SOGNO 102: HARMONIOUSLY REVISIONING COMPOSITIONAL TECHNIQUES OF GIACINTO SCELSI

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ABSTRACT

In 2013, the Western Australian Ensemble Decibel presented a program of late works of the Italian composer, Giacinto Scelsi (1905-1908) at the Goethe Institute in Palermo, Italy, entitled *Inner Space: The Giacinto Scelsi Project*. Amongst the pieces, were two original works by members of the ensemble, as a kind of homage to the composer. One of these compositions was by the director of the ensemble Cat Hope, entitled *Sogno 102,* a piece influenced by Scelsi's composition methodologies and a book of Scelsi's entitled *Sogno 101*, published by Italian publisher Quodlibet, in 2010. The book includes a range of articles derived from autobiographical audio recordings made by Scelsi himself, and transcribed for the book after his death. This article discusses the processes involved in conceptualising and realising the work, in particular the way electronics are used to realise some of the integral elements of Scelsi's own ideas about music into this work.

1. CONCEPTUAL OVERVIEW

Decibel is an ensemble that works with acoustic instruments and electronics. A key element to the Scelsi project was not that the works should all be works that feature electronics, and in fact Scelsi wrote few works that feature electronics, but were conceived using electronics. The majority of Scelsi's compositions were improvisations made on an Ondiola, one of two that he had bought in 1957 and 1958. The Ondiola, also marketed as a Clavioline in other countries, is a small, three octave electronic keyboard instrument attached to its own amplifier, with dials and keys for producing glissandi, quarter tones, vibrato and different timbres [Utti 1985]. It is an early monophonic synthesiser, with a modulator and filters.

Scelsi recorded his improvisations made on the Ondiola onto tape, which were often overdubbed and reorganised to form a final version, or to create different parts, which were then given to a transcriber to notate [Jaecker 1985, Utti 1995]. These transcribers included Vieri Tosatti, Alvin Curran, Sergio Caffaro and Frances-Marie Utti [Utti 1995]. His process at the tape recorder is a kind of compositional editing as can be seen in much electronic music today. However, these recordings were only ever intended as compositional starting points for notation. The original tapes are kept at the Fondazione Isabella Scelsi in Rome, and have only recently been used in live performance, as part of Klangforum Wien's *Giacinto Scelsi REVISTED* project in May 2013, at the Acht Brücken Music Festival in Cologne. The group rebuilt a Clavioline and performed some of Scelsi's original tapes, giving audiences a taste of the sounds of this instrument and an insight to Scelsi's compositional process.

Listening to the Clavioline on Klangforum Wien's introductory video [Klangforum Wien 2013] illustrates clearly the musical timbres Scelsi was able to produce on this instrument, and it is surprising how much it sounds like much of the acoustic realisations. This process of transcription: from electronic improvisation to fixed notation for acoustic instruments, as well as the more recent transcription completed by Klangforum Wien from audio tape back to electronic instrument performance are key conceptual elements engaged in the creation of *Sogno 102*.

Another element of transcription comes into play in the book, *Sogno 101*. The writings (though this hardly seems an appropriate term in this case) in Sogno 101 include anecdotes, reflections and poems. Some of them are funny, others are contemplative. Some quite confusing. When Hope attempted to discuss the book with composer Alvin Curran, a late mentee of Scelsi's, he cut her off abruptly, calling it 'that awful book' [Curran 2013]. He never elaborated, and one can only guess at his reasons for making such a claim. But it left her wondering if Curran thought the book was inaccurate, or contained material of a personal nature that was inappropriate for publication. Or more simply, sometimes, transcriptions do not tell a complete story. Writing is a very different process to that of speaking to tape, just as pre-composed works are very different form free improvisation. This contrast of capturing thoughts and ideas as they pour out in real time onto a tape, as opposed to transcribing them to text after a period of years, was of interest to Hope, and a concept explored in the piece.

Scelsi was interested in exploring the nature and potential of sound in his works. Inspired by musical and philosophical traditions of India and Tibet, he had an interest in the capacity of drone to present the inner energy of sound (Dickson 2012). Drone is another element key to this work.

2. WRITING A HOMAGE

The music of Scelsi had been an important influence on Hope's work as a composer. The relationship of improvising to composition, drone and glissandi had been explored in a range of her compositions, installations, improvisations and text scores. Writing a work as homage is simple in this case, as the influence of Scelsi's work is already in my work. Hope's work employs graphic notation, unlike Scelsi's, who only ever employed traditional music notation in his work, though he did notate some extended techniques.

The obvious elements in *Sogno 102* that can be identified with Scelsi are the use of drones, microtonal steps, glissandi, and over exaggerated vibrato. Scelsi explored all these techniques in his work, and the late string quartets provide good examples. In the first movement of *String Quartet No. 2* (1961), the instruments play long notes that vary in their timbre, attack and vibrato. They remain the same, or drone, for some time, often featuring glissando movements to nearby pitches, and intense tremolo's. Likewise, *Ko-Lho* (1966), a piece for clarinet and flute, which also made part of the Inner Space program, features these delicate shifts around sustained notes.

Scelsi's ideas about the quality and potential of sound are complex and detailed, and beyond the scope of this paper. Scelsi identified and separated two specific ideas about rhythm in his work, and they relate closely to the nature of sound. One is pulsation - the interaction of notes and silence, or of sounds in the air; the other being duration [Jaeker 2013]. This led Scelsi to investigate a time that was not sequential, but rather as a depth in sound [Zenck 1985]. Scelsi undertook what has been called 'Infrasonic' research' [Jaeker 2013], which seems to imply an examination of the vibratory quality of sounds. *Sogno 102* explores this vibratory quality by contrasting pure electronic sine tones with rich timbral qualities of acoustic instruments. This is a process examined in the comprehensive *Still and Moving Lines of Silence in Families of Hyperbola*'s (1973-1974) series of compositions by American composer Alvin Lucier, with pre-recorded tapes of sine tones set against various acoustic instruments.[1] The way this process has been used in *Sogno 102* is described in more detail below.

[1] Decibel performed these sine tone parts live in performance, with Lucier's approval in their performances and recordings of his work for three instruments and two sine tones, *Ever Present* (2002). This was discussed in a paper by the same authors for ACMC in 2010.

3. THE KEY COMPONENTS

The score for *Sogno 102* requires the Decibel ScorePlayer, an Application for the iPad developed by Decibel. This is a mechanism that puts graphic scores in motion on a screen, scrolling past a 'playhead' that is the moment that the music is to be read. It is ideal for music that is pulseless and does not use conventional music notation (Wyatt et al 2013). It also enables the performers to see their own part, only or all the parts together. *Sogno 102* is written for bass flute, bass clarinet, viola, cello, piano and electronics. Each instrument has its own colour on the score, to make them easy to identify. Pitch choices are free, but the relationships between the pitches is proportional on the score. Decibel always uses the same colour for the same instrument, wherever colour is employed in a score. This began with the development of Lindsay Vickery and Cat Hope's collaborative composition *The Talking Board* (2011) that uses coloured circles that performers follow. Though Hope has been using colour in scores since 2009, the system was not standardised for Decibel until the composition of *The Talking Board.* The choice of colours for each part aims to maximize the distinctness of each part using schemes explored for similar purposes in the visualization of data (Tufte 1990) and transport maps (Green-Armytage 2001).

The electronic part is notated with timed events that indicate points at which the sound of a specific acoustic instrument will be captured by a microphone, sampled and analysed. The resulting value, representing the instrument's strongest sinusoidal peak at that moment, is used to control a `cycle~` object, producing a sine tone at that frequency. The sinetones are spatially distributed between five speakers, one for each instrument. As the work proceeds the frequency of each sinetone is gradually altered, microtonally ascending or descending toward the conclusion, as notated in the score. The amplitude of each sinetone is also increased very gradually over the final 60 seconds of the work.

Each instrument is sampled only once, on its second iteration, so there are as many electronic voices as acoustic ones. In each performance, the sample pitch for each instrument will be different. This is because the acoustic instrument parts are not pitched on the score, and performers make different choices each time, but also because the computer operator will never sample them in exactly the same place every performance. Scelsi liked to say he was looking for the right sound, rather than the right note (Scelsi, 1981) - and this is the intention in *Sogno 102.*

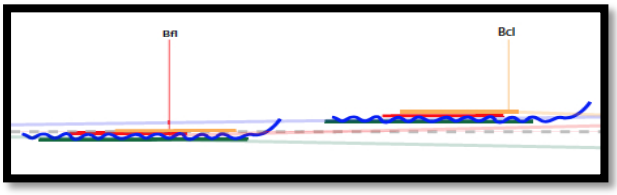

Figure 1. One example of sample points for the electronics performer in the score for *Sogno 102*. This figure also shows the clustering of tones, the varying of a tone, the sine note appearing from the sampled instrument, and the central (dashed) reference line.

The score is proportional in its description of pitch, so each instrument makes a choice of pitch in relationship to the other instruments in the group, and to a central reference line, that runs throughout the piece. This dashed, opaque line shows where the original pitch chosen by the first player, the cellist in this piece, lies in relation to the other parts throughout the piece. It provides a development on the 'single note' style for which Scelsi became known his later works. This involved a single focal pitch or cluster of pitches which are subjected to a range of treatments [Drott 2006]. In *Sogno 102*, a range of pitches cluster together, but move as a whole. The reference to the original pitch is only evident to the performers, and they do not return to it.

The idea of sampling on the second 'note' of each instrument is a direct reference to the nature of transcription, described earlier. Often a statement is made, it can be re-iterated, but it wont ever is exactly the same. This references the audio process of dubbing on tape, where each pass disintegrates the quality of the recording and the tape, as well as the process of transcription in the book *Sogno 101*. Scelsi spoke to tape, someone listened and transcribed to the best of their ability. The clarity of the source is never discussed. Similarly, Scelsi's composition process seemed to have a large frame, two-step process: the improvisations to Ondiola, then the transcription to notation, which enabled the work to be performed by acoustic instruments.

This process of sampling to sine tones is one that Hope had used before, in the work *The Lowest Drawer* (2013). This work is for bass flute, bass clarinet and cello, but here the instruments are sampled thirteen times, in many different places of the piece, and the samples, whilst also transcribed to sine tones, do not change pitch as they do in *Sogno 102*.

4. ELECTRONICS IN SOGNO 102

The Lowest Drawer saw an early inception of the Max patch and score type for *Sogno 102*. The patch was developed by Decibel member Lindsay Vickery, and designed to track the fundamental frequencies analyzed from three microphones, one for each instrument, and allocates them to sine tones of identical pitch at the instant they are specified in the graphic score, played back in a quadraphonic speaker set up. The sine tone is really only audible when the instrument varies from the pitch in even the most subtle way, and once the instrument concludes the note sampled. Timed cues were originally triggered automatically from the score, which ran in Max, rather than the Decibel ScorePlayer, and projected in the performance space. A subsequent performance using eight powered loudspeakers, two bass guitar amplifiers, and one powered subwoofer saw further development of the patch by Decibel member Stuart James. For ease of signal redirection James added a configurable matrix that enabled customized speaker routings on the fly to the eleven individual speakers. The variations in the instrumentalists' distance and dynamic often resulted in tones 'popping out' loudly, limiting the effect of the acoustic instrument masking the tone. This effect could be exaggerated according to different perceptions of the tone in different areas of the audience space. As a means of managing the perceived loudness of different events, taking into consideration the distance of various loudspeakers, and their differing frequency responses, it was necessary to add facility for controlling the relative loudness for each individual sine tone, tuning their relative loudness for the performance space, and a global level control for the electronics performer to manage during the performance.

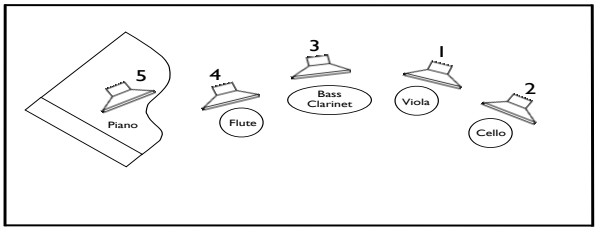

Figure 2. One possible set up of speaker placement according to channel number. The speakers can be placed directly beside or behind the performers as no feedback can occur in this microphone/speaker electronics scenario as recording and playback never occur together.

Pressure gradient, or more specifically cardioid, dynamic microphones are best suited in order to avoid spill from both the other instrumentalists on stage and the tones in the speakers. This is beneficial for tracking the fundamental frequency generated, particularly to compensate for the natural roll-off in frequency response that exists with smaller diaphragm dynamic microphones such as the Shure SM57. *Sogno 102* requires the sampled tones to change pitch as notated on the score, and the patch was constructed to automate this, only requiring the electronics performer to turn the audio on, trigger the cues as per his/her own copy of the score on the Decibel ScorePlayer, networked with the other performers, and facilitate the crescendo at the end. Input and output gain structures can be sound-checked and preset, and internal parameter changes are generated and managed by the patch automatically. Trigger cues are color matched with the score, and the current frequency after it is detected and modulated is displayed.

Figure 3. The interface window of the Max/MSP patch for *Sogno 102*

The *sigmund~* object was used to track the fundamental frequency of five instrumentalists. A low pass filter was inserted just before this signal analysis stage, performed by the *sigmund~* object, to avoid anomalies in

fundamental frequency detection that occasionally occurred in *The Lowest Drawer*. James used four numerical accumulation functions generate the change in pitch determined by an initial value describing the rate of change, or gradient as shown in Figure 4. Some of accumulators within the patch were biased to generate in upward (positive) or downward (negative) direction. In theory this raises some questions in relation to the pitch scale, as to whether it is logarithmic or linear. Due to the fact that pitch change is determined linearly in frequency, this means they are perceived by the listener to be logarithmic in nature, meaning lower frequencies shift at an increasingly larger gradient than higher frequencies. The Max patch for the piece is available from http://www.cathope.com/sogno-102-2013.html(.)

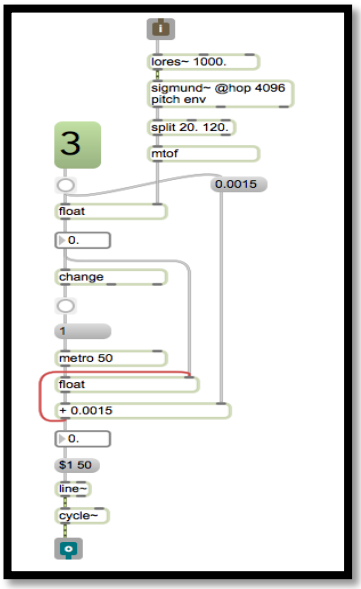

Figure 4. The accumulator function of the Max/MSP patch for *Sogno 102.*

The interaction of the electronics and acoustic instruments is subtle. The gradual pitch changes in the sine tones is almost imperceptible, and the different playing techniques applied to single sustained notes highlight these very slight differences in pitch, as well as the timbral difference of the sine tone and acoustic instrumental tone. Beating often eventuates between the instrument and tone, and between the tones and instruments themselves. When the sine tones crescendo, they appear to change timbre, as if they take on some characteristics of the speaker that they play through.

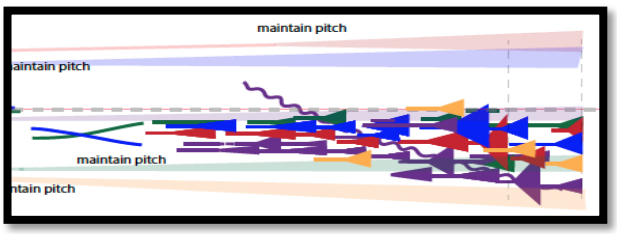

Figure 5. The end of *Sogno 102*, showing the crescendo in the electronic parts.

5. CONCLUSION

The development of *Sogno 102* explores the notion of a harmonious homage from conceptual and craft aspects. The practical development of the electronics for the work has grown from a process of trying ideas in different settings, and finding practical solutions for different issues that arise at each performance and rehearsal. *Sogno 102* does not sound like a work by Giacinto Scelsi. But in the context of the concert, Inner Space, it adds a rich dimension to the impact and reach of Scelsi's work beyond his lifetime.

6. REFERENCES

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