Low Flutes in the Time of Locusts
Part Three: Electrickery - Amplification, Sound Processing, and Recording

In the last part of this series we take a look at the worlds of low flute playing when combined with electronics. It's a vast topic, so I'm skimming the surface with a few ideas to send you off.

The pandemic has hurled musicians fully into digital performance. You have probably already screamed this morning at some device with a voltage, so no need to scream into a pillow to let out your frustrations. Let's begin.

Getting started: I find technology fascinating (in spite of experiencing gross sexism around it). It can be daunting with poor instruction, jargon, endless options, upgrades and rude obsolescences. Many of us are self-taught, and in the immortal words of fellow flutist/collaborator Jane Rigler, it's often the school of "I-wonder-what-that-button-does". I suspect many people avoid electronics because they feel intimidated. But no question is too dumb. You're allowed to step in and make mistakes.

Allow for a slow evolution. Ask yourself - is it fun to use, and does it fit my personal sensory world? Go to Sweetwater's electronic gear site, which explains all the terms you need. Dr Google knows the answer to almost everything, and someone has struggled more than you to fix a particular problem. Investigate software and hardware that is open source, subscription-based, or simply so unique and retro that it has a loyal community.

Even though 1s and 0s are logical, technology is a wild beast, and you have to plan for technical failure. Music tech is rewarding when it works. If you want inspiration, take a look at *Sisters with Transistors*, a documentary on unsung women in electronic music.

Shanna Pranaitis has initiated her annual Sonic Immersions Workshops . The faculty teaches all things 21st Century, which includes electronics, low flutes and more.

Dogbotic.com is a fun way to approach electronics without the flute, building your own instruments, and your understanding of electronic music language.

Take a look at the diverse paths of even just a few flutist composers who invest in technology and innovation: Melody Chua, Jane Rigler, Flutronix (Nathalie Joachim and Allison Loggins-Hull), Matthias Ziegler, Anne La Berge, Rachel Beetz, and Rozalind MacPhail.

Equipment: There is so much great repertoire out there for low flutes and electronics - audiences really respond to the ambience. Even if you are not using electronic processing or accompaniment tracks, low flutes deserve amplification in venues with terrible acoustics. Amplification gives you control over the balance, benefiting the bass line of the music in an ensemble. You can re-create the performance space to your specifications through EQ and reverb.

Your microphone is like your headjoint, so find a mic you can thrive with. I use a Neumann TLM 102 for both live performances and basic home studio tracking, and it's great for any range instrument. I also use a wireless headset at other times, and it's amazing what it picks up, even on a contrabass. It's important to practice positioning your mic, because of how the pattern of sound pick-up affects your movement as a flutist, and your perception of your own sound.

Your audio interface allows for a civilized conversation between your mic/s, computer, and amplification system. I use a PreSonus AudioBox 44VSL (no longer made!), a great example of an interface with a lot of utility.

A portable sound system, like the Fender Audio Passport PA system, is great for quality control in small venues, and it's rugged and easy to use.
If you think your low flute is a big baby, so is your electronic equipment. Test your cables, batteries (carry spares), switch on and store your equipment correctly. Keep a checklist (I use Google Keep and share it). I even bring my

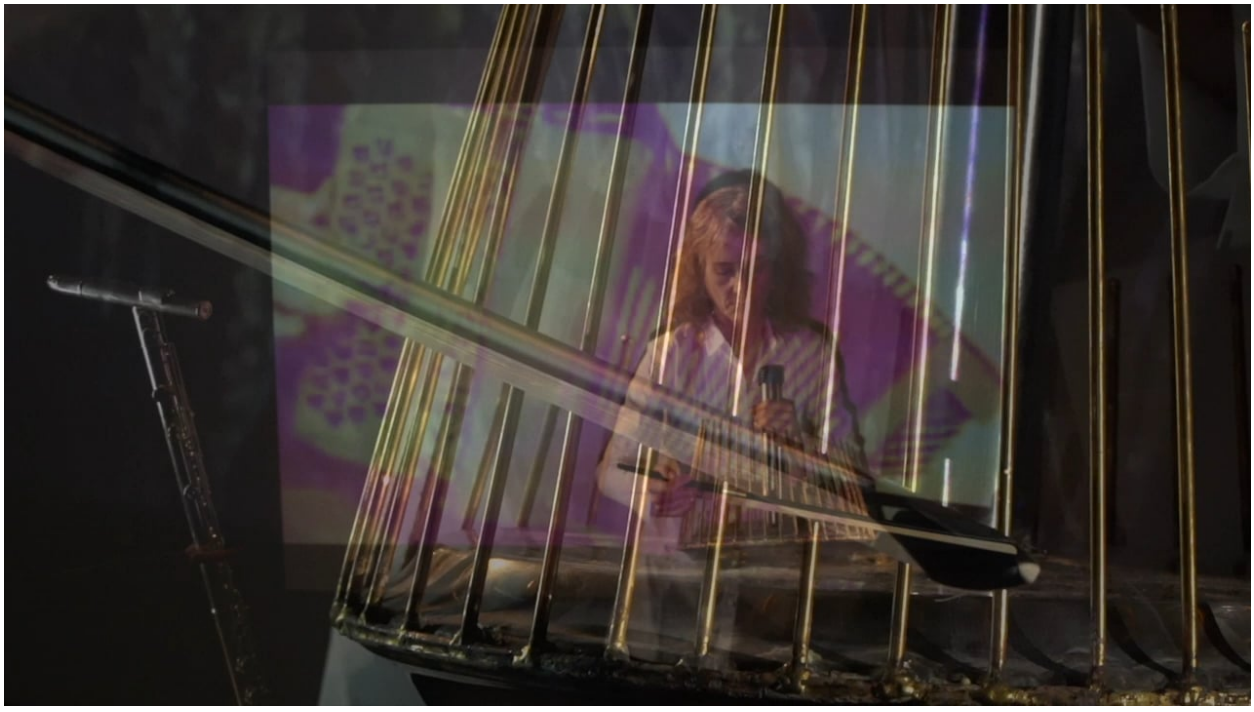
own projector now for music with video, because if anything is broken at a venue, it's going to be the projector. Don't be surprised if staff at the venue don't know their own equipment, or the state that it's in.

Allow for a proper amount of time to soundcheck (and protect that time if you're sharing the stage). Be sure the stage has proper spacing for the speakers so you don't get feedback from your mic. You get extra points if you are hefting all this equipment without injuring your precious flutist body.

Consider having communal ownership of equipment. The costs of equipment all add up, and it's nice to have a formal agreement of sharing with the right group of people.

Live Sound Processing: If you know where the undo button is on a particular program, and you don't have pressing deadlines, learning these software programs will be fun.

Many flutists use Ableton. I used Apple's Mainstage a couple of years ago for the multimedia piece I created and performed, *Box | Grown Men Sing*. It only cost $30 at the time, and back then I wasn't even sure which software I wanted to commit to learning. I have barely scratched the surface of what it can do.



Box | Grown Men Sing (2019) - trailer

Composers have been using Max for years, which enables all kinds of audio, visual, fixed and live interactions between the player and program, with infinite creativity. It's nice to have someone running the program for when you perform with it, or you can use a pedal to trigger each cue.

Some flutists use very specific technology for their evolving repertoire, for example, Kyma (which Anne LaBerge uses) and the chaosflöte (which Melody Chua has been developing).

Recording: Most of us do some basic recording at home. Low flutists find this especially useful in evaluating their sound, and how mic placement and the room itself affects the sound production. Recording will teach you how to slow down in performance, how to maximize every rest, and details like how your breath creates the phrase.

For home sessions, you can use an all-in-one unit with stereo mics like a Zoom or Tascam recorder, and transfer the sound file to your computer for editing. Or if you use software to record (with your audio interface, mic/s set up), anything from Audacity, Garageband, Logic, to Protools etc. will work well, depending on your investment in learning, upgrades, expense, and the overall utility for future projects (for example, video).

If you are recording in a dry studio or resonant venue with a sound engineer, do explore different set-ups - not just close/far mics up front, but also mics on the floor in front and behind you. You want many options in post-production, and mic placement becomes even more of a sensitive issue at the extremes of the sound spectrum. It's helpful if you can record on a floor that has early reflection to make you sound natural to yourself.

Post-session editing and sound processing: Software offers endless ways to make your recording sound like it occupies a different space-time continuum. The choices can be overwhelming, so listen to many other recordings, to live concerts, and a wide variety of genres, before you decide your overall

recording aesthetics. The rules of how things should sound have diversified or died, and it all depends on its purpose.

"Women in Parallel Empires" trailer - (2021) – created, performed, composed by flutists Tessa Brinckman and Jane Rigler. We used Ableton, Protools, Spear, Audacity, Logic Pro and Final Cut Pro to create music + video for this 24 minute "space opera", in post-humous collaboration with Cecile Chaminade's "Sérénade aux Étoiles".

If you're creating new work that uses your recording as raw material, you can process it through different programs and plug-ins. Granular synthesis programs like Soundgrain and Spear are fun programs to play with.

Creativity Exercise: If you're curious, in a rut, and not under pressure, make a 1 minute audio "postcard".

- Prepare to record with software or an external recording device. Don't forget a good pair of headphones for sound auditing and to avoid feedback.

- Record 5 separate tracks, 1 minute each. They can be anything you like - extant repertoire, improvisations, interesting flute techniques, spoken word,

sounds inside and outside your house. Don't think about it too much, just do it.

- As you record these tracks, keep notes on your various mic placements and recording conditions. Whatever you have, be open-minded about the raw materials - you can make anything sound fun, crazy or beautiful.

- When you have all 5, really listen into each track separately in your editing program. What is interesting about the sound? What are its dramatic possibilities? All kinds of sounds can tell a story.

- Process your tracks wherever you feel like it, with whatever patches, plugins, filters are available. Chop up the tracks and re-arrange them, loop some fragments or use pre-made loops. The undo button is your shameless friend.

- When you've assembled your postcard as a rough edit, mix the tracks by smoothing out the track edits with fade in/outs, experimenting with EQ, volume, and panning to give your piece dimensionality.

- Additionally you can either take one of the 5 tracks, or the mix itself, into other sound processing programs, for example, granular synthesis programs like Spear or Soundgrain. Then drop the file back into your editing program to make a final mix.

- Export and send it to a friend - encourage them to send one back to you. It's a postcard!

- Doing this experiment will really help you think about:
  – the science of sound
  – composition, even if you only play other people's work
  – sound art, interdisciplinary work, and 21st Century demands on flute players
  – being playful, deepening your connection and identity with sound
  – having the confidence to ask for what you want when performing with live electronics, and working with a sound engineer.

It's a long process, so do a little at a time, keep notes on where you are headed, and where you are stuck. Ask for help. Messing around with recording, creativity, and getting inside the interior space of your playing, is both empowering and magical.

Bio: New Zealand flutist Tessa Brinckman has been described by critics as a"flutist of chameleon-like gifts" and "virtuoso elegance" (*Gramophone*), an "excellent...flutist" (*Willamette Week*) and "highlight of Portland" (*New Music Box*) , who "play(s) her instrument with great beauty and eloquence" (*Music Matters New Zealand*) . As an interdisciplinary flutist and composer she has premiered over a hundred (and commissioned more than twenty) new works, within many classical music ensembles and concert series in the United States, South Africa, France and New Zealand. Ms. Brinckman has served on the music faculties of various Oregon universities and colleges, and now teaches workshops and masterclasses in the USA and abroad. Projects in 2021 include a collaboration+residency with flutist Jane Rigler at the University of Colorado Springs ("Re-assembled and Embodied: Flute Music by Women in Parallel Empires"); recording and composing for an upcoming solo album (New Focus Recordings) with musicians in France, New Zealand, South Africa and the USA; collaboration with animators Miles Inada and Devyn McConachie for an upcoming animation short; Bandcamp single releases, international concert collaborations and video with her flute and percussion duo, Caballito Negro. www.tessabrinckman.com