Windows Left Open

for microtonal ensemble and electronics

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Conceptual Notes:

Generative Pitch Structure

The piece sets the pristine character of algorithmically generated material against the backdrop of a nature preserve soundscape (Florida's Payne's Prairie), the combination of which serves to inform the performance of live musicians. The expanding palette of just-intoned pitches are derived from scales generated by successive branching from the harmonics of a given frequency (fundamental) for each section. The harmonics of each section's fundamental are introduced sequentially as potential reference frequencies (tonics), which when multiplied against members of an expanding set of just-intoned ratios (increasing in complexity), generates a number of just-intoned diatonic scales. Therefore, scales are related to one another only on the basis that each tonic is a member of the same harmonic set. Within each of the piece's five sections, scales branch off of the harmonics of the fundamental in a non-deterministic way. Tonics for each scale, and the particular collection of scale degrees, are sequenced using a random selection algorithm with statistical feedback in order to vary the juxtaposition of both scales and scale degrees, cutting down on direct repetitions.

Placing Material in Time

Each section can be understood as a canon, wherein voices enter according to some temporal offset. Each voice explores a unique scale (built off of a particular harmonic of the given fundamental for the section, as described above). Note durations within each voice are also selected randomly, using statistical feedback. Durations are chosen from a set of proportional values relative to an underlying tempo for the section. Durations are chosen until a specified metrical block of time is filled precisely. Between successive voices within a section, this metrical block is zeroed out, and its size increased by adding a constant value. Voices, once introduced, repeat for a while, and then stop. The number of repetitions is inversely correlated with the voice's temporal offset. This process results in the accumulation of material and its subsequent slow decay across the section.

Soundscape as Confound

Attending to algorithmic process is however not the piece's aesthetic focus. Five soundscapes (one for each section) recorded at different places in the Payne's Prairie Nature Preserve are also heard, and provide a backdrop for the computationally derived instrumental sounds. By layering/juxtaposing the algorithmic material with soundscape recordings, a disjunct emerges. This disjunct becomes the main focus of the work, a gap between harmonicity and inharmonicity that live performers must bridge. In this way, the electronics are not proffered as an accompaniment to live performance, but rather, a sufficiently interesting and nuanced musical supposition intended to elicit a meaningful musical engagement on the part of the performers.

An Argument for Performance

In live performance, a small chamber ensemble of two or more instruments capable of playing microtonal pitches mediate the disjunct between algorithmically derived instrumental sounds and the background soundscapes. For each section of the piece, the score presents musicians with the sequence of voices, and the sequence of pitches within each voice, they will hear in the electronics. Musicians then listen to the electronics and choose how and when to match pitch, playing softly when they are confident about their intonation, and loudly when they are less confident. By attempting to match pitch, while improvising articulation, rhythm, and dynamics "in tune" with how they hear the electronics and each other, performers begin to place themselves somewhere between the indeterminate characteristics of a soundscape and the computational, harmonic purity of the algorithmic processes. Through performer interaction with the electronics (listening and voicing) the algorithmic material becomes infused with a degree of dynamism, performability, and presence that would otherwise be absent.

Live performance marks a point of tangency between how we hear the world and how we model it. It should be reflective of a deep reciprocity between listening and voicing. *Windows Left Open* presents such a tangency directly, allowing the reciprocity inherent in our aural engagement with the world to come to the fore. In this way, performer musicality becomes contextualized as a larger exploration of "natural" phenomena. By leaving performers to engage with the piece's sound world on their own accord through microtonal pitch matching and aural feedback, the nuance of performance itself highlights a reasonableness for juxtaposing soundscape and algorithm. Through our awareness and sensitivity to performative provision, response, and imprecision, us listeners begin to take a few tentative steps towards situating ourselves somewhere between the two.

Performance Instructions:

Instrument Considerations

The ensemble should be comprised of instruments capable of playing microtonal pitches. While the ensemble may have any number of instruments, two or greater, the dynamic level of the ensemble and the electronics should be balanced. Relatively small ensembles between two and eight instruments are ideal.

This score functions for all instruments. The range of pitches notated fall within the range of the ensemble, not the range of particular instruments. When encountering a pitch that falls outside the range of a particular instrument, simply ignore it, choosing not to play that pitch. Choosing to play octave transpositions are acceptable, but only by one octave above or below the notated pitch. Octave transpositions should be used sparingly on a note by note basis (don't transpose an entire collection of pitches); reserve them for particular pitches. All pitches are notated at sounding pitch.

This all said, string instruments work well (including guitars). Trombones are fine but, depending on the other instruments, cause some difficulty in trying to maintain an equal dynamic level across the ensemble.

Form

The notated score (opposite page) is broken into five sections. These five sections correspond to the sections audible in the electronic part, which are separated by brief silence (2 seconds or so). For each of the five sections (each of which is a canon), the score shows the onset sequence of particular voices heard in the electronics. A vertical dashed line and some extra horizontal staff space is provided between notated pitches to indicate the arrival of a new voice. These lines do not mark measures and do not exist strictly in time. Rather, they define the pitch collection for a particular voice. The pitch collection is then presented according to the order in which each pitch is heard in the electronics. The onset of each unique voice is therefore understood to be delayed in time from the previous voice. In the electronics, once a voice is introduced it then repeats independently for a while (with different timbres and articulations), and eventually stops. Within each canon/section, the order in which voices stop is the same as the order in which they enter (the first voice to enter is the first to stop).

Pitch-Matching

The notated score is a reference for all of the pitches that are heard in the electronics part. Each performer must listen to the electronics and decide when and how to play his or her instrument, each time trying to match a particular microtonal pitch. Notated pitches should not be read strictly in time, but rather, as collections comprising a number of possible pitches one might hear, attune to, and then play. In this way, reading the score is to search for an aural engagement with the electronics. Not all pitches need to be played by a given instrument, nor should they be. Instead, performers should try hard to play pitches that no one else can play, considering the range of each of the instruments in the ensemble. This is particularly true of lower register pitches, of which there are relatively few. Feel free to look ahead, anticipating upcoming pitch collections, or linger behind, continuing to articulate a pitch that has recently passed in the electronics.

Dynamics

Performers should individually adjust dynamics on a note by note basis according to their degree of confidence in intonation. Dynamics should be related to pitch confidence, such that:

> for the most confident pitches, play *ppp*
> for the least confident pitches, play *f*

This seems counterintuitive, but sounding "wrong" (imprecise intonation) should be perceived as a confident action. The piece isn't about being "right," its about finding "right." Being assuredly wrong and then gently correcting will result in listeners perceiving a much more confident/intentional performance.

Articulation

Articulate freely, so long as a high level of pitch precision is still discernible, and remains the focus. Articulation should demonstrate a degree of aural sensitivity to the electronic part as well. Glissando/bend freely, with the aim of achieving higher pitch precision. Vary articulation as a means of playing with timbre. Articulation should be differentiated enough such that listeners are intrigued by relative harmonic and inharmonic contrasts without loosing focus on the fact that pitch-matching is the goal, and drives the performance of the work. When comfortable with the pitch-matching component of the piece, allow for the sounds of the background soundscape to influence articulation as well. Don't over-articulate; be sensitive to the timing of sounds heard in the electronics. Choose to articulate notes sparingly, at times indulging in small flourishes/clusters of activity and then pausing to wait/listen. Again, not all notated pitches should be played; pick and choose.

Ending note about improvisatory aspects

Obviously, there are some things the score specifies, and some things it does not. Namely, the notated score makes pitch and form a priority while treating instrumentation, dynamics, articulation, rhythm (choosing *when* to articulate notes) as rather fuzzy. This fuzziness is delegated to the performers, who must make (musical) decisions within the boundaries of directed improvisation outlined above. In this way performers bring a great deal to this piece, not only in terms of technical proficiency on their instrument, but also in terms of their own individual musicality.

As an ensemble of semi-improvisors, it therefore becomes important to reach another level of listening, one that lies beyond the precepts of the score. It becomes important to listen to each other too. Mimicry, contrast, response, etc. are all viable modes of interaction between players attending to each other as well as the same aural canvas which frames their interaction. Ideally, an ensemble performing this piece reaches this level of attention and sensitivity.

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