

Temporal Forces in Electroacoustic Music

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This paper addresses the idea of musical discourse from the perspective of temporal forces of organization based on Jonathan D. Kramer's research in musical time (Kramer, 1988). It also addresses rhythm in its non-metric or non-pulse-based form (Meyer and Cooper, 1960) and presents it as an organizational force that deserves consideration in electroacoustic music (Garcia-Valenzuela, 2003). In this way, a series of concepts that serve as general analytical tools are defined and put forward, which in turn allow us to create relevant terminologies in electroacoustic music. Examples are given throughout using short musical sections. Finally, and arguably a further aspect of musical time, a powerful aesthetic issue that may weigh on any analytical or terminological approach to electroacoustic music is introduced: that of *sonic surrealism*.

Jonathan D. Kramer's (Kramer, 1988) ideas of musical time are mainly based on instrumental music. The main concepts that govern Kramer's species of musical time are 'linearity' and 'nonlinearity'. Linearity is defined as "the determination of some characteristic(s) of music in accordance with implications that arise from earlier events of the piece"; nonlinearity as "the determination of some characteristic(s) of music in accordance with implications that arise from principles or tendencies governing an entire piece or section" (Kramer 1988, p.20). These terms, it must be said, create negative reactions in scientists, who argue that linearity and nonlinearity are well defined concepts in physics and mathematics that do not match Kramer's definitions. However, it is not in our purpose to rename them, at least not for now, but to use the ideas. In electroacoustic music, which is normally based on the qualitative aspect of sound, we employ different material to compose. But does this mean we use different temporal forces of organization as well? Certainly we do not often find rhythmic and/or melodic structures in electroacoustic music but we do find durational proportions, non-pulse-based rhythms and other relational strategies of organization.

Jonty Harrison (Harrison, 1999) explains that, as a heritage of concrete music, electroacoustic music searches for a 'qualitative/organic' discourse as opposed to 'quantitative/architectonic' discourse, like in instrumental music. But again, does this mean that, apart from visual references of sound, there are no sonic and temporal relational forces organizing electroacoustic music? Under normal listening conditions, aside drugs and deep states of mind, an organic approach cannot avoid that the perceptual present is finite, and that memory and prediction will inevitably come into play. Perhaps electroacoustic music can extend the perceptual present inside the listener's mind, which is known as specious present by psychologists and has an upper limit of about 8 seconds, but cannot ignore it.

Rhythm is defined as our ability to mentally group or ungroup events that are close or far from each other in terms of pitch, time, timbre, space etc... (Meyer and Cooper, 1960). Metre and pulse do not need to be present in order to create rhythmic impressions.

Therefore, Kramer's linearity may be present in electroacoustic music as isolated sound objects that create a gesture, which is a process, or in textural sections that progress towards a predictable or non-predictable goal, whereas nonlinearity may be present as a more dominant force that uses conceptual or timbral relations to hold the piece together. Nonlinearity, principles that govern the organization of a piece without creating a process, is both necessary if we are seeking some kind of coherence in electroacoustic music and useful if we want the qualitative aspects of sound to emerge. Both linearity and nonlinearity are important in electroacoustic music (their use is subjective) and both must be taken into account. The question, in fact, is not if they exist in electroacoustic music, but how they exist.

Non-pulse-based rhythm is a powerful strategy that creates coherence and allows for a qualitative discourse to emerge too. We have decided to name this temporal force *Non-pulse-based grouping* (Garcia-Valenzuela, 2003) because we do not want the idea of metre to be involved. Non-pulse-based grouping plays with the ability of the mind to group and ungroup events without generating pulse or metric frames. It is quantifiable but in a different way. Therefore, it involves the repetition of sound objects or small structures, creating expectations that need to be dealt with (Example 1: excerpt from *Gutura*, 1999, Pablo Gav).

Textural grouping relates to extremely irregular rhythms balanced somewhere between pulse-based rhythm and texture formed by random impulses (Example 2: excerpt from *Emulse*, 2002, Pablo Gav). *Durational proportions* (Kramer, 1988) are natural and

unavoidable listening strategies, either imposed or simply allowed by the composer, but which can become especially relevant in the structuring processes of qualitative/organic discourses (Example 3: excerpt from *Inchoate m*, 2001, Pablo Gav). A fourth level of temporal organization related to grouping is precisely that where no grouping or ungrouping forces exist. This is where no reference to any kind of rhythmic organization whatsoever is perceived. We call it the Contemplative experience because there is no immediate relation to bodily gestures. Most pieces in electroacoustic music lie within this level of temporal, or may we say atemporal, organization.

Finally, as an issue not divorced from musical time, we find the idea of *sonic surrealism*. This is a difficult field of discussion because we have not come up with a definition yet, but we may begin by considering the possibilities offered by the studio to juxtapose different and unrelated 'aural scenes', or to transform their 'natural behaviour', which are unique tools to the medium and have psychological impact. Examples include juxtaposition of acoustic spaces, juxtaposition of 'everyday sounds' (recognizable as such), environmental and/or 'everyday sounds' in spatial motion (imposed by the composer), environmental sounds brought to a different domain of temporal organization without destroying, but only transforming, their behaviour (Example 4: excerpt from *Gong applause*, 2003, Pablo Gav) and surrealism derived from temporal elongations (Example 5: excerpt from *Trelo*, 2002, Pablo Gav). Other examples exist, more directly related to imaging, such as the culture of 'big' voice in pop recordings, but these are well known.

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No reference has been given to Eastern music in this paper. Most of the ideas discussed derive from Western musical thought. However, it is believed that the concepts of 'qualitative' discourse and 'non-metric' grouping forces of organization involved in this investigation are already doing justice to Eastern music. In fact, they may be closer to Eastern musical thought than they are to Western music.

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List of audio examples:

1. Excerpt from *Gutura* (1999), Dur. 01'09, Pablo Gav.
2. Excerpt from *Emulse* (2002), Dur. 00'56, Pablo Gav.
3. Excerpt from *Inchoate m* (2001), Dur. 03'28, Pablo Gav.
4. Excerpt from *Gong applause* (2003), Dur. 00'15, Pablo Gav.
5. Excerpt from *Trelo* (2002), Dur. 01'24, Pablo Gav.

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