DR BRIAN BRIDGES

BD.BRIDGES@ULSTER.AC.UK

MUS302 WEEK 11
FROM DRONES AND NOISE(S) TO GRAINS AND GLITCH/FROM NOISE TO SEQUENCE AND BACK!

PRECURSOR: SOUND AND CATEGORISATION

- What are the various ways you could categorise this sound recording?

PRECURSOR: SOUND AND CATEGORISATION

- What are the various ways you could categorise this sound recording?

CATEGORISING SOUND

Luigi Russolo (1913)

(1) Roars/Claps/Dripping Water/Bellows (energetic transients? TBH I'm at a loss with this category!)

(2) Whistles/snores/snorts (human noises, with harmonic content?)

(3) Whispers, mutterings, grumbles, grunts, gurgles (transient noises?)

(4) Shrill sounds, cracks, buzzings, jingles, shuffles (high freqeuncy sounds from small sounding objects/small efforts?)

(5) Percussive noises using various struck materials (sound gestures which tell us a lot about their materials?)

(6) Animal and human voices (source-recognition becoming a factor?)

CATEGORISING SOUND

Based on timbral theories?

(1) High versus low frequency? Resonant peaks or bell-like sounds? (harmonics/partials ‘ringing out’?)

(2) Synchronised versus ‘loose’ sound–gesture combinations

(3) Obvious transient detail versus smooth drones?

CATEGORISING SOUND

- By Material?
- (Wood/Metal/Water/Plastic)
- By form of articulation (struck, rubbed, plucked, bowed, scratched)?
- By Source? (Human, animal, nature, technology, with subdivisions)?
- By Medium? (e.g. the sound of old records, old tape recordings, low-fi digital, transistor radio, old speaker, etc.)
- By acoustic space or location? By social space/activity?
- For more ideas, check out *Sonic Experience* (Augoyard and Torgue, 2005)

MODELS OF SOUND STRUCTURE AND MUSIC

- We're going to discuss the sonic/structural implications of some of our new ideas
- In other words, how do these new ideas 'translate' into basic configurations of sound?

TRUAX: SOUNDSCAPE COMPOSITION

TRUAX: SOUNDSCAPE COMPOSITION

- Soundscape composition - composing sonic landscapes - movement which grew out of ‘acoustic ecology’ movement

TRUAX: SOUNDSCAPE COMPOSITION

- Soundscape composition - composing sonic landscapes - movement which grew out of ‘acoustic ecology’ movement
- Issues for composition which introduces environmental sound: syntactic organisation, contextually based meaning, and resultant listening patterns...do these materials work when out of context?

TRUAX: SOUNDSCAPE COMPOSITION

- Soundscape composition - composing sonic landscapes - movement which grew out of ‘acoustic ecology’ movement
- Issues for composition which introduces environmental sound: syntactic organisation, contextually based meaning, and resultant listening patterns...do these materials work when out of context?
- Can you introduce these materials without altering your approach to composition? Or is a preferable strategy a ‘bottom-up’ rather than ‘top-down approach’

EXAMPLES FROM BARRY TRUAX

- *Wings of Nike* (1987)
- Similar process to Riverrun (from last class) but this time rather than synthesising sound from scratch it is used as a process/effect on previously-recorded audio (granulation)
- Can you describe the different articulations you hear?

EXAMPLES FROM BARRY TRUAX

- *Wings of Nike* (1987)
- Similar process to Riverrun (from last class) but this time rather than synthesising sound from scratch it is used as a process/effect on previously-recorded audio (granulation)
- Can you describe the different articulations you hear?

DEMERS AND DRONES

- Immersive environments and ‘maximal’ objects
- Long durations and loud sounds create sense of totality/ immersion
- Extreme materials test limits of concentration and perception of shapes
- Although materials may be static, our perception resists this: good evolutionary reasons for searching for novelty in otherwise static environment Example: Eliane Radigue (1998)

DEMERS AND DRONES

- Immersive environments and ‘maximal’ objects
- Long durations and loud sounds create sense of totality/ immersion
- Extreme materials test limits of concentration and perception of shapes
- Although materials may be static, our perception resists this: good evolutionary reasons for searching for novelty in otherwise static environment Example: Eliane Radigue (1998)

PRACTITIONER: ELIANE RADIGUE

- French electronic composer of drone-based music (born 1932)
- Did some early work in Pierre Schaeffer's studio but her work evolved in different direction
- Developed drone-based music using 1960s/1970s synthesiser technology (ARP, Buchla synths), initially at NYU in New York
- Work became influenced by Tibetan Buddhism from an early stage (perhaps appropriately enough, given her aesthetic)
- http://vimeo.com/8983993 for documentary/portrait of working methods

FOCUS ON DRONES

- What's in a drone? What does (or can) it represent in music/sound design?
- What happens to our perceptual engagement when we are confronted with a drone?
- Bregman (1990) talks about an 'old-plus-new' rule in hearing: we assess sounds for continuity and novelty and try to assign them separately
- Over longer periods, may be greater focus on smaller details, tendency towards perceptual decomposition (treat certain small details as new 'auditory objects', even to the point of their being 'false positives'
- In addition, if sound events evolve or transition slowly over time, outside the short 'window' offered by our short-term memory, we may experience a sort of 'memory sabotage' (Snyder, 2000, p.235).
- Common emotional response: calm/meditative state, different sense of temporal progression (different subjective sense of time)

LISTENING TO DRONES

- See Spotify playlist: drones noises grains glitch
- Artists: Phil Niblock, James Tenney, Eliane Radigue, Glenn Branca (some of these artists may dispute the tag ‘drone music’, but they all work with various approaches of extended temporal structures or perceptions of unified sound masses)

CREATING DRONES

- Slow recordings down (e.g. pitch-shift by slowing playback–– ‘Change Speed’ in Audacity–– or time-stretching without changing pitch––best done in Logic, if at all)
- Edit out attack transient of sound which has a long resonant decay
- Slowly-evolving synthesiser sounds (e.g. with gradual attack and envelope changing parameter which affects spectrum)
- Apply reverb (*a la* Stockhausen)––be careful as this also signals extension in space as well as time
- Use granular processing (we’ll discuss this in detail later on)

OPPOSING DRONES: TRANSIENTS, GRAINS AND GLITCHES

OPPOSING DRONES: TRANSIENTS, GRAINS AND GLITCHES

- The opposite of a drone is a transient sound: any sudden change/ discontinuity in a signal

OPPOSING DRONES: TRANSIENTS, GRAINS AND GLITCHES

- The opposite of a drone is a transient sound: any sudden change/ discontinuity in a signal
- These transient sounds can take various forms: the renewed attack of an instrumental tone (such as bowing action) or digital artefacts such as grains and glitches

OPPOSING DRONES: TRANSIENTS, GRAINS AND GLITCHES

- The opposite of a drone is a transient sound: any sudden change/ discontinuity in a signal
- These transient sounds can take various forms: the renewed attack of an instrumental tone (such as bowing action) or digital artefacts such as grains and glitches
- Q: What is the effect of this type of material in perception?

OPPOSING DRONES: TRANSIENTS, GRAINS AND GLITCHES

- The opposite of a drone is a transient sound: any sudden change/ discontinuity in a signal
- These transient sounds can take various forms: the renewed attack of an instrumental tone (such as bowing action) or digital artefacts such as grains and glitches
- Q: What is the effect of this type of material in perception?
- A1: Breaks continuity, focuses on the momentary change in texture

OPPOSING DRONES: TRANSIENTS, GRAINS AND GLITCHES

- The opposite of a drone is a transient sound: any sudden change/ discontinuity in a signal
- These transient sounds can take various forms: the renewed attack of an instrumental tone (such as bowing action) or digital artefacts such as grains and glitches
- Q: What is the effect of this type of material in perception?
- A1: Breaks continuity, focuses on the momentary change in texture
- A2: Nonetheless, for all of its ‘surface’ difference from continuous drones, it may perform a similar role in perception: drawing attention to smaller-scale details

LISTENING TO TRANSIENTS

- See Spotify playlist: MUS302 lecture 5
- Artists: Alva Noto, Oval

DRONES AND NOISE

DRONES AND NOISE

- The term drone is often reserved for materials which comprise extended drones which have a preponderance of harmonic components

DRONES AND NOISE

- The term drone is often reserved for materials which comprise extended drones which have a preponderance of harmonic components
- Noise is often reserved for the use of extended sounds which do not possess simple harmonic spectra (i.e. tend towards denser bands of frequencies rather than single-frequency components)

DRONES AND NOISE

- The term drone is often reserved for materials which comprise extended drones which have a preponderance of harmonic components
- Noise is often reserved for the use of extended sounds which do not possess simple harmonic spectra (i.e. tend towards denser bands of frequencies rather than single-frequency components)
- Drone-based sounds can be directed towards becoming noise-based through the application of distortion effects or the layering of a number of drones with very small changes in pitch (resulting in clusters or noise-bands)

DRONES AND NOISE

- The term drone is often reserved for materials which comprise extended drones which have a preponderance of harmonic components
- Noise is often reserved for the use of extended sounds which do not possess simple harmonic spectra (i.e. tend towards denser bands of frequencies rather than single-frequency components)
- Drone-based sounds can be directed towards becoming noise-based through the application of distortion effects or the layering of a number of drones with very small changes in pitch (resulting in clusters or noise-bands)
- Like harmonic drones, extended noise-based drones can contribute to impressions of envelopment and stasis

DRONES AND NOISE

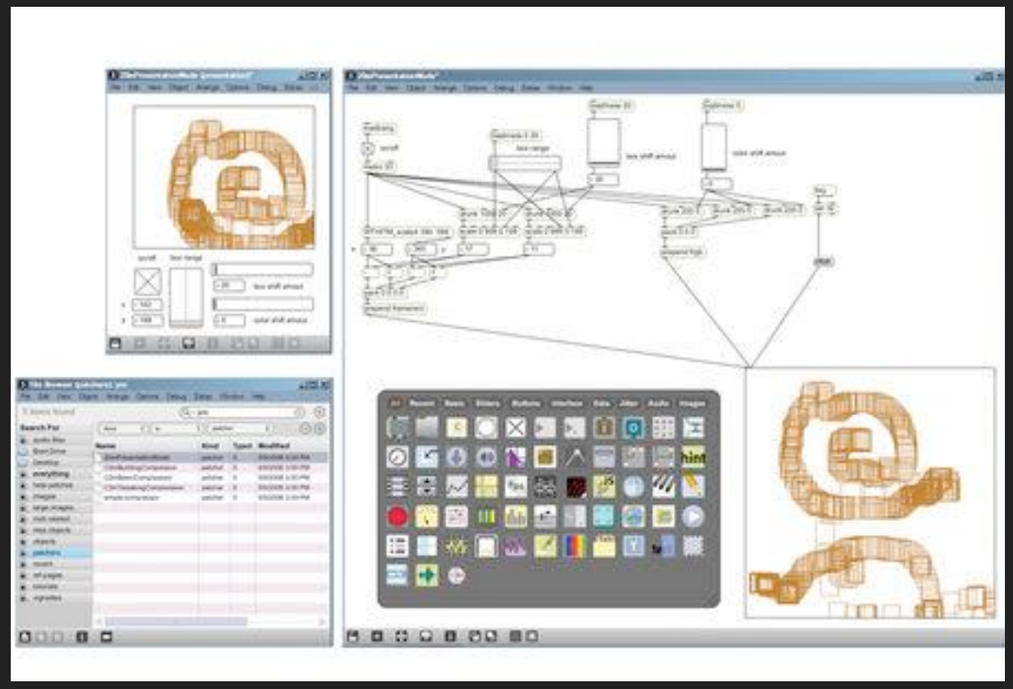
- The term drone is often reserved for materials which comprise extended drones which have a preponderance of harmonic components
- Noise is often reserved for the use of extended sounds which do not possess simple harmonic spectra (i.e. tend towards denser bands of frequencies rather than single-frequency components)
- Drone-based sounds can be directed towards becoming noise-based through the application of distortion effects or the layering of a number of drones with very small changes in pitch (resulting in clusters or noise-bands)
- Like harmonic drones, extended noise-based drones can contribute to impressions of envelopment and stasis
- Abrasive noise-based drones can evoke emotional responses such as invigoration and/or threat

LISTENING TO NOISE

- See Spotify playlist: MUS302 drones noises grains glitch
- Artists: Glenn Branca, Merzbow...even Lou Reed!

INTERLUDE: SOUND DESIGN TECHNOLOGIES ABOUT MAX

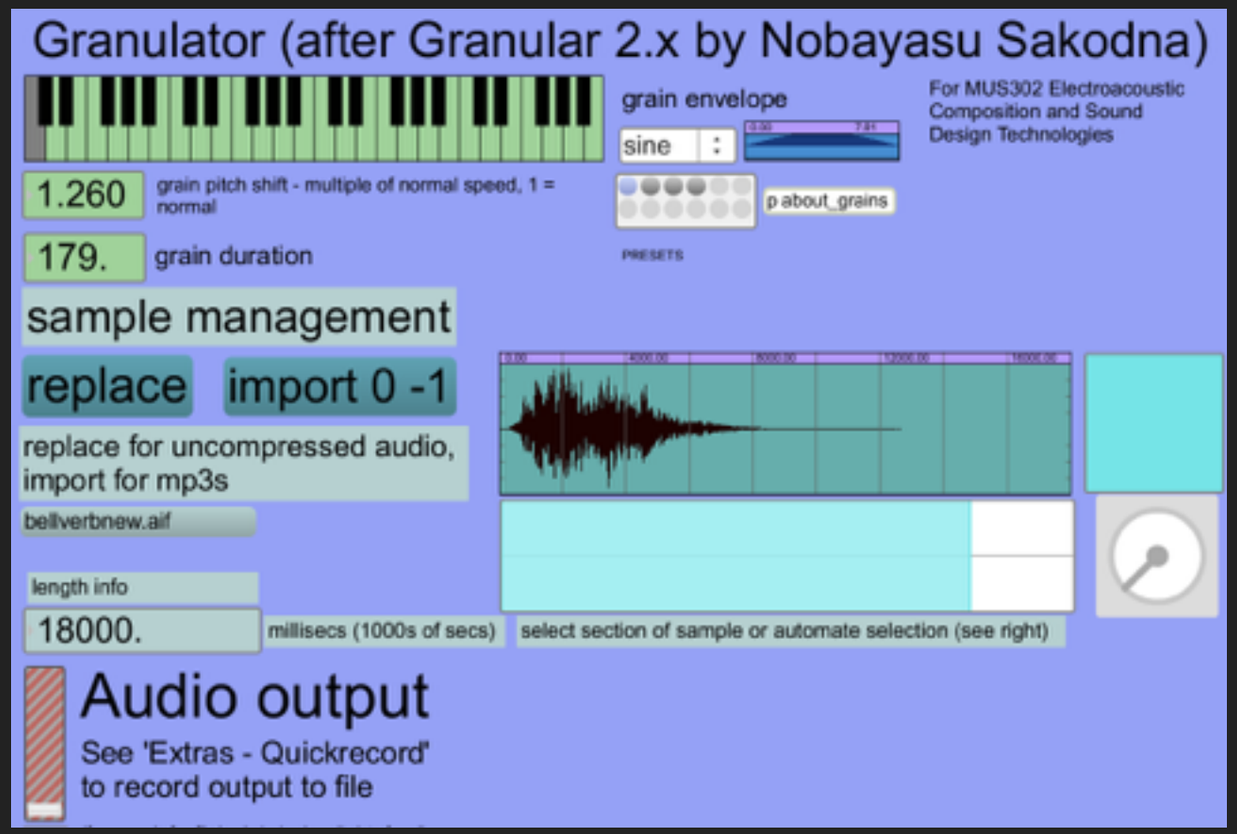
- Max is a graphic programming language for the creation of computer-based tools for digital music and more general digital media/arts
- It is based around the idea of connecting graphic boxes on-screen
- It is frequently used as a creative tool by more experimental electronic/ electroacoustic composers and sound artists because it allows them to create their own bespoke systems for sound generation and processing



- CT: You may have met it previously in Interactive Systems 1 earlier in second year
- BMus: You may (should!) meet it again in Interactive Systems in third year

TOOLS FOR GENERATING DRONES AND GLITCHES

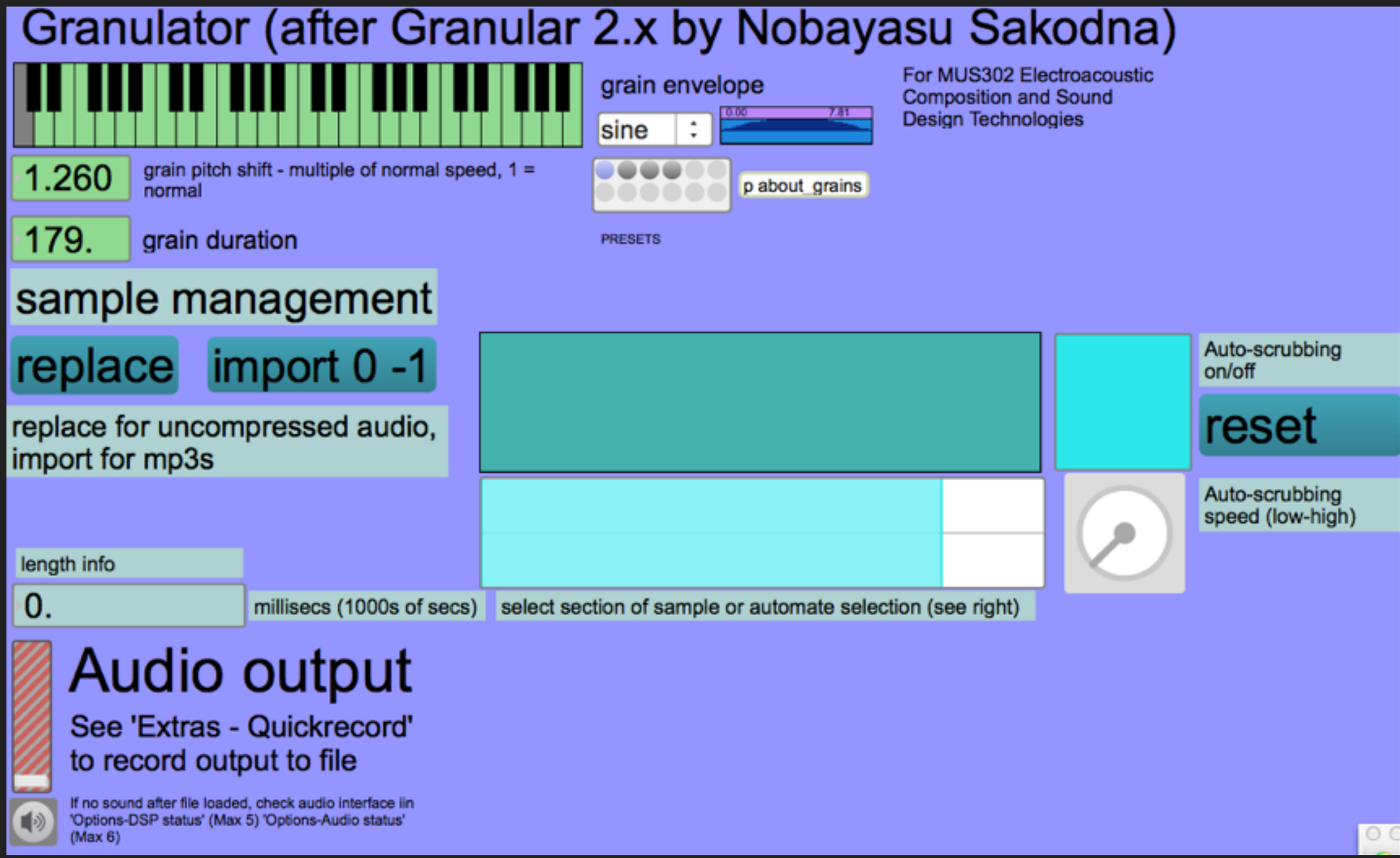
- I have made a version of a granular soundfile processor for you to use in your compositions
- This processor is made in the Max interactive systems environment
- However, you do not need to know Max to use it: it will work in a ‘standalone’ sense if you follow my instructions...load samples, play with it and use the menu item Extras=>Quickrecord to output a file



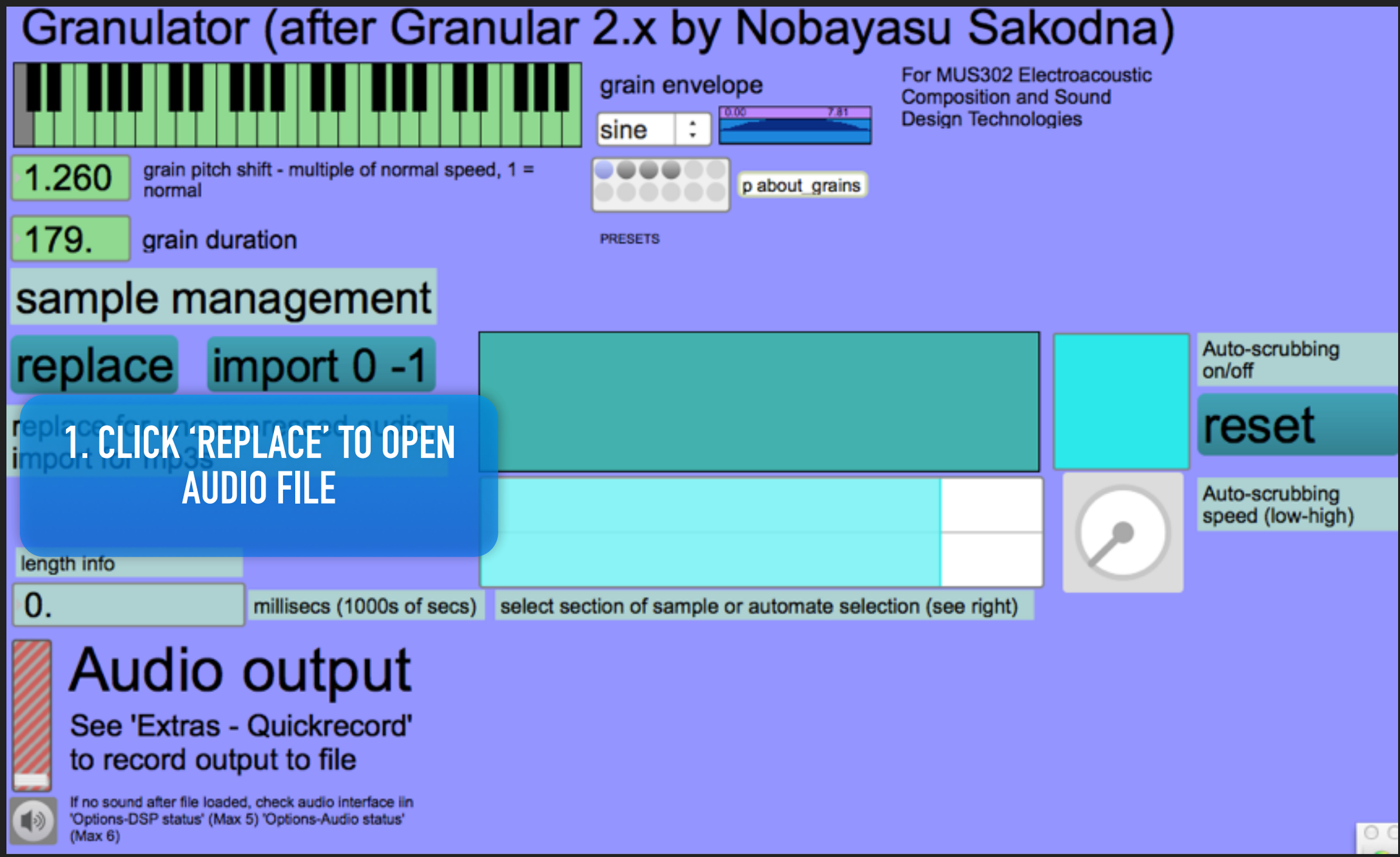
REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)

- Instructions: this patch (application) needs Cycling 74's Max to run. Your best option is to run this in the lab, where Max is installed. (There is a 30-day free trial available from www.cycling74.com, which you can download if you wish to run this at home...however, you may wish to use the free trial for Max-related modules (Interactive Systems/Interactive Music Systems)
- In the OS X Finder, open Max in applications, then browse to the location of the simplegranular2.maxpat and open.

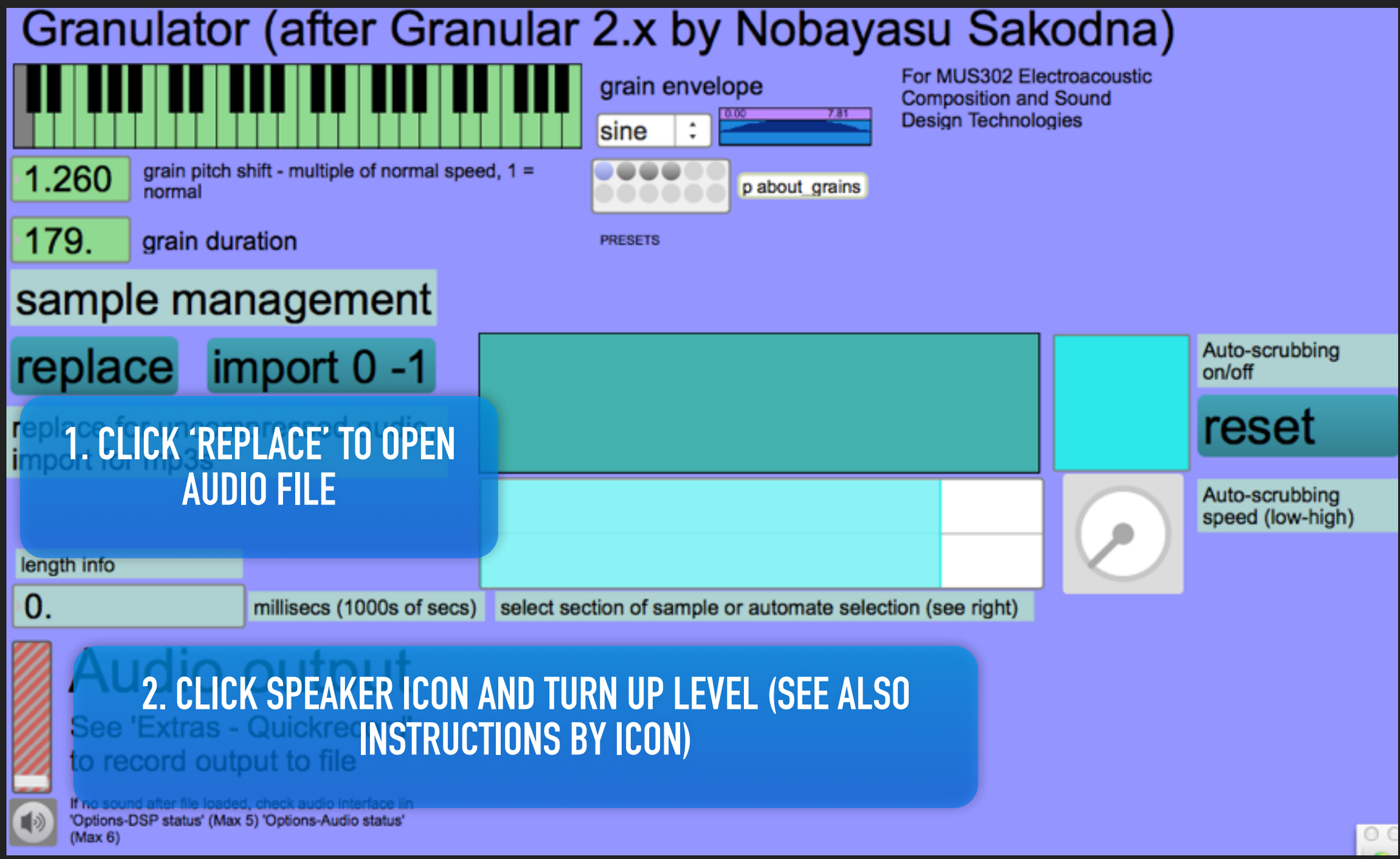
REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)



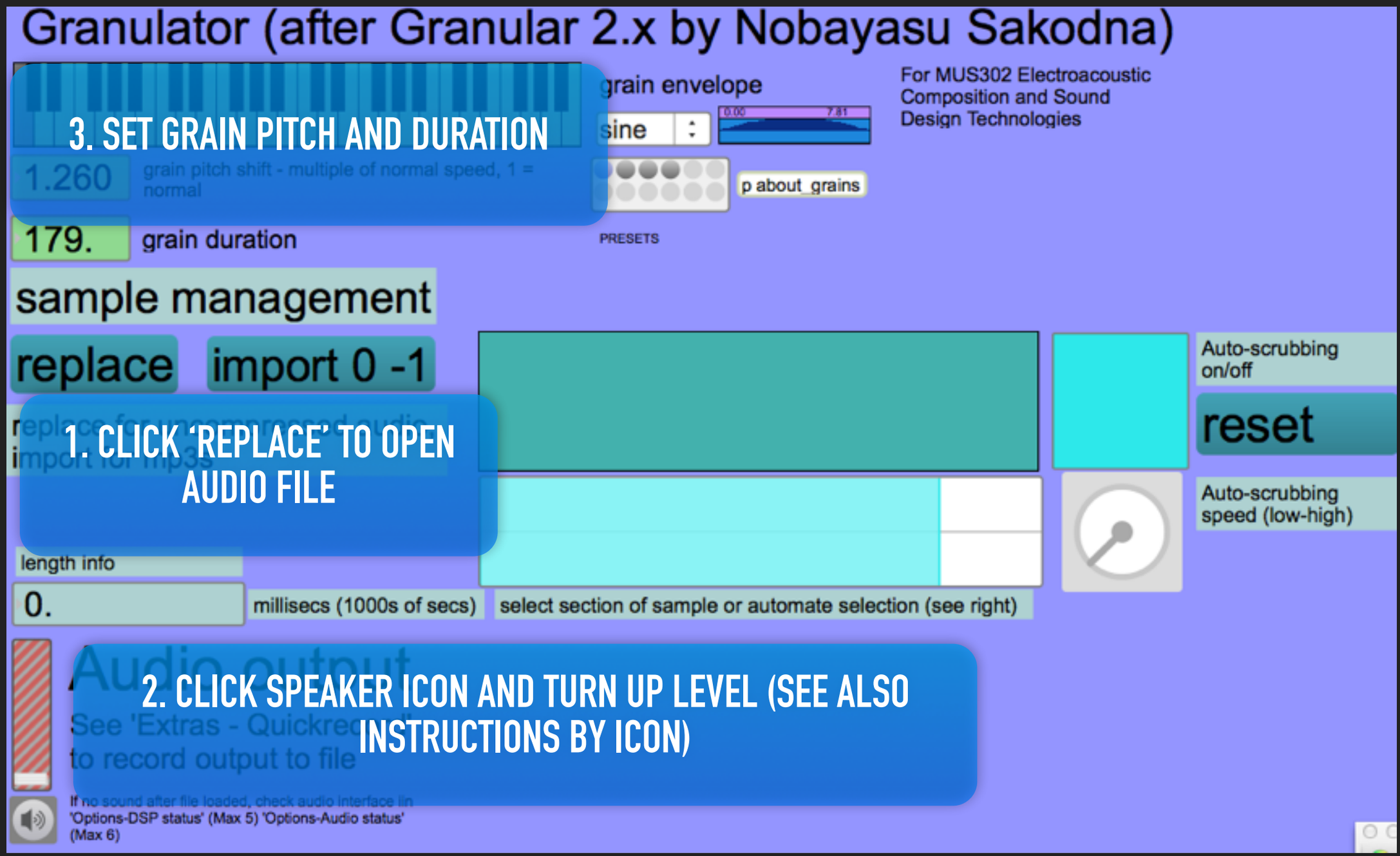
REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)



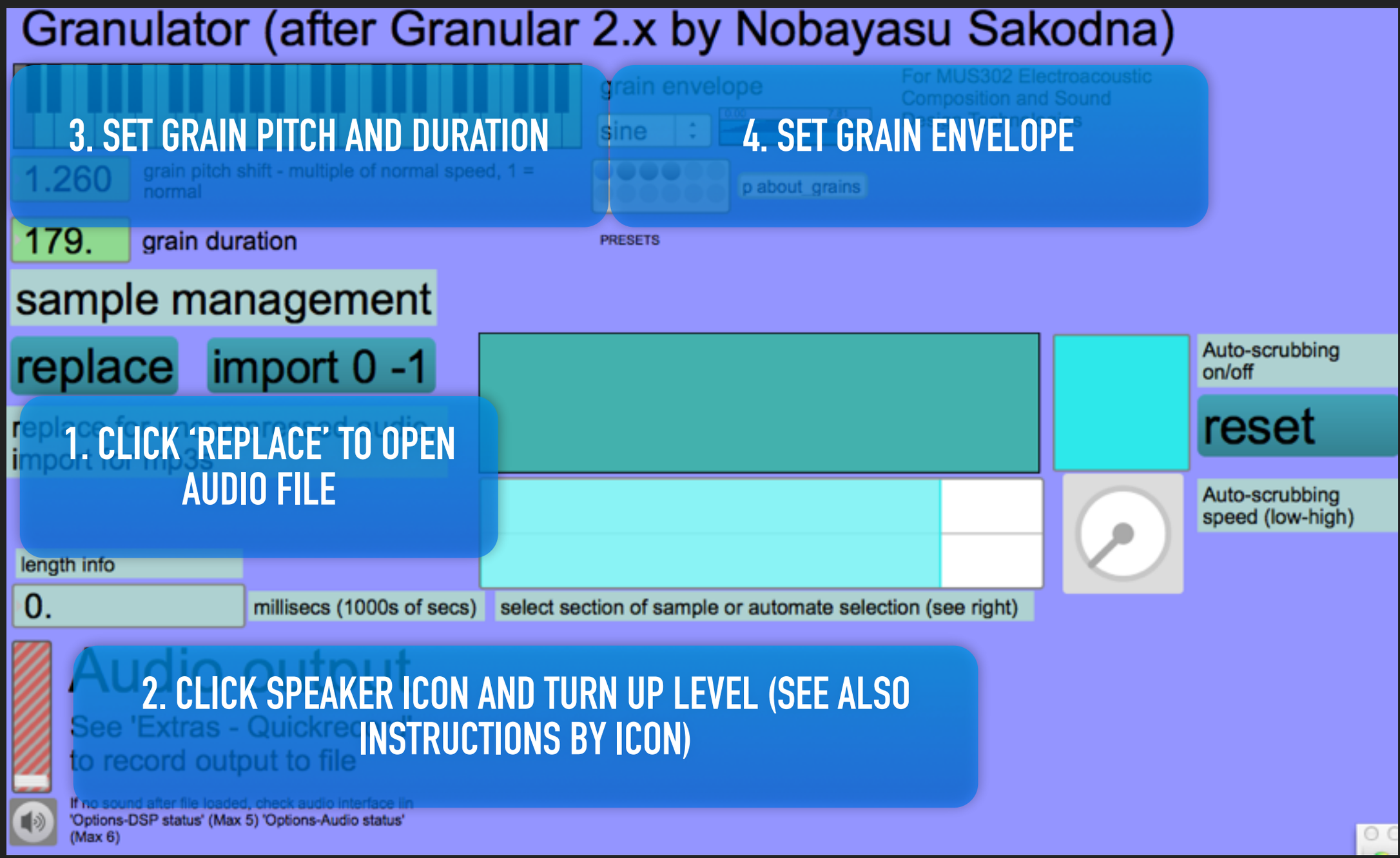
REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)



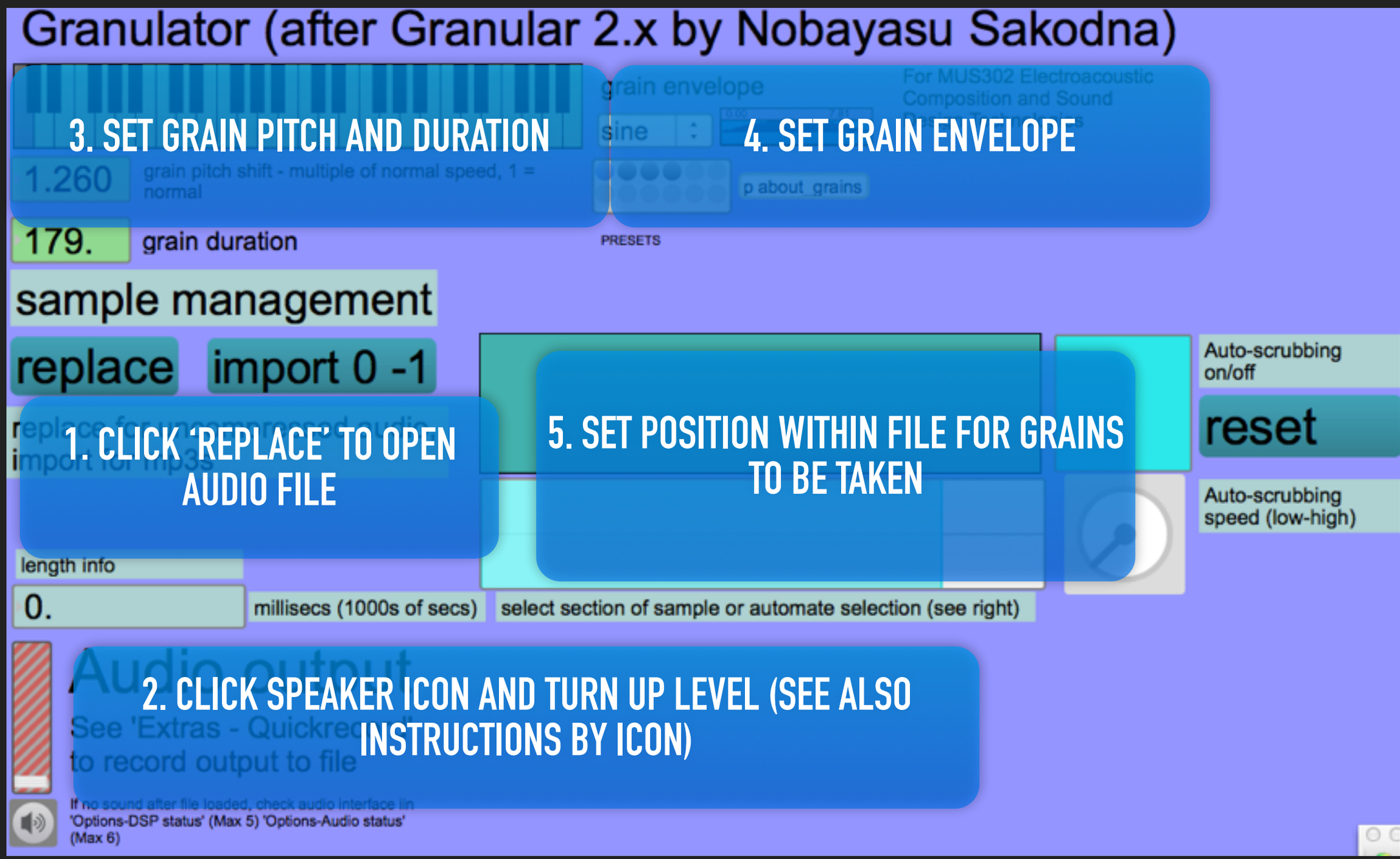
REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)



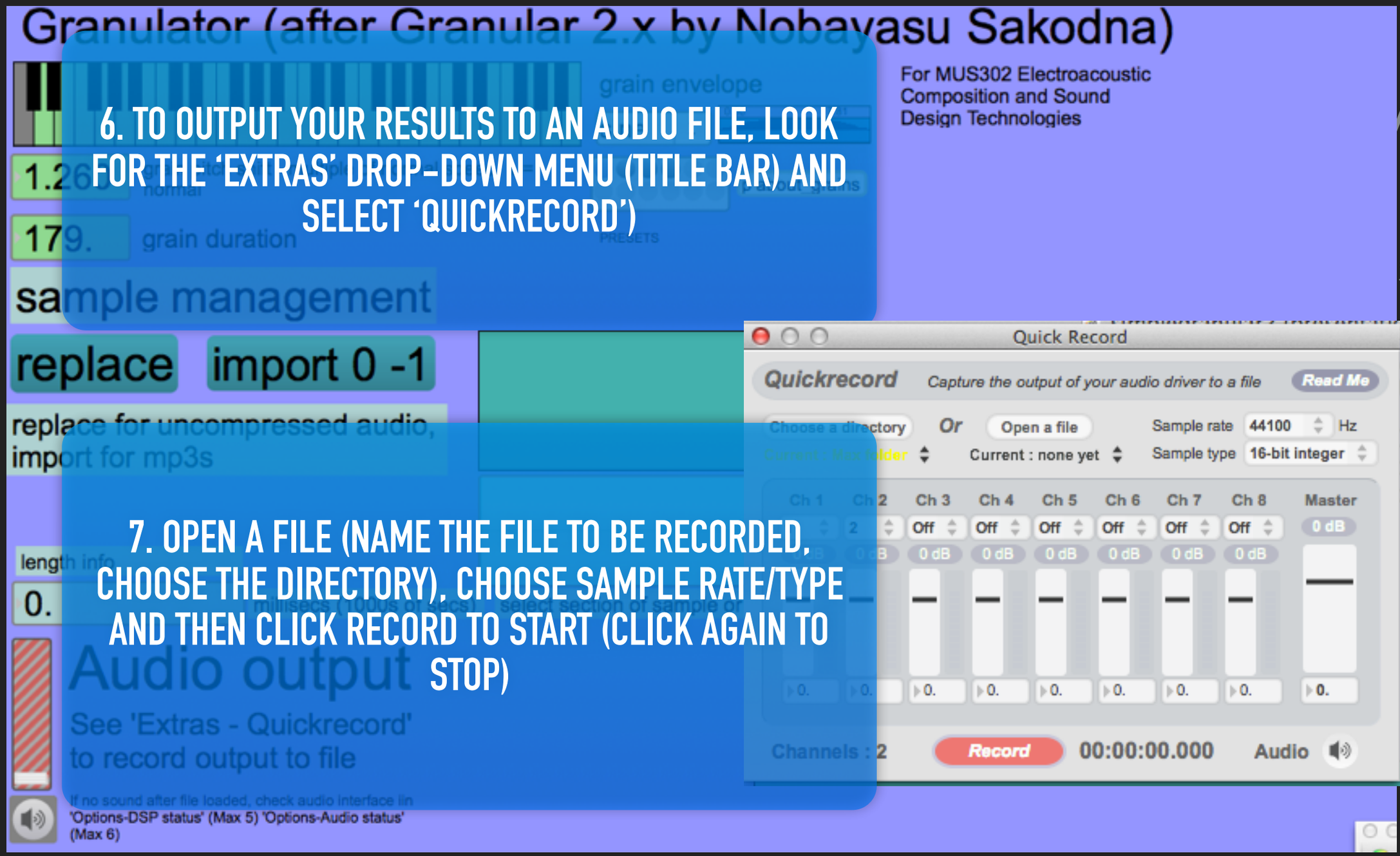
REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)



REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)



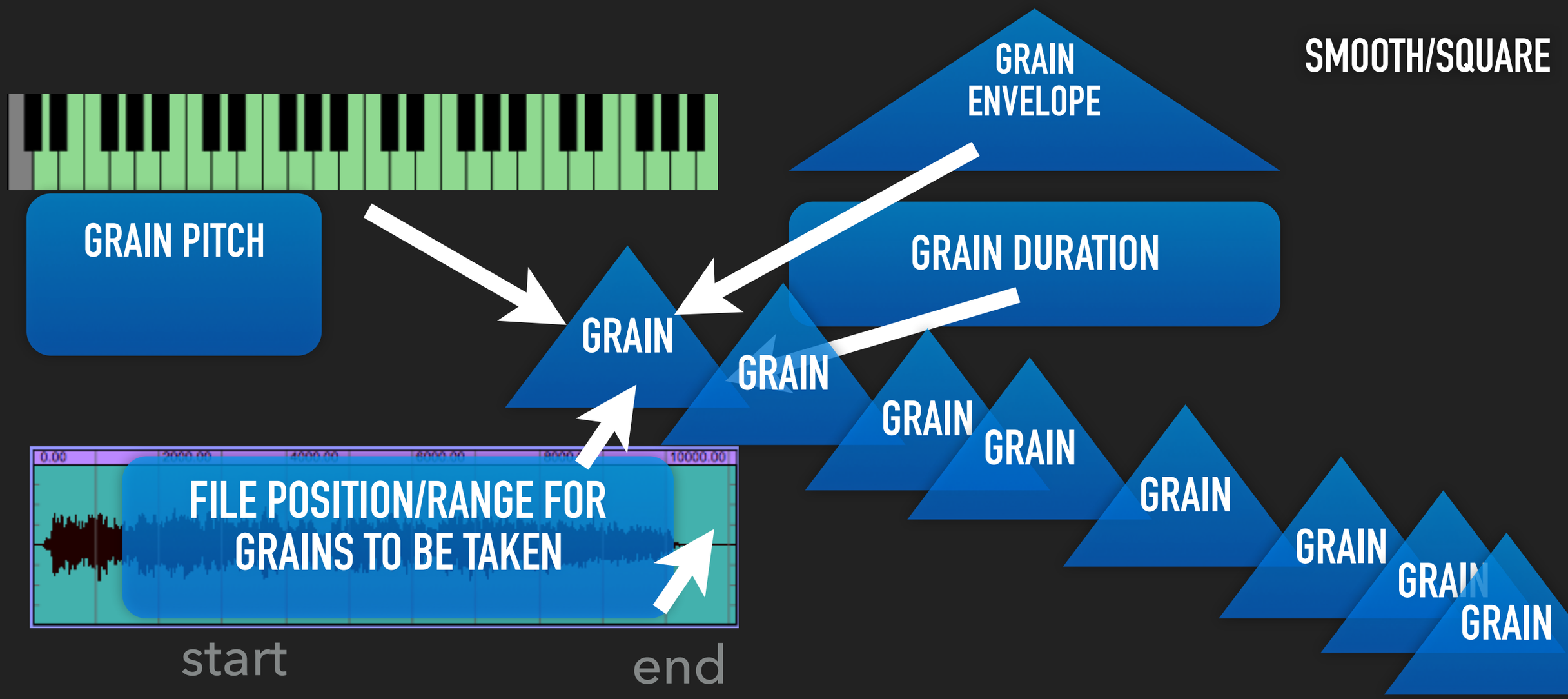
REVIEW: SIMPLE GRANULAR PATCH (GRANULATOR)



6. TO OUTPUT YOUR RESULTS TO AN AUDIO FILE, LOOK FOR THE 'EXTRAS' DROP-DOWN MENU (TITLE BAR) AND SELECT 'QUICKRECORD')

7. OPEN A FILE (NAME THE FILE TO BE RECORDED, CHOOSE THE DIRECTORY), CHOOSE SAMPLE RATE/TYPE AND THEN CLICK RECORD TO START (CLICK AGAIN TO STOP)

REVIEW: PARAMETERS AND KEY STRUCTURES OF SIMPLEGRANULAR2



PSYCHEDELIA AND TECHNO—UTOPIAN VISIONS IN ELECTRONIC MUSIC

SYNTHESISER AS SCIENCE-FICTIONAL/ POST-HUMAN SIGNIFIER?

PSYCHEDELIA AND TECHNO—UTOPIAN VISIONS IN ELECTRONIC MUSIC

- *Zero Time* (1971) Tonto's Expanding Headband https://youtu.be/w4llwrPziqk?list=PL6A56798EC9ABABDE | https://youtu.be/Vve8aYZXjbY
- TONTO is an acronym for "The Original New Timbral Orchestra," the first (and apparently still the largest) multitimbral polyphonic analog synthesizer in the world, designed and constructed over several years by Malcolm Cecil.
- TONTO started as a Moog modular synthesizer Series III owned by record producer Robert Margouleff. Later a second Moog III was added, then four Oberheim SEMs, two ARP 2600s, modules from Serge with Moog-like panels, EMS, Roland, Yamaha, etc. plus several custom modules designed by Serge Tcherepnin and Cecil himself - who has an electrical engineering background.
- Malcolm Cecil: "I wanted to create an instrument that would be the first multitimbral polyphonic synthesizer. Multitimbral polyphony is different than the type of polyphony provided by most of today's synthesizers, on which you turn to a string patch and everything under your fingers is strings. In my book 'multitimbral' means each note you play has a different tone quality, as if the notes come from separate instruments. I wanted to be able to play live multitimbral polyphonic music using as many fingers and feet as I had.
- http://www.synthmuseum.com/tonto/index.html

SYNTHESISER AS SCIENCE-FICTIONAL/ POST-HUMAN SIGNIFIER?

(BEYOND) PSYCHEDELIA AND TECHNO—UTOPIAN VISIONS IN ELECTRONIC MUSIC

THE SEQUENCER AS SIGNIFIER OF MECHANICAL/INDUSTRIAL PROCESSES?

(BEYOND) PSYCHEDELIA AND TECHNO—UTOPIAN VISIONS IN ELECTRONIC MUSIC

(BEYOND) PSYCHEDELIA AND TECHNO—UTOPIAN VISIONS IN ELECTRONIC MUSIC

(BEYOND) PSYCHEDELIA AND TECHNO—UTOPIAN VISIONS IN ELECTRONIC MUSIC

- 'Krautrock'/'Cosmic Music'…Emerging from the West German cities of Munich, Hamburg and Cologne during the 'golden' post-psychedelic period from 1969-75, a succession of musicians, artists, collectives and groups created some of the most incredible, unearthly, free and genuinely experimental music of the past 50 years. (FACT Magazine: http://www.factmag.com/2013/09/15/20-best-krautrock-records-ever-made/)

- Bands such as Neu!, Can, Cluster, Faust, and even early Kraftwerk and Tangerine Dream were all informed by experimentalism in both contemporary composition (e.g. Stockhausen) and American and other psychedelia and rock experimentation, and were facilitated by the commercialisation of synthesizer technologies and ready availability of recording technologies (tape machines)

- This postwar musical generation were emerging from a dark period of history (with the Soviet satellite state of East Germany, or the 'German Democratic Republic', an ever-present reminder), but they were now part of a prosperous society which had experienced significant improvement in living standards (were they a domesticated counterculture?)

- From earlier, darker psychedelic experimentation to 'domesticated modernity' (or what musicologist Ian Biddle has termed the 'electronic sublime' as counterpoint to ego–driven rock) via the vocoder on Kraftwerk's Autobahn and the increasing use of the motoric regularity of the sequencer in a variety of other later 1970s electronic records

- 'Krautrock' at its most characteristic: driving rhythms with some live playing of vibrant, slightly rocky, broad–brush sawtooth–wave analogue synths (or guitars)…the transition to sequencers and vocoders allowed Kraftwerk to later play with the 'electronic uncanny' and the fear of workers being replaced by automation

‘KRAUTROCK’: SEQUENCE-DRIVEN ELECTRONIC ROCK IN THE 1970S

CLUSTER AND BRIAN ENO

LEGENDARY ‘KRAUTROCK’ PRODUCER CONNY PLANK

FROM ‘KRAUTROCK’ TO ELECTRO: A BRIEF FAMILY TREE

Noise and psychedelia… psychedelia meets musique concrète techniques

1971

Domesticated modernity and ‘electronic sublime’ proto-electro… sequencer and vocoders

1974

Disco/proto-electro (complete with 8 minute 12 inch and unofficial 15 minute remix version)

1977

MUSIC TECHNOLOGY AS MEME C.2017

EXPLORATORY USE OF MUSIC TECHNOLOGY AS FRACTIOUS ALLIANCE

WHERE DO WE SITUATE OURSELVES? WHO DO WE ALLY WITH?

EXPERIMENT & LISTEN!

DUB=>DUBSTEP (JAMAICA=>UK => WORLD)

INDUSTRIAL MUSIC (BRITAIN, GERMANY, JAPAN, EASTERN EUROPE ETC.)

POP/ROCK AND DERIVATIVES

CONCEPTUALISM (ART WORLD)

ELECTROACOUSTIC COMPOSITION

(ACADEMIA: CENTRAL ENGLAND AND FRANCE TO THE REST OF THE WORLD)

BROADCAST MEDIA

VARIOUS DANCE MUSIC => GLITCH

SOUNDTRACK MUSIC

COMPUTER MUSIC
(ACADEMIA: NORTH AMERICA)
AMBIENT MUSIC
('WESTERN' – INDUSTRIALISED – 'WORLD')

SOUND ART AND THE SOUNDSCAPE
(CANADA TO 'WORLD', 'ART WORLD')

SOME BASIC SOUND–STRUCTURES IN ELECTRONIC MUSIC

STREAMS OF SOUNDS

SOUNDS WHICH 'WANT TO GO SOMEWHERE'

MODULATION RATE

=WOBBLE TO WARP

NOISE

HOLLOW HARMONIC TONE (SQUARE WAVE)

SAWTOOTH WAVE

RICH HARMONIC TONE

SMOOTH, PURE TONE (SINUSOIDAL WAVE)

SOUNDS WITH ASSOCIATIONS/ SOUNDS YOU KNOW

CONTOURS

GRAINS

SOUNDS WHICH ARE 'JUST THEMSELVES'

SOME BASIC SOUND–STRUCTURES IN ELECTRONIC MUSIC

STREAMS OF SOUNDS

SOUNDS WHICH 'WANT TO GO SOMEWHERE'

MODULATION RATE

=WOBBLE TO WARP

NOISE

HOLLOW HARMONIC TONE (SQUARE WAVE)

SAWTOOTH WAVE

RICH HARMONIC TONE

SMOOTH, PURE TONE (SINUSOIDAL WAVE)

SOUNDS WITH ASSOCIATIONS/ SOUNDS YOU KNOW

CONTOURS

GRAINS

SOUNDS WHICH ARE 'JUST THEMSELVES'

NOW, FOR SOME FEEDBACK ON YOUR COMPOSITIONS

ADDITIONAL REFERENCES/FURTHER READING

- Kelly, C. 2010. *Cracked Media.* Cambridge, Mass.:MIT Press (in library)
- ...and if you didn't read them for a previous class:
- Cascone, K. 2000. The Aesthetics of Failure: "Post-Digital" Tendencies in Contemporary Computer Music. at: http://www.ccapitalia.net/reso/articulos/cascone/aesthetics_failure.htm
- Demers, J. 2010. *Listening Through the Noise* New York: OUP USA, Chapter 4. (In library: ML1380 D45)
- Listening: http://open.spotify.com/user/impulseresponse/playlist/3A5u4kB3HSKl5uUw5dT9kO or spotify:user:impulseresponse:playlist:3A5u4kB3HSKl5uUw5dT9kO
- Also: Snyder, B. 2000. Music and Memory: an Introduction. Cambridge, Mass.: MIT Press (in library)