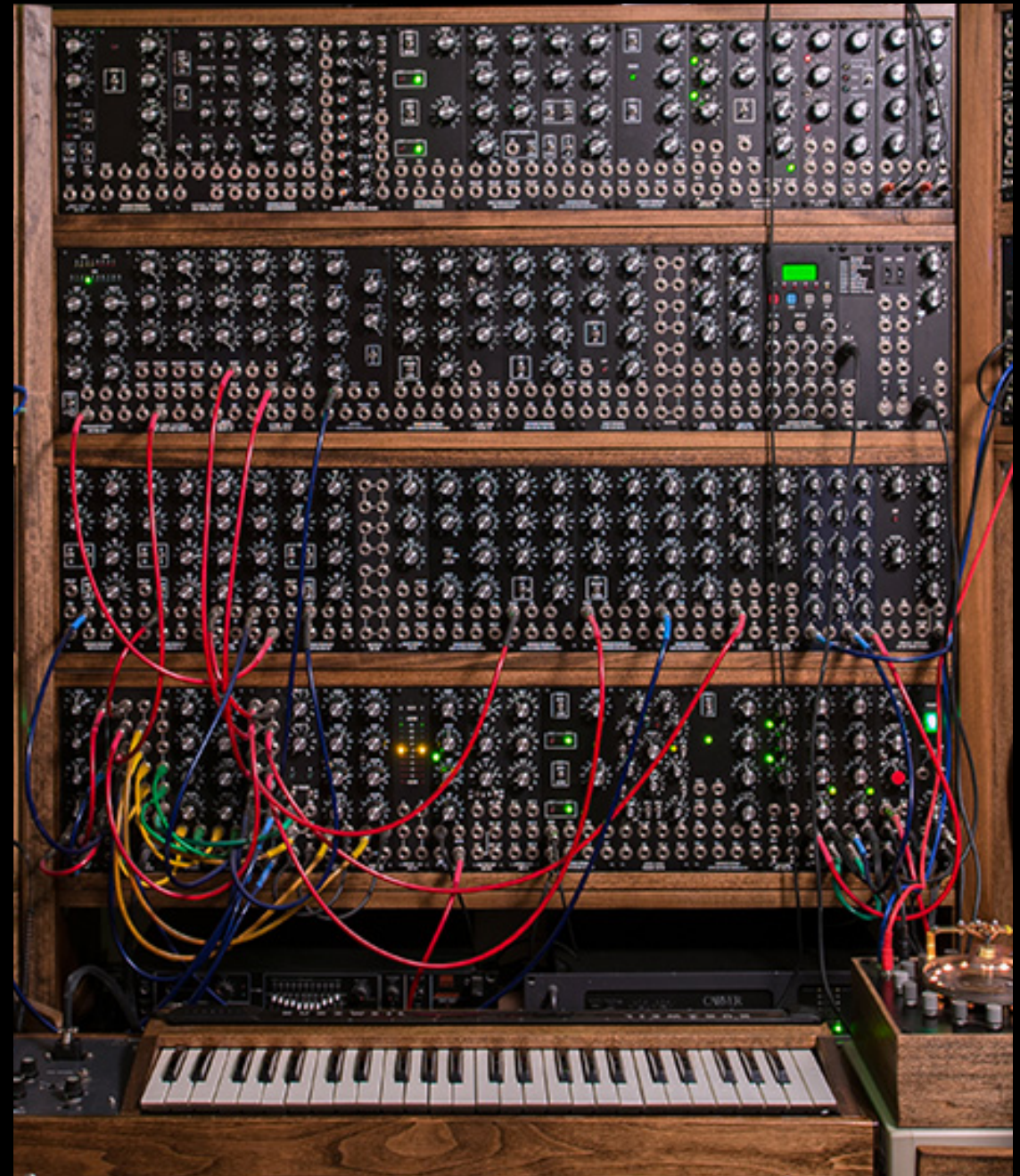
John Cage - *William's Mix* (1951-1953)

- *William's Mix* had a 193 page score that described which of 6 categories of sounds to use, and where to cut and splice the tape reels.
- Categories were city, country, electronic, manually produced, wind, and "small" sounds.
- Written for 8 channel surround sound (8 tape machines playing simultaneously)



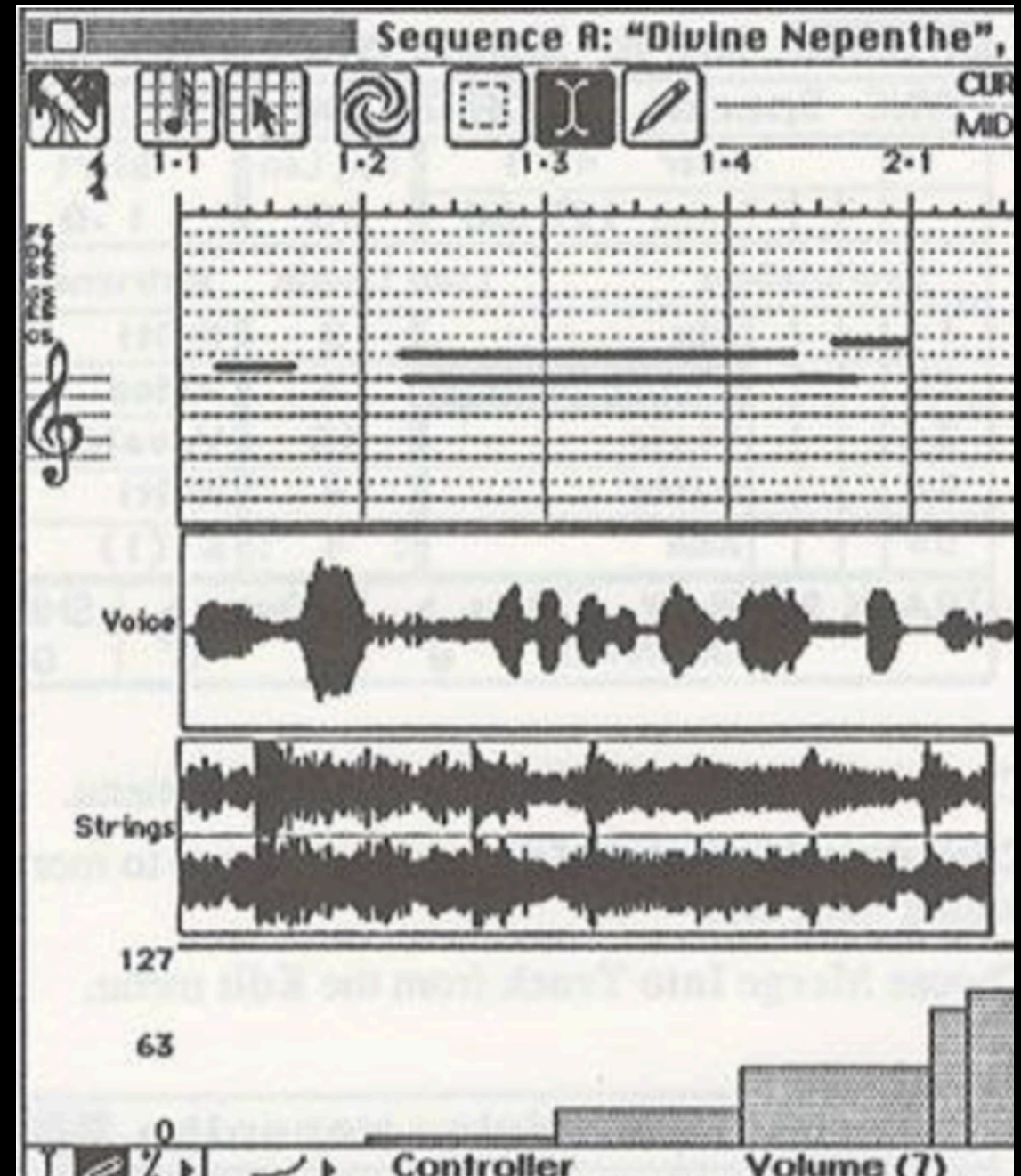
A Brief History, continued

- As new technology was invented and utilized by composers, so too was the usage of percussion
- The development of MIDI, Modular Synthesizers, and Multi-Track recording allowed composers to use new timbres and techniques
- The development of the personal computer was the turning point for the accessibility of music technology



A Brief History, continued (2)

- The development of the personal computer allowed more composers access to electronic instruments and tools
- As a result, the number of pieces written for percussion and electronics has increased exponentially over the last decade.
- This has created a whole new category of music that is accessible to audiences and performers alike.
- The technology is cheap enough that even many college students can afford the tools to compose and perform this type of music.



“I think it was Varèse that said something like ‘percussion led to electronics’. This was the idea that non-pitched percussion led to the use of noise, and I kept thinking, ‘It’s going to come out the other end; the progression is going to keep on going — electronics will lead back to percussion.’”

—Steve Reich, from Thoughts on percussion and rhythm

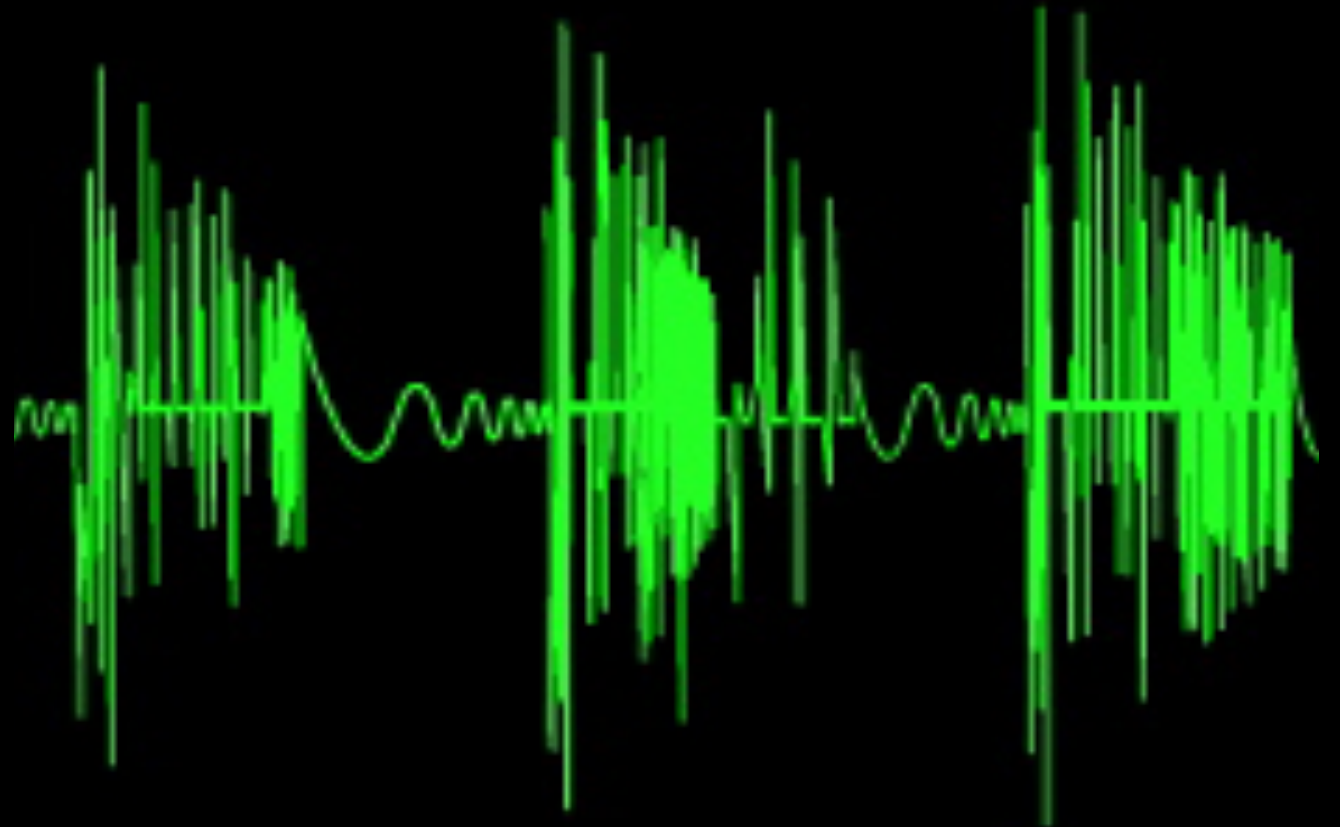
Recommended Audio Equipment

- Mac or PC running a modern operating system
- Audio Interface with at least 2 Mic Preamps and 4 1/4" Audio Outputs (ex. Presonus Studio 2/6, Focusrite Scarlett 2i4, Behringer UMC204HD)
- Pair of PA Speakers for Audience (ex. QSC K12.2, Presonus Air 12, Mackie SRM450v3)
- 1 Pair of cardioid condenser microphones on stands (ex. Rode NT-5, Shure KSM137, Audio Technica AT2035)
- In-ear monitor system, either wired or wireless (ex. wireless—Shure PSM300, wired—Behringer P2)
- Audio Software capable of sending multi-output audio (ex. Apple Logic, Mainstage, Presonus Studio One, Ableton Live)



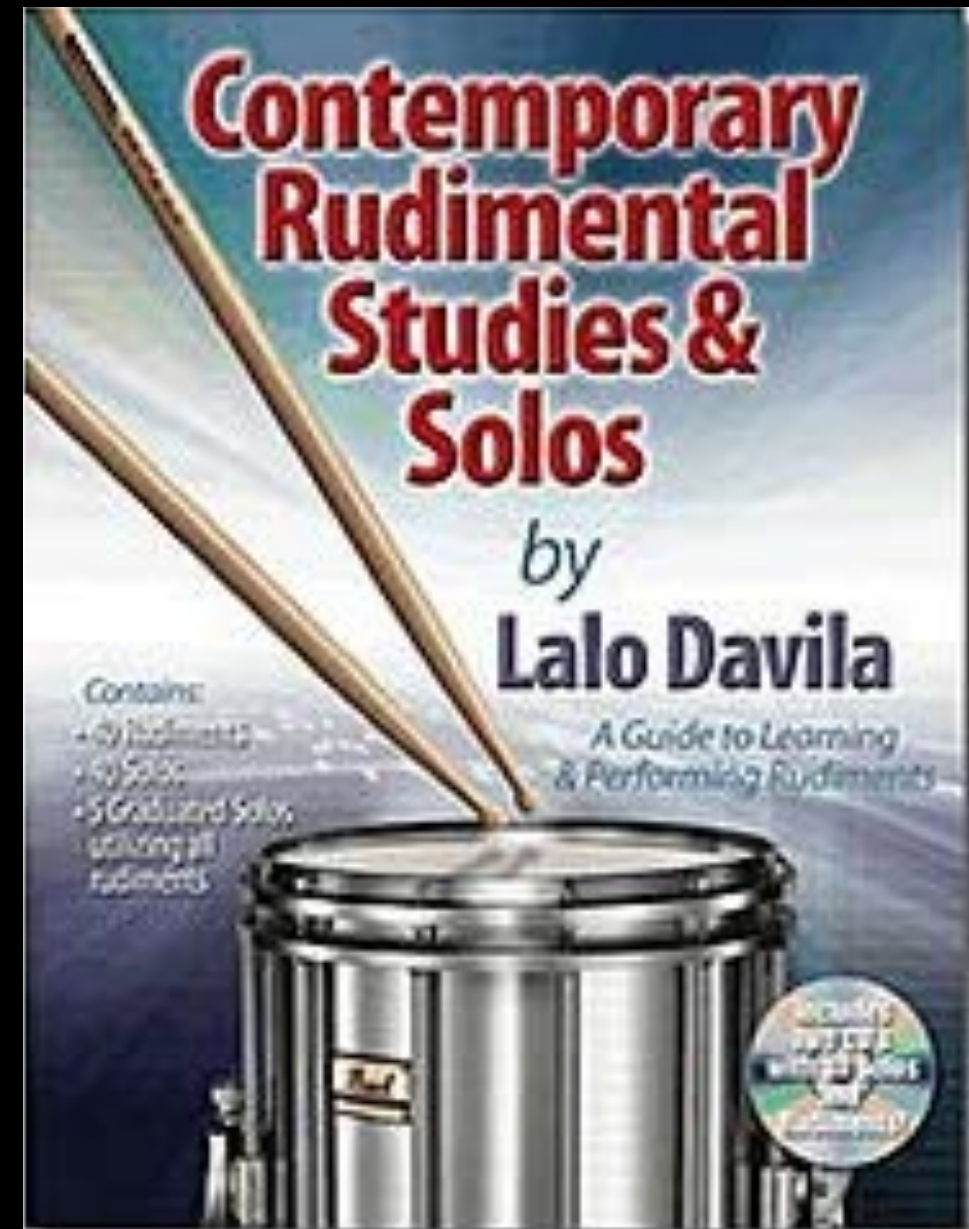
Works for Percussion and Fixed Media

- Fixed Media is another name for what we often hear as a piece “with tape”
- This just means that the electronic element is unchanged by anything the performer does.
- This is the most common type of electroacoustic work.

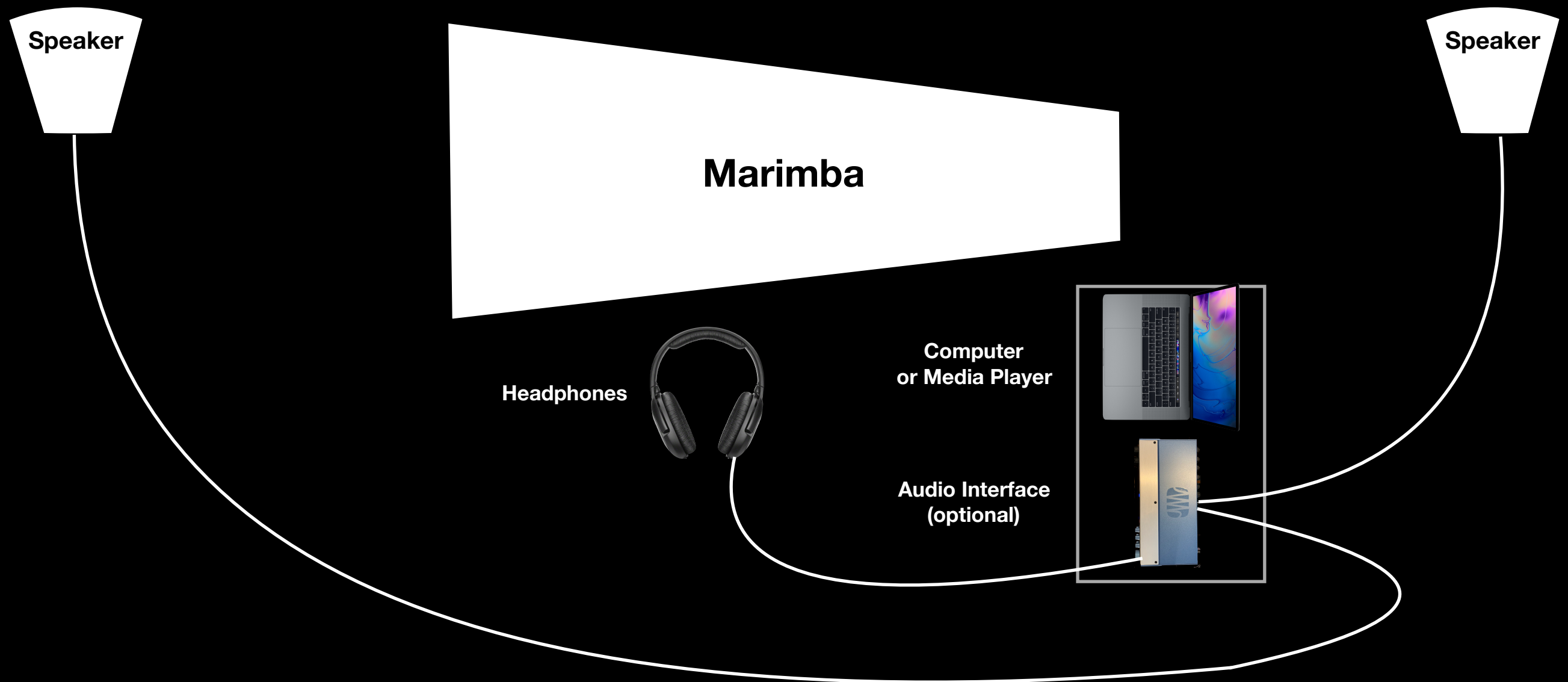


Works for Fixed 2-channel Media without Cue or Click Tracks

- The most technologically basic type of pieces—essentially playing along to a track.
- Many solos for percussion and electronics fall into this category.
- You've likely played one of these without knowing it!
 - Lalo Davila - Contemporary Rudimental Studies
 - Tom Morgan - Jazz Drummer's Reading Workbook
 - Jim Snidero - Jazz Conception
 - Any other method book with a play along track
- These aren't necessarily easy—some of the works out there require significant study to understand the fixed media part and how it interacts with the solo part.



Technical Setup for Fixed Two-Channel Media without Cue or Click Track



Best Practices

- Don't use iTunes or similar for this! Dedicated audio software is recommended.
- Write audio time codes into your music. This will allow you to easily find a section of music that you need to start at.
- Use an application like Amazing Slow Downer to be able to practice with the audio file at a slower tempo.
- Do score study away from the instrument while listening to the track. If necessary, transcribe any electronic elements that might cause you issues. Write these parts into your music as cues.
- Make sure that you practice with your headphones at a consistent volume.
- Practice playing “drop the needle”, in case you get lost and need to be able to get back on with the tape.

Bell Plates - Scott Lindroth

- Work for Multi-percussion and electronics.
- Tape has plenty of content to listen to for time
- Almost too much to listen to at times, can be hard to stay focused on the right things while playing.
- As with many of the pieces in this category, the composer doesn't specify anything about the electronic element.



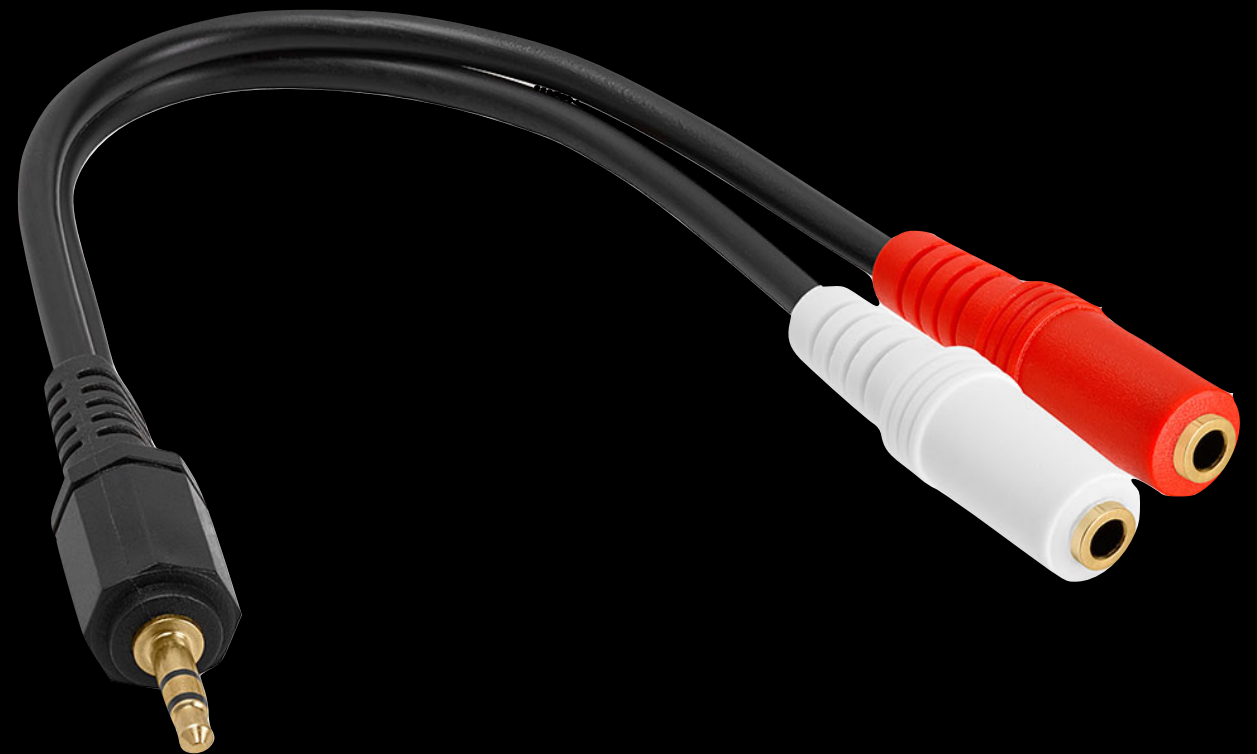
Excerpt of
Bell Plates
by Scott Lindroth

Selected Works without Click/Cue Track

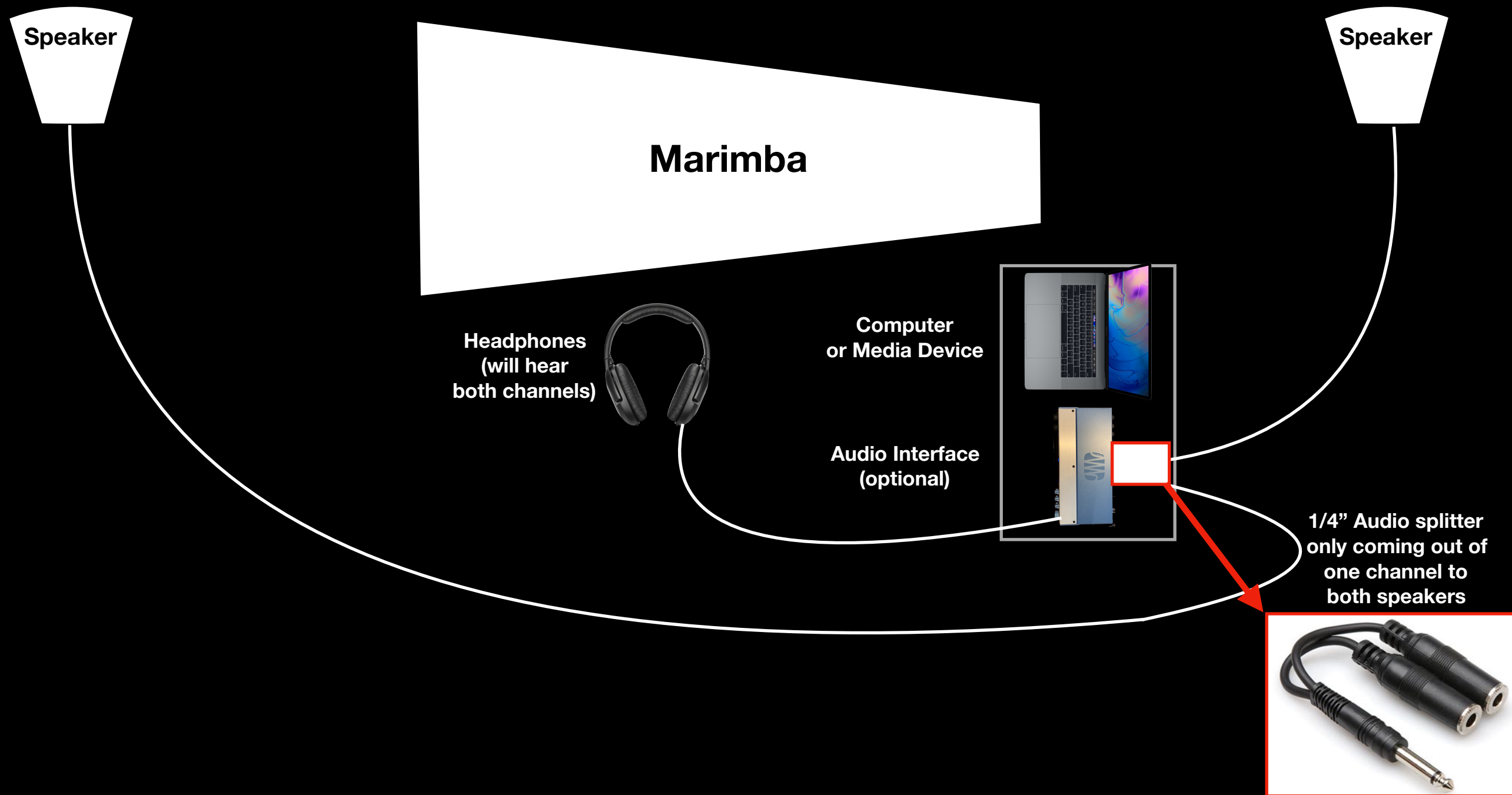
Composer	Work	Instrumentation
Scott Lindroth	Bell Plates	Multi-Percussion and Fixed Media
James Campbell	Garage Drummer	Multi-Percussion and Fixed Media
Bruce Hamilton	Interzones	Vibraphone and Fixed Media
Dave Maric	Trilogy	Marimba/Vibes/Multi-Percussion and Fixed Media
Christos Hatzis	Fertility Rites	Marimba and Fixed Media
Paul Bissell	Hangar 84	Marimba and Fixed Media
Ben Wahlund	Crystal Butterfly	Marimba and Fixed Media

Works for Fixed 2-channel Media with Split Channel Cue or Click Track

- Single Stereo Signal (from phone, computer, CD player)
 - Left channel is for audience
 - Right channel is a click or cue track
- Can be a great introduction to the use of a cue or click track
 - Very affordable
 - Easy to set up
- The biggest downside is the lack of stereo field in the accompaniment.
 - As a result, some composers offer two versions of the accompaniment track.



Technical Setup for Fixed Two-Channel Media with Split Channel Cue or Click Track



Best Practices

- If using the simplified setup, be sure that you're being consistent with your audio output volume to your headphones. Changing the volume will also change what the audience hears.
- Make sure that whenever possible, you're listening to the track rather than the click. It's easy to get in the habit of not playing like a good musician when you have a click available.
- The same policy of learning and studying the electronic part alone still applies here. It's worth listening to the track without the click and seeing if you notice things that you might not have otherwise.
- Additionally, relatively open headphones are usually better than noise isolation or noise cancelling headphones. This will allow you to hear the acoustic sound of your instrument easier, and allow you to blend and balance with the track.

Electric Thoughts

by Ivan Trevino

- This work was inspired by Trevino's favorite electronic pop music artists, such as Radiohead and Jon Hopkins.
 - Especially due to those artists and how seamlessly they meld artificial instruments with real ones.
- The idea of the work is to find a balance, using the tape part to enhance and not overtake the real life performer.

solo marimba + tape

**electric
thoughts**

ivan trevino

Excerpt of
Electric Thoughts
by Ivan Trevino

Selected Works with a split channel Click/Audio Track

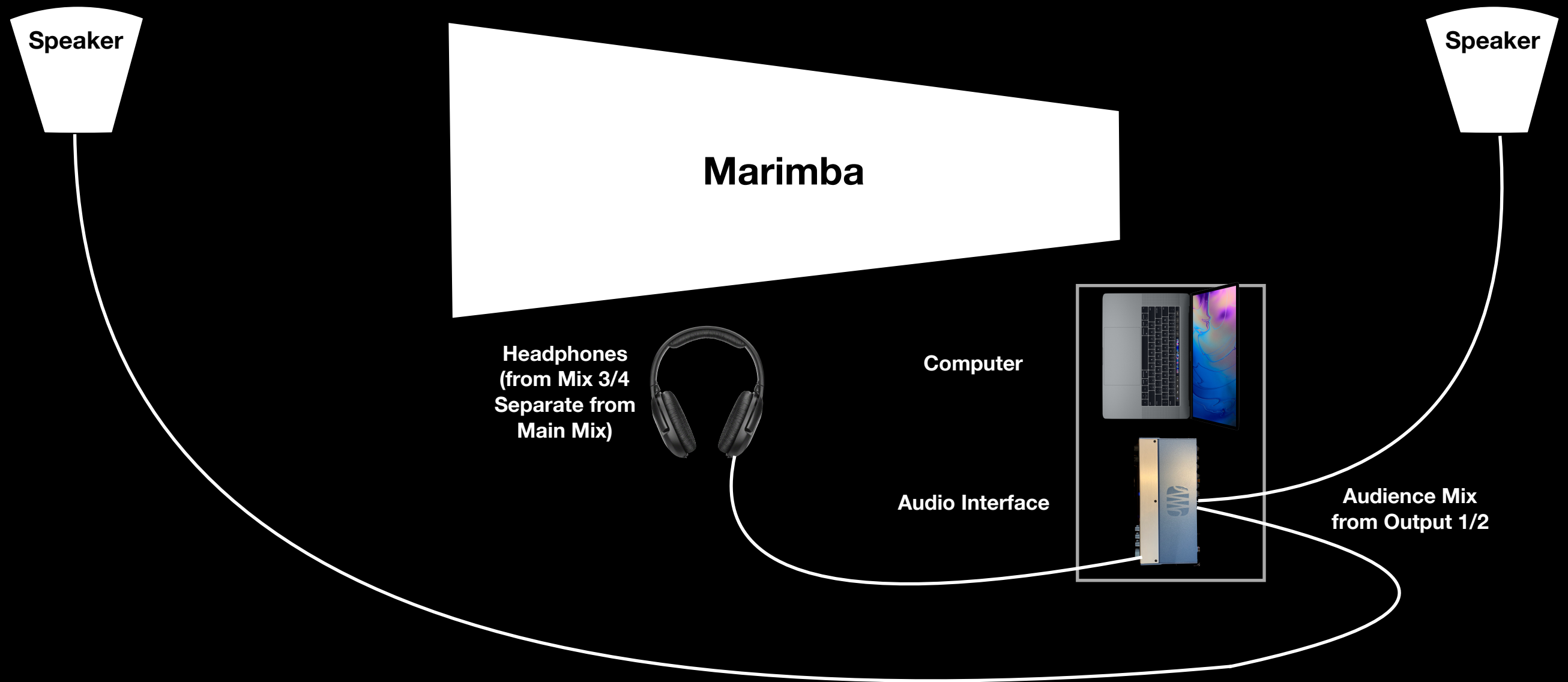
Composer	Work	Instrumentation
Ivan Trevino	Electric Thoughts	Marimba and Fixed Media
Attila Szilvási	Individual Lemming	Marimba and Fixed Media
Evan Chapman	Like Swimmers	Vibraphone, Multi-Percussion, and Fixed Media
Steve Houghton	Oceanus	Drumset, Marimba, and Fixed Media
James Oliverio	Timpani Concerto #1	8 Timpani and Fixed Media
Charles Argersinger	Celestial Dances	Marimba and Fixed Media

Works for Four-Channel Fixed Media with Separate Stereo Mix and Cue/Click Track

- This category of works requires more technical knowledge
 - Audio Interface is required
 - Use of multi-output software and routing
- Generally, this type of work is not much different to perform for the performer once the technology is figured out
 - It is much better for the audience!
 - Allows for the full range of stereo panning effects in the track, which creates a sense of spaciousness.



Technical Setup for Four-Channel Fixed Media with Separate Stereo Mix and Cue/Click Track



Best Practices

- Most of the best practices mentioned previously apply to this type of work.
- Once you're using digital audio workstation software, it opens up additional options to performers.
 - Using a mobile device as a 'Front of House' mixing device
 - You can also route mics into your project if you want to balance to the track volume
 - Automation allows you to change the track level if there are certain parts that are louder or softer than others
 - You can also set up markers in your DAW that can be used to recall different rehearsal letters or other consistent starting points.

Bounce! By Anthony DiBartolo

- Piece for snare drum and electronics
- Inspired by dubstep and other electronic music
- Track is considered part of the solo by the composer, and is not an accompaniment
- Excellent setup guide is included by the composer



Setting up the Headphone Mix in *Bounce!*

- Bounce requires the use of Auxiliary Sends.
- Separate mixer within a mixer. Allows you to send audio to another location.
- In this image, the Stereo Mix is being sent to Aux 1 using Bus 1, which is routed to Output 3/4.
- The click and counting (cue) tracks are also being sent to Aux 1 through the busses.



Excerpt of
Bounce!
by Anthony DiBartolo

Selected Works with a separate Stereo Mix and Cue Track

Composer	Work	Instrumentation
Anthony DiBartolo	Bounce!	Snare Drum and Fixed Media
Dustin Lowes	Fear of the Hunted	Multi-Percussion and Fixed Media
Edmund J. Champion	Losing Touch	Vibraphone and Fixed Media
Francisco Perez	Tesseract	Vibraphone and Fixed Media
Attila Szilvasi	Unreal Motorway	Marimba and Fixed Media
Brian Blume	Strands of Time	Snare Drum and Fixed Media

Works for Four-Channel Fixed Media with Separate Stereo Mix and Performer added Cue/Click Track

- Works that were intended for performance without a click track many times are difficult to perform consistently and accurately due to the challenges of performing with a computer
 - Space in the accompaniment is much harder to deal with than playing with someone
- Doesn't add any technical requirements to the previous set ups



Best Practices

- Treat cue and click tracks as you would a chamber music rehearsal.
 - There are times when the other person needs more information, such as a head bob, mallet cue, breath, etc.
 - You're just converting these types of gestures into an audible format.
 - It's not cheating, it's giving yourself a fighting chance! The computer can't listen or adjust to you, so you have to have all the information needed to maintain that connection.
 - Don't go overboard, you don't want using the click to replace playing to the music itself. Add only when it helps consistency of performance.
 - Reference points, such as rehearsal numbers/letters are often super helpful.
- Be creative, these don't have to be clicks or vocal phrases specifically.
 - Shaker or drum set groove, etc—whatever makes the music feel the way it should.

The Alabados Song by Paul Bissell

- This work for marimba and tape was intended to be played without cue/click track
 - Definitely possible, but the effects in the piece are lost without perfect alignment in certain sections.
 - Pacing certain sections accurately is much more difficult without these cue tracks.
- Not much is needed, but those added cues/clicks can make a dramatic difference in the performance.
- I've also routed the marimba mics into the project, to add reverb and levels to match the level of the electronic element.

The Alabados Song
for Marimba and Tape
Paul Bissell 2001

Slowly $J=50$
"para Ti"
continue roll
sfz ppp
All long notes rolled
"Es Hora"
Tape Swell →

[00:39] $J=70$
f pp
mf

13 $J=126$
f
Ritard

18 Slowly Mysteriously
"To porque..?" $J=60$
All Notes Rolled
p mp

23 "pero"
Slightly moving ahead
GONG DELAY
Gong
Ritard
timpani/bass cue:
mf f

Example of Cues Added



- In this work, there are long periods of time without any audio at all. This makes coming in after those periods feel uneasy, because they're following rubato sections that change from performance to performance.
 - As a result, vocal countdowns have been added for events.
 - Countdowns usually preferable to counting measures rest, as you don't have to remember the number of repetitions.
- During the Allegro section, there are 2-3 bars at a time without musical material in the electronic element, and then the track reenters on a marimba syncopated note.
 - Adrenaline in live performance will almost always cause this to not be perfect
 - There are also times where the track itself isn't metronomically correct—having the cue track match perfectly to what is actually there is better than guessing

Excerpt of
The Alabados Song
by Paul Bissell

Selected Works where adding a performer created cue/click track is recommended

Composer	Work	Instrumentation
Paul Bissell	The Alabados Song	Marimba and Fixed Media
John Psathas	One Study, One Summary	Marimba and Fixed Media
Ben Wahlund	The Whimsical Nature of Small Particle Physics	Snare Drum and Fixed Media
Nathan Daughtrey	Halcyon Deconstruction	Marimba and Fixed Media
Steven Ridley	Animism	Timpani and Fixed Media
Wesley Smith	For Marimba and Tape	Marimba and Fixed Media
Daniel McCarthy	Warhammer	Marimba and Fixed Media

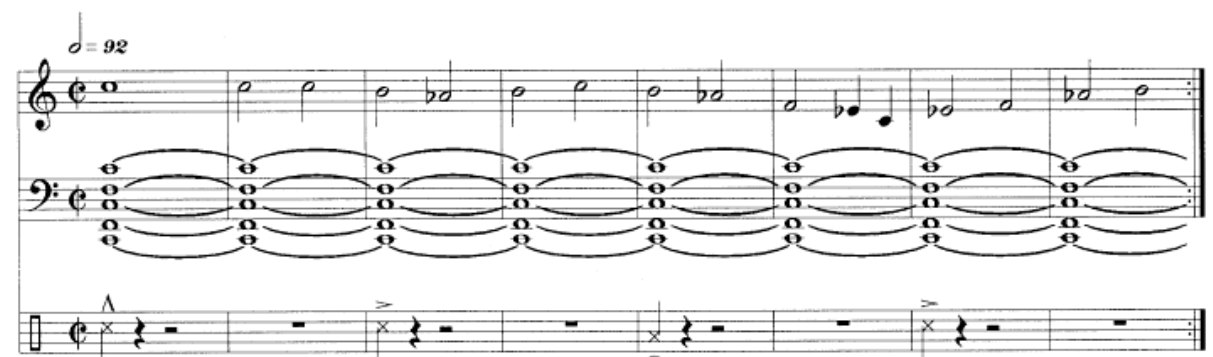
Works for Four-Channel Fixed Media with Electronic Tracks that replace Acoustic Accompaniment

- One usage of electroacoustic music is the replacement of acoustic accompaniment with electronic tracks.
 - Allows more timbral possibilities than a piano accompanist
 - Many times this can be more compositionally appropriate than acoustic instruments
- This can be done from the composer's end, or also from the performer's end
 - If done by the performer, make sure the proper permissions are obtained from the publisher
 - Some composers explicitly mention this possibility in their works.

New-thaan: program note and performance instructions

Composed in February 1998, *New-thaan* is a solo for snare drum or muted drum in the style of my earlier work, *Lahara* (1977). Both pieces are set in a 16-beat rhythmic cycle – *tin tal* – traditional to Hindustani classical music. The title, *New-thaan*, is a play on the Hindi word *Uthan* (literally “rising up”), which applies to the opening elaboration in a classical tabla solo.

In fact, *New-thaan*, could be substituted, with the appropriate tempo adjustment, for the beginning sections in *Lahara* (labelled *Bhumika* and *Uthan*). In any case, *New-thaan* is meant to be performed against an aural background of the 16-beat cycle, in the form of a repeating melody and/or a percussive marking of the four-beat sub-sections of this cycle. This background is shown below, along with a suggested chordal drone typical of Indian music performance. The melodic and chordal material may be realized using any instruments (acoustic or electronic) that sound loud enough to be heard relative to the drum chosen. The drum may be a standard snare, tom or prepared drum (as used in my piece *Mudra*, for example). The percussive accents could be performed, for example, on two different woodblocks or by hand-clapping. The entire solo will require sixteen repeats of the sixteen-beat cycle (each beat is represented by a half-note in this context). In keeping with traditional Indian performance practice, it would be appropriate to begin the performance with one statement of the melody before the entrance of the drum solo. The melody and drone should sustain their notes and fade out gradually on the last note of the drum part.



Best Practices

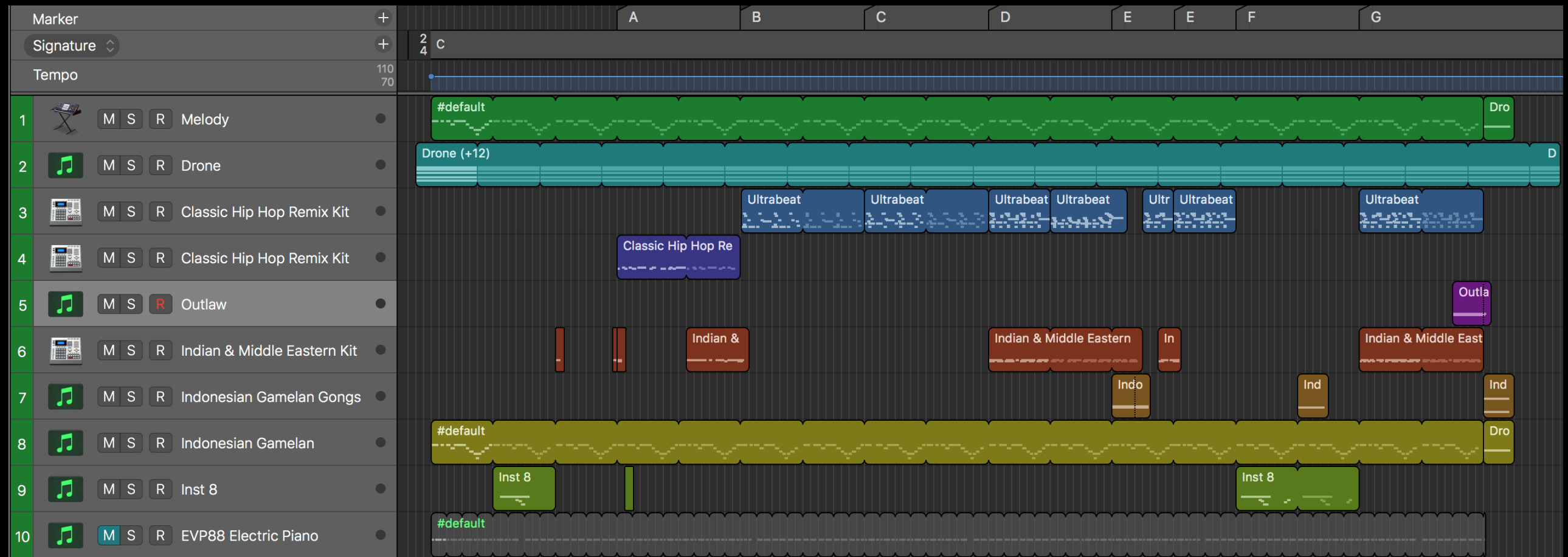
- It is important to keep the context of the original work in mind when adapting an acoustic work to an electronic one.
 - Electronic accompaniment doesn't have to mean “electronic sounds”
 - Sampled orchestral instruments are generally appropriate when making a mockup accompaniment.
 - If a work is being dramatically changed by this, be sure the publisher of the work has given written permission. It falls under permission to arrange.
- Consider the solo instrument when choosing timbres—you could inadvertently cause orchestration issues by not paying attention to this.

New-Thaan by Bob Becker



- This work was originally written for snare drum or tom with acoustic or electronic accompaniment.
- Based on North Indian Tabla styles and forms
- Melody is based on a Raga.
- There are instructions in the program notes of the work what should be happening in the accompaniment, either acoustic or electronic. This was used to make an electronic performance track.

Compositional Process for Accompaniment



The screenshot displays a DAW interface with 10 tracks. The top section shows the 'Marker' and 'Signature' (2/4 C) and 'Tempo' (110 BPM). The tracks are as follows:

- 1. Melody (Green waveform, labeled '#default' and 'Dro')
- 2. Drone (Blue waveform, labeled 'Drone (+12)' and 'D')
- 3. Classic Hip Hop Remix Kit (Blue waveform, labeled 'Ultrabeat')
- 4. Classic Hip Hop Re (Blue waveform, labeled 'Classic Hip Hop Re')
- 5. Outlaw (Purple waveform, labeled 'Outla')
- 6. Indian & Middle Eastern Kit (Brown waveform, labeled 'Indian & Middle Eastern', 'In', 'Indo', 'Ind')
- 7. Indonesian Gamelan Gongs (Brown waveform, labeled 'Indo', 'Ind')
- 8. Indonesian Gamelan (Yellow waveform, labeled '#default' and 'Dro')
- 9. Inst 8 (Green waveform, labeled 'Inst 8')
- 10. EVP88 Electric Piano (Green waveform, labeled '#default')

- The melody is played by a synthetic instrument layered with a gamelan sound.
- The drone is played by an electronic drone sound.
- Since the piece was inspired by Indian Tabla playing, samples of tabla were added that accent certain beats in the snare drum part.
- Additional grooves were added to create interest in the accompaniment for certain parts of the work.
- Form delineation was done through the use of gamelan gongs.

New-Thaan
by Bob Becker
(track by Matt Jordan)

Selected Works with electronic tracks that replace acoustic accompaniment

Composer	Work	Instrumentation	Original Instrumentation
Bob Becker	New-Thaan	Snare Drum and Fixed Media (performer created)	Snare Drum and Percussion Ensemble
Paul Bissell	The Alabados Song	Marimba and Fixed Media	Marimba and Percussion Ensemble
James Oliverio	Timpani Concerto #1	8 Timpani and Fixed Media	Timpani and Orchestra
Nathan Daughtrey	Halcyon Deconstruction	Marimba and Fixed Media	Marimba and Percussion Ensemble
John Psathas	Planet Damnation	Timpani and Fixed Media	Timpani and Orchestra

Conclusion

- The categories of works presented today offer a logical progression through the performance practice of music for percussion and fixed media.
- These types of works merit further study and performance.
- There are many works that are being composed today for this medium—understanding the technology is crucial to staying current to modern trends in performance.
- Find a PDF version of this lecture at www.mattjordanpercussion.com under Clinic Info.

