

PLASTIC MUSIC AND AURAL MODELS

Rick Nance¹
DeMontfort
University
Music, Technology
and Innovation

ABSTRACT

In 2005 *Parables*, several studies for solo cello were presented using aural models in place of written scores. The impetus behind this was to remain within the auspices of “plastic sound,” (the subject of my PhD project) and include instrumental composition. These studies served as precursors for two more works for instrumental performers. This presentation will focus on those two works; *Analogies of Control* for cello and fixed sounds, and *K* for trumpet and fixed sounds. Several recordings will be presented of different cellists’ renditions along with their acousmatic (studio) versions. The trumpet performance will be also presented in contrast to its acousmatic version.

Suggestions and comments from the cellists regarding future works are discussed as are other variations in this approach.

Keywords – DMRN, music analysis, musicology, aural models, plastic music, musique plastique, concrete sound, musique concrète, acousmatic

1. INTRODUCTION AND REVIEW

In works for instruments and fixed sounds, many composers have, historically, been writing in a multi-media situation. Musical manuscripts related to traditional notation, and graphical scores designed by individual composers for specific works, are created alongside digital and analogue creations using concrete methods; that is, manipulating sounds 'by ear' with hands on real-time controls in a constant feedback loop of proprioceptive adaptation. Although the composers' 'inner ear' or aural imagination has proven quite sufficient to the purpose of integrating these two worlds, the fact is, that there are still two modes of conduct in use. By writing, one relies on a socially mediated code with a history of shared understanding between composers and performers. The other is a creation of the thing itself. It *is* the music, not a plan for creating music to be given to a specialist interpreter.

Five studies were prepared as experiments towards creating other works for instruments and fixed sounds. In the studies, fixed sounds are used in place of musical manuscript. The performer, who is the only one to hear the model, is asked to imitate the sounds he hears as accurately as possible. This puts the cellist in an analogous position to the studio composer. He is using his instrument to synthesize new sounds in response to others. Also, composers of written music share an

understanding of intent with instrumentalists in manuscript. This use of an aural model allows an instrumentalist and composer again to work on another common ground. In this case they both are using a combination of aural acuity and technical expertise to re-synthesize auditory signals in a musical fashion. These solo studies are also of interest in that they are a “special case” (Mooney, 2005) of electroacoustic composition. Although the model-score is an electroacoustic construction, it is a solo instrumental performance. The audience hears only a solo cello. The works for which these experiments were conceived are *Analogies of Control* (cello) and *K* (trumpet). They are 'mixed works' for performers and fixed sounds.

ANALOGIES OF CONTROL FOR CELLO AND FIXED SOUND

There have now been three cellists to perform *Analogies of Control*; Thomas Gardner, Craig Hultgren and Edgardo Espinosa.

In some ways *Analogies of Control* is more typical to instrument and fixed sound works in which the performer reads a score written to integrate with an electroacoustic part. However this work, by approaching the instrumental part of the composition as an electroacoustic construction, allows both parts to be created in a single (aural) modality.

The parts that were to be later separated and used as an aural model for the cellist were made from the same source objects that the cello studies used; heat activated metals. The rest of the piece is built from cello sounds and their computer manipulated derivations. I used various approaches with the instrument as a sound source, including standard practice bowing all the way to a complete physical dismantling of the instrument and improvising with its separated parts. Tuning pegs were bounced on the body and fingerboard, strings were drawn through the f-holes. Bow and pegs were swirled across the back of the body.

Strings were twisted against themselves and resin was crushed and sprinkled across the body. Some improvisations on cello (some by Hultgren and some by me) as well as some of the renditions of *Parables* as performed by Craig Hultgren also were included as sources.

It is important to stress, that during the course of creating the work, little regard was made as from where the sources came. The extraction into model (score) and accompaniment (diffused) happened after the fact. In mixing the piece down for performance, three tracks are

¹ Email: ricknance@gmail.com

made. Two are to be diffused to the audience and the model is delivered to the cellist via headphones. Just as in the *Parables*, no one but the cellist hears the electroacoustic model. For the audience that means that what is heard either comes from the cellist, or it is sound derived from cello sources and manipulated in the studio. The audience doesn't hear the original composition as it was made as I, the composer, heard it when I used the heat activated metals in the model.

The audience hears a performance of acoustic cello and cello-derived plastic sound.

- Sample one
 - acousmatic
 - Hultgren
 - Gardner
- Sample two
 - acousmatic
 - Hultgren
 - Gardner
- Sample three
 - acousmatic
 - Hultgren
 - Gardner

Performers' perspectives

Each cellist's performance is meant to be the result of the player's interaction with the sound world of the model and the possibilities in the sound world of the cello. The visual aspect of the performance was not supposed to figure in. However, despite my intent towards 'aural purity' it has also turned out to include varying degrees of rhetorical interpretation on the part of the two of the performers as well as visual aids being employed by one cellist.

Judith Mitchell, in regards to *Parables*, is taking the idea of mimicry seriously. She believes that mimesis is at least approachable and possibly achievable. She uses no visual aides, but she is focused on the studies, not on the larger work.

Thomas Gardner has approached the model as a symbol of the sounds he is presumed to make. Remarking that since the sound itself is an impossible task, then he chooses to determine what the sound might represent, and he attempts to represent that on cello.

One difficulty I have with that approach might be the possibility that a player will attach an emotional content to the sound in the model and allow that emotional framework to determine the representation of that 'sound symbol'. I would find it more interesting (and closer to my original intent) if the player were to use his closest possible imitation of the actual sound, regardless of his ability to infuse the gesture with the perceived emotional content of the model. Maybe then we could get another emotional perspective on the piece as a whole. I am hoping to discover how the intersection of cello and aural mimicry produce actions and sound. It is the cellist's experience of the sound, as facilitated by his relationship to the cello that we hear.

This brings to mind that aspect of 'mediated' communication as well. Instead of treating the model as a source for true (or approximate) imitation, he is re-interpreting the sound according to some imagined ideal. This is the same situation that manuscripts have,

except there is no history of expectations in the model. There is no 'common practice' as yet.

Gardner has also been using a visual aid he derives from the fixed sound parts. He does this in the same way many acousmatic concert diffusionists make diffusion scores for performance. Since the score is a representation of how he hears the piece, I have no problem with it. If the piece continues to be part of his repertoire I would expect that there will no longer be a need for the memory aid and he will be able to delve deeper into the sound of the piece without the visual confound.

Craig Hultgren, in talking about the technique in general has said "Semantic orientation to sound has captured the imaginations of experimental composers and improvisers alike. I tend to be more instrumentally pragmatic and concern myself with the successive organizations of sounds, but that's more or less the domain of a player." He went further saying, "As a player and interpreter of scores, I do look for rhetorical or semantic instructions to help characterize the manner and inflections of my playing. You're correct in that the pragmatic part comes in the actual act of playing where I'm not really thinking "blue" or "green" or "spectral." Cognitively, I'm oriented to the actual sound and its production from the instrument." (Hultgren, 2005).

2. K

FOR TRUMPET AND FIXED SOUND

K was built much like *Analogies of Control*. The same heat stressed metals were used for the instrumental model, however the separation by sound source was not quite as strict. Some of the freezing metal samples are in the diffused tracks and there is a lot of cross-synthesis between trumpet sources and the metals. There has been one public performance of *K*, done by Drew Petrie in Glasgow. It was presented in the dark, as an acousmatic piece for performer.

The same issues apply to this piece as in *Analogies of Control*. The difference is that I, as a trumpet player, am much more familiar with the workings of the instrument in question. It was originally intended that this familiarity would have made some significant structural differences in this work as compared with *Analogies of Control*, but nothing in the work so far has shown this to be (or not to be) the case.

- *K*
 - acousmatic
 - Petrie

3. Technical and performance details

The works are available on a CD with 24-bit audio files for both the aural models and the diffused parts. Also included is a schematic (fig.1) showing the routing of the three channels.

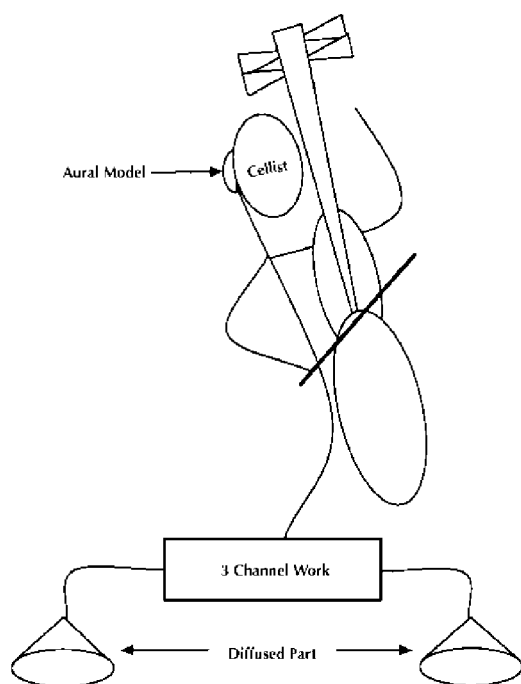


Figure 1.

Also included are instructions as to which sound files are to be routed to the headphones and which to the audience.

Future Possibilities

Hultgren has also asked that in the future that the choices in the model be somewhat pared down. He finds that having too many choices might not be working as well as a more restricted pallet. He suggests restricting the frequency range, for one thing, to an area more suitable for a cello.

It is true that the models in this piece were rather dense, and I left a lot of decisions to the performer. Future works will very likely be pared down in the ways that have been suggested. Towards that end the next works will very probably involve violin, viola and double bass and trombone, in an attempt to better educate myself as to some of the practical aspects of writing for those instruments with concrete methods.

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Although there will be a concerted effort to restrict the models and simplify the choices that the performers will have to make, it should be remembered that part of the structural tension that is at the core of these works is the inability to completely mimic the model. Multiple and infinite choices are central to the aesthetic, and every performer should be expected to interpret the same model in his own way. the 'disjointed' nature of the form should allow the performer to find his own path through the models that are unlike any other's. (Eco, 1994) As in music of New Complexity, the interest is in the "variable distance" (Ferneyhough, 2005) between what is there to reproduce and the performer's actual reproduction of that sound. As a performer gets to know the piece over a period of years his ability to hear the details of the model will improve. The results should vary considerably over a period of time and each performer's interpretation of the model will be distinct. I

4.CONCLUDING REMARKS

I am interested in how these performances will change over time. If the same player performs the music over several years, how significant will the changes be? As players approach their own ideal mimesis with the model, how different will they sound from their earliest attempts? Will different players' renditions eventually converge with one another? So far all the performers involved have had significant experience with improvisation. How will that differ from a player whose experience has been limited to reading written scores? Possibly the most significant question remains to be answered. How would another composer approach instrumental plastic music? It would be exciting to hear other composers attempt this or some variation of it. One other possibility has been suggested by Dr. D.J.T Harrison. In one plan for ensemble it was intended that one could use written manuscript in combination with aural models simply by sending the models along with the written score. Proportional notation could be used with indices of where the ensemble is to begin their interpretation of the aural models.

This would provide an extended interpretable source for the ensemble, and an extended aural pallet for the composer.

6.REFERENCES

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