Unmute

for laptop ensemble

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Flannery Cunningham

Variable length (usually 6-10 min)

3 or more players

Equipment:

For each player:

- Laptop running Max/MSP (available at https://cycling74.com/downloads; 30-day free trial and free to run afterwards, though patch edits may not be saved after that) and FaceOSC (open source, available at https://github.com/kylemcdonald/ofxFaceTracker/releases)
- If laptop does not have a built-in webcam, an external webcam
- A Leap Motion Controller (https://www.leapmotion.com/where-to-buy/global/, $89.95 as of October 2019). If this is not available or cost is prohibitive, the Max patch includes an onscreen slider to emulate the control of the Leap. Better yet, to preserve the gestural element of the performance,an alternative controller (MIDI or HID) that sends continuous values along an axis may also be employed. (For assistance in modifying the patch for this, please contact the composer.)
- A speaker for each player (including an audio interface and cabling or a DI box for headphone jack output, as necessary). If a sufficient number of speakers are not available, each player's output may instead be run into a mixer and panned to approximate his/her/their position onstage, with output from the mixer to stereo house speakers.

Composer's Notes:

I have always found singing in choirs a deeply poignant, community-building experience. For me, there's something uniquely joyful about joining one's voice with others in a collective sound created by instruments housed in their users' bodies. But of course not everyone has a voice that can sing, or a voice that they feel comfortable using in performance. *Unmute*, then began as a challenge to myself: could I write a "voiceless" choral piece that would replicate at least something of the shared bodily experience of singing together, and thus open such an experience to people for whom it may have been closed before?

I'm not sure that I've entirely succeeded, but at its best I think the instrument I have built allows for a satisfying gestural control that may foster the kind of musical experience I'm after. Using facial mapping and tracking, the electronics for *Unmute* determine the vowel ("ah," "ee," or "oo") that a player is performing and use that in combination with a selected scale degree to control triggering of sound files. Hand motions performed above a Leap motion sensor provide control of dynamics (through volume as controlled by vertical movement) and timbre (through an amplitude modulation controlled with horizontal movement).

For performances presented by musicians who can and are willing to sing, bodily voices may also creep back into the work. Indeed, I imagine *Unmute* as providing an augmentation rather than replacement for a sung choral experience and as (hopefully) bringing that experience to a broadened array of sound-makers. Let's sing (or "sing") together.

Performance Notes:

Instructions for setting up FaceOSC and the Max patch are described in a read-me file that accompanies the patch.

Each player has a bank of samples of different vowels "sung" on different pitches. Three vowels are used: "ee," "oo," and "ah." At any point in the piece, each of these vowels are available on five different pitches, and this five-pitch set changes over the course of the work. (The four sets may be accessed with keys 6-9 on the keyboard.) I'll refer to the number of each pitch in the current set as its scale degree.

The scale degree number is controlled by pressing keys 1-5 on the keyboard. The vowel is controlled by facial tracking via the webcam. When a player's mouth is closed, no sample will sound when she presses a scale degree number. If however, she presses a scale degree number and then opens her mouth, the system will attempt to determine which vowel she is "singing" by tracking her mouth width and height and eyebrow height. (Instructions for adjusting the thresholds for these tracked values are given in the patch read-me file.) The scale degree number and vowel number (1 for "ee," 2 for "oo," 3 for "ah," and 0 for no vowel) are always displayed onscreen as feedback.

The volume of the sample playback is determined by vertical height above the Leap motion controller. Later in the work, a tremolo effect/amplitude modulation is controlled by horizontal motion above the Leap controller, with far left values giving the slowest tremolo and far right values the fastest. (The tremolo effect must be toggled on with the box marked "tremolo on/off" onscreen.) If the Leap controller stops working at any time (or if a Leap is unavailable), toggling on the "slider on/off" toggle overrides the Leap and activates a drag-able onscreen x/y slider that emulates the Leap's control.

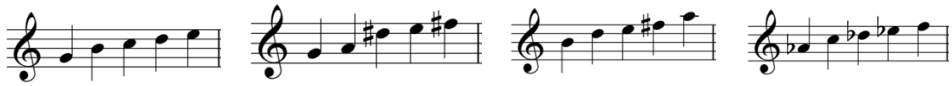
At least one player should be designated a "bass." This player/these players will eventually drop their samples down an octave by pressing the down arrow key.

The score for *Unmute* is given below, but it is also displayed within the patch during performance. It is a structured improvisation, with the overriding goal being for the ensemble to practice a kind of keen listening to each other. Approximate timings may be worked out ahead of time if an ensemble would prefer, and a stopwatch is built into the patch to facilitate timing coordination in this case.

Any questions may be addressed to the composer at flanncunningham@gmail.com. Many thanks for your playing.

Score:

Sets:



(key 6) (key 7) (key 8) (key 9)

Progression:

1) Four rhythmically coordinated chords (any pitch, any vowel, one player should lead)
2) 1x through chords below, with each player at own pace, on pitch set 1
3) Start advancing through pitch sets (continue notated chords in different sets or improvise freely)
4) Add tremolo (starting with lower rates and getting higher). Optionally begin singing softly, but don't make singing audible between laptop-generated pitches.
5) Bass holds out a note; all join, crescendo, come down together, and turn tremolo off.
6) Four rhythmically coordinated chords (any pitch, any vowel, one player should lead)
7) Cut off laptop and keep singing if you have been, sustaining a single tone on "Oo" until you run out of breath.

Chords for 2:

1 Ah	1 Oo	1 Ah	1 Oo	1 Ee
1, 4 Ah	1, 4 Oo	1, 4 Ee	1, 4 Ah	1, 3, 4 Oo
1, 2, 4 Ah	1, 2, 3 Ah	1, 2, 5 Oo	1, 2, 3, 5 Oo (Bass drop 8va) [Press arrow down]	1, 2 Ee