

## **Approaches to Electroacoustics and Morphology: Rethinking Contacts in “*La Lógica de los Sueños*”**

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### **Abstract**

This paper deals on how to approach electroacoustic and mixed media from two separated-perception worlds: the concept of “Contact” introduced and explored by Stockhausen in the late 50’s and the concept of new music morphology, mostly in instrumental music explored by Cox, Mercer, Schurig and Mahnkopf.

My focus has been more into how to generate sound material and its modification, and finally how I have applied this to composition and composition teaching. I will focus mostly in my work *La Lógica de los Sueños* for singer, prepared guitars and multichannel audio.

### **Introduction**

In recent years, I set myself to develop a more personal view of the inner workings of electroacoustics, this task has different reasons: one was derived from a very pressing need to develop a practical means to analyze electroacoustic music, another was to be able to apply in a intuitive level whatever encapsulated knowledge or experienced perception of movement, shape or discrete change I can obtain from these analyses to structure new compositions.

Another part of this intention was to start historically from zero or almost zero when considering the fundamentals of sound production and composing: what are the fundamentals of electroacoustics? How the different relations between the acoustic instruments and the electric generated are defined and articulated? And more importantly: Can they be really equivalent?

From the start one aspect was very clear: because they live in different generated sound worlds, opposition is very easily achieved, whereas similarity has to be worked out with more systematic principles.

### **Historic Perspective: Electroacoustics**

*Kontakte* by Stockhausen is the first work exploring the concept of contact or closeness in the sense I find more related to the study of the questions mentioned above. Although its structural approach can be related to orchestration technique, in the sense of achieving an

uniform or contrasting timbre or for instance, different textures, its adding up of sound layers in order to obtain different gradations of contacts, is the more direct and powerful fashion to obtain contrast and similitude.

Therefore, as a departing reference, *Kontakte*'s construction can be used to establish a simple but with a lot of potential for development approach to electroacoustics. Similarly to *Kontakte* in structural approach are other works by Stockhausen which also can be used as a departure point: *Mikrophonie I* and *Gesang der Jünglinge* although *Kontakte* seems more straightforward, and the fact that there is a very clear and useful notation for all its elements, makes it ideal for further development.

## Acoustic Instruments : Acoustic Morphology

If electroacoustic sound is constructed in a very detailed acoustical fashion, can we build instrumental sound in the same manner?

In recent years extended instrumental techniques and performance abilities have exponentially improved, more and more performers are willing to experiment with new sounds and extreme techniques. Therefore timbre can be more precisely notated and defined which has repercussions at compositional level and lead to some composers and theoreticians to wonder if we are witnessing a conformation of a new musical morphology. In the book *New Musical Morphology* authors like Mercer, Mahnkof, Cox, Cassidy and Schurig wonder collectively if there is a new definition of musical material, namely *theme*, *motive*, *melody*, *systems of syntax*, and *gesture*. In other words, what they mean to us in recent contexts and if we are now witnessing a whole new apparatus of conception, perception and articulation of musical material. It is important to notice that every author in this volume has a very personal definition of musical morphology.

Mercer in *Musique Concrete Revisited* points out: "But it was not until virtually the entire world of sound, natural and synthetic, was placed quite literally at our fingertips, that serious inquiry into the possibilities of compositionally functional sonic morphologies began in earnest..." (Mahnkof, page 162).

On the other hand Aaron Cassidy considers that... "What I am suggesting, though, is that from a morphological perspective, the ontological identity of a musical "shape" or local "form" is highly dependent upon the physical (and even choreographic) energies involved in creating that sound or group of sounds." (Mahnkof, page 35). In my view, this suggestion involving combined physical energies for sound production and shape, is related to some scores from the *New Complexity* movement where a score is a sum of related and unrelated physical actions which in turn result in a sound world unpredictable and highly variable, pitch and timbre become a by product of these instrumental playing actions.

To summarize these ideas on new morphology, what seems to be important is that we have to integrate all the aspects of music production and how the sound results perceived are to be considered as a means of structuring and articulation a temporal discourse. Most of these theoreticians and composers relate to morphology as a detailed and microscopic sound production that, in turn, is amplified in the whole work.

## Musical Morphology and Sound Contacts

These two concepts, sound morphology on one hand and electroacoustic contacts on the other seem to me sufficiently attractive in order to configure a starting point for working electroacoustics. What I find logical at this point is to wonder if both can be treated as equal and if the evaluation criteria for analysis can be the same.

For instance, if we consider all the criteria that create a morphological approach for analyses, a very detailed description of every acoustical aspect is involved:

Namely:

- Physical distance/movement/origin of the source
- Harmonic content
- Evolution of partials
- Time frame of any given gesture or shape
- Speed of change/rate of change (in any perceptive aspect)
- Envelope, duration, attack, and so on

Construction of a network of sound units, combinations of acoustic and electroacoustic elements, which involve the descriptions above plus specific instrumental playing techniques, gestures and actions are what is involved in a composition planning as a next step. These elements (i.e. conglomerates of gesture, performance technique, timbre description, and so on) are the result of analyzing fragments of intuitive generated music and systematized in order to generate more complete sections.

For instance, an intuitive generated fragment in one stratum yields a network like this:

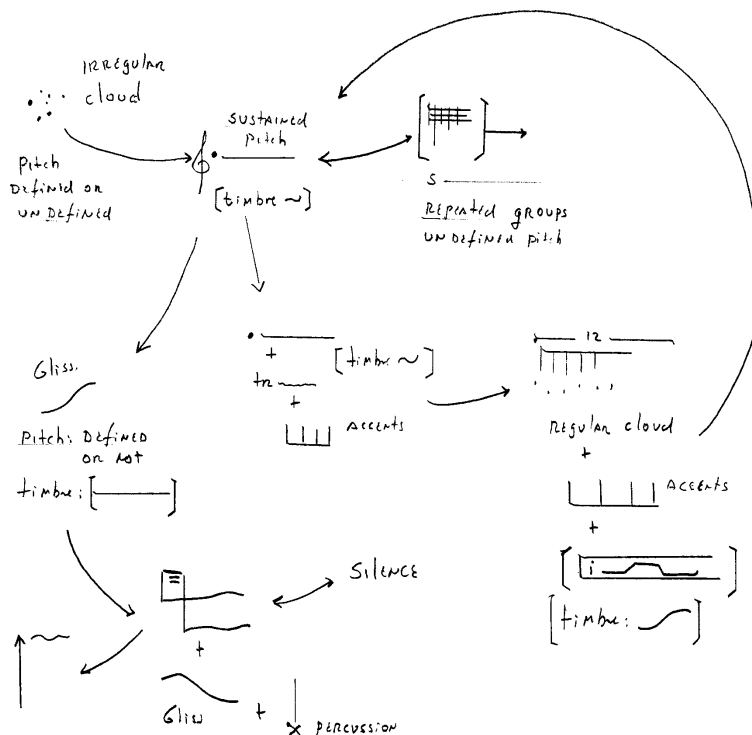
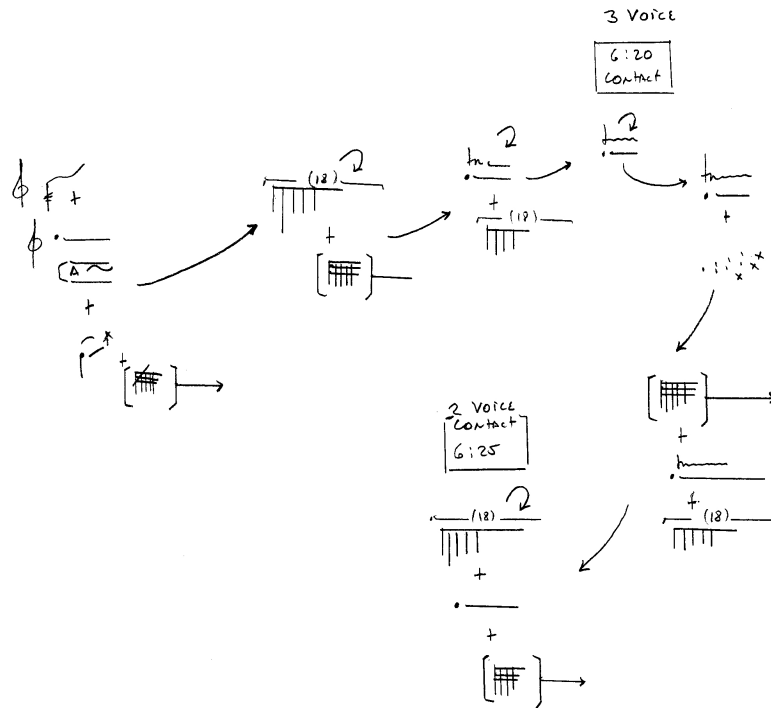


Figure 1: one stratum network

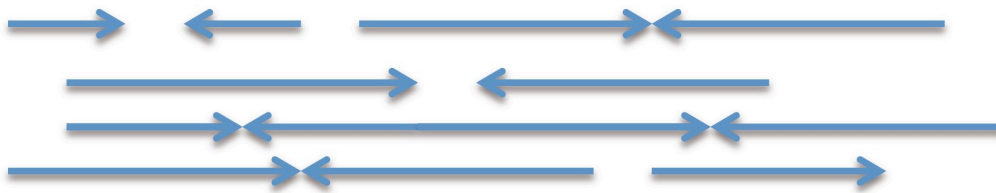
Meanwhile four strata might yield a network like this:



**Figure 2:** several strata network

## *La Lógica de los Sueños*

From these networks of sound units I constructed a simple canonic structure in four strata (or “voices” to be consistent with the idea of canonic imitation), using retrogrades, allowing sometimes a contact between two strata and sometimes between the three or four strata, although for a very short period of time:



**Figure 3:** canonic construction: imitation and retrogrades

This for amplified voice, two prepared and amplified guitars and 4 track tape, can be seen as a four part strata (polyphony) where electroacoustics play a two strata role. The score is notated in proportional score with “measures” of five seconds.

Figure 4: *La Lógica de los Sueños*, page 8

## Conclusions

What is involved here is the treatment of acoustics instruments as electroacoustic and vice versa; first of all they are related to create “contacts” through these network of sound units, which were analyzed through sonograms and re-evaluation of performance extended techniques.

There is also a matter of what are the equivalencies and how they work and interact in both worlds, which a question of personal interpretation and evaluation of material. Equivalencies require interpretation and the interesting aspect, for me, is the possibility of deviation, to interpret materials that can yield unpredictable results.

Finally, regarding the question of meaning, my personal view is that what remains within memory after the music stops constitute meaning; this fragmented and decaying sound image we can recall is the most powerful meaning the musical object can achieve. In *La Lógica de los Sueños* meaning is constructed through a series of contacts that, I hope, can influence memory and therefore can constitute a possible memory or series of memories.

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