Sonic Structures Submission 2: ensemble as context

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1 Introduction

We've been given a theme - **pattern**, and a task - to design a soundtrack to a film, and perform it in Max/MSP. We settled on a clip from '20Hz'[1].

2 Planning and Evolution

First impressions of 20Hz sparked ideas that reflected the visual form of the film - that is, patterns that emerge, evolve and dissipate in pseudo-random segments of time. Our initial plan was to divide the soundtrack into 3 interactive elements - melody, rhythm and effects. Not only would these 3 elements be able to control certain aspects of adjacent elements (e.g. effects would be applied to melody and rhythm, rhythm would control its aspect within melody) but our ambition was to have each performer's role shift with time (specifically, a 'shuffle' of roles would occur at each third of the film's length). Deployment of tactics such as these would help translate the visual nature into sound as well as the performance itself, and retained the dynamics seen on screen on several timescales. 3 patterns could be distinguished in the film (circles, lines and organised distortions of each), and our ambitions extended to incorporating these as visual cues for each of our patches. Evidence of this initial approach can be seen within my patch, particularly functionality such as the rhythm sequence generator that was eventually left unused in our finalized performance.

After our first rehearsal, a revision of the plan was made to better suit both the practicalities and accessible interpretations of the live performance. After considering each performer's patches and their states at that point, we opted for a more organic yet straightforward approach, combining an arrangement derived from visual cues in the film with instruments/voices that each of us had created. This eventually allowed more spontaneity and intuition to feed particularly into my performance, through restriction of which instruments I would control with my MIDI interface, and also crucially calling for a more conventional form to my instrument's sound.

3 Performance

From the very beginning my goal during this project was to build software that I could interact with my electric guitar. Given my limited experience with Max/MSP, I deduced the simplest yet most rewarding way of achieving this was by converting my guitar signal into conventional MIDI data, to be fed into Max in the usual way. A crucial link in this relatively simple chain is the Sonuus i2m MusicPort [2], which does exactly that. After this immediate interface obstacle was overcome, the focus shifted to the production of sounds that had both relevance to the film and my guitar's performance. This meant creating a patch that preserved vital details of my input signal (both tone and aspects of performance I deemed useful for portraying patterns interpreted on screen), whilst synthesising additional characteristics from the nature of input that (hopefully) augmented the audience's experience. From a performance perspective, this patch needed to be versatile enough to react to changes in typically common musical qualities in my guitar playing, so that both 'human' and 'artificial' aspects of the performance appeared seamless and cohesive, forming cumulative and subtractive yet distinct pattern. Whilst the guitar is an instrument with seemingly boundless tonic possibility, I discovered that as a monophonic MIDI controller, it became heavily restricted. This turned out to be beneficial and challenging in equal measure - it kept the focus on what the patch should do, rather than my own musicianship, but also I could not avoid using conventional PC keyboard/mouse control in conjunction with fretboard to keep levels of individual voices in check. The interplay of my system with the ensemble was fundamental in its final design. With an arrangement sketched and voice combinations considered fairly early on, this guided where the development of the patch should

strike for, and the feedback given after an open rehearsal prompted the last major feature to be implemented - the addition of a live guitar signal into the mix. Spectrally, we were careful not to allow jarring interference, and everyone had their space - if only temporally. Given we wanted to retain a rhythmic backbone to the soundtrack as much as possible (another dimension in which pattern would exhibit itself), we took care in 'syncing' our systems before every rendition, which whilst not done in the most efficient way, worked every time (eventually).

4 The Max/MSP Patch

The patch is written and implemented using Max/MSP 7 2014 (by Cycling74). Signal from my guitar was captured using a Sonuus i2m MusicPort [2], providing both the raw live signal and a conversion into MIDI simultaneously. The live guitar signal processing subpatch was taken and modified from a Max/MSP tutorial [3] to suit my needs.

5 Conclusion

Bridging the creative gap between guitar and laptop has always been a personal endeavour, and each stage in the development of my patch has reaped vital insight and knowledge into the challenges and possibilities one might face when exploring this particular method of sound synthesis. Whilst initially presented with numerous constraints (musically and sonically in general), it's prompted me to come up with alternative paths of logic to achieve a sound I would associate with **pattern**. Opportunities to further shape and drive the growth of my software through open rehearsals complete with relevant feedback are ones I relished, and have added depth and versatility to my approach as a guitarist. The collaborative spirit within our group made tackling the task at hand satisfying throughout.

6 What Next?

- The introduction of a footswitch as an additional MIDI interface for my patch came up at several points during its development, and would be an immediate next step if I were to take this further, as even a simple

toggle provides vital flexibility on what can be done without having to reach out to the laptop (cycling through presets for example).

- Aforementioned global metronome issues could be solved via intercommunication of systems through WiFi. This relatively simple sync problem, whilst not disastrous to the performance, would slicken up the initilization ('soundcheck') period.

- An aspect limited by budget rather than time would be the monophonic nature of my MIDI interface. This could be logically extended to the polyphonic equivalent - a MIDI pickup on the guitar would convert all strings simultaneously, and the possibilities with polyphony in this sense when combined with the ideas present in my patch lead to all manner of arrangements - melodic, rhythmic or otherwise.

- Further processing of live signal to reduce recognizable conventional guitar sound (which will always trigger familiar notions of a common instrument).

References

[1] **20Hz**: Ruth Jarman and Joe Gerhardt of Semiconductor, `https://vimeo.com/30668685`. 20Hz is co-commissioned by Arts Santa Monica + Lighthouse. Supported by the British Council. 2011.

[2] **Sonuus i2m MusicPort**: `http://www.sonuus.com/products_i2m_mp.html`

[3] **Max Guitar Processor**: `https://cycling74.com/2008/07/28/max-5-guitar-processor-part-1/#.VmRSp_nhDDc` - Darwin Grosse. 2008.