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Post-Pitch World: Timbre as the Primary Element of Form

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ABSTRACT OF THE DISSERTATION

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by

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While pitch has been the primary element of form for many centuries, this dissertation considers the possibility of using timbre as the primary element of form in a musical composition. It explores the different mindsets, structural procedures, and techniques which contribute to the construction of form in the absence of pitch. As its primary case study, this dissertation analyzes *Crama* by Panayiotis Kokoras (b.1974) to discover the practical applications of a piece formally organized by timbre, including over one hundred figures that analyze *Crama* in smaller sections. These figures express the timbre of each instrument, and then compare the timbre of each instrument to all other instruments before discussing the results. Most of the figures include a short conclusion that explains how timbre supports the form in this piece. The conclusion chapter draws from the case study chapters and suggests even more options to create a sound-based composition.

The dissertation of Arash Majd is approved.

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Table 2. Timbral Icv's for all instruments in Crama

Glossary:

To make this work comprehensible to the reader, I define all terminology used in this dissertation in this glossary. To support my analysis of Crama by Panayiotis Kokoras (b.1974), I read Kokoras's writings and was influenced by the bibliography he used. I also developed my own terminology to describe and clarify different events in this paper.

Terms of STASIS

Elements / Contributing elements of form: Different components or aspects that contribute to the creation of form.

Elements of sound: Seven different elements (table one) that contribute to the quality of sound.

Timbre: The quality of sound. Table one indicates seven elements that define timbre or the quality of sound in this paper.

Table.1 contributing elements to the quality of sound.

Seven contributing elements to timbre or the quality of sound.
1. Number of partials = **P#** (1 = fewer, 9 = more)
2. Thinness or thickness of sound = **Th/Tk** (1 = thin, 9 = rich)
3. Range of strongest partials = **PR** (1 = low, 9 = high) or, better: (1 = bottom, 9 = top)
4. Irregularity of sound = **I** (1 = irregular, 9 = regular)
5. Amount of noise = **N** (1 = clean, pure, 9 = noisy)
6. Sharpness of attack = **AS** (1 = gentle, 9 = sharp)
7. Noisiness of attack = **AN** (1 = non-noisy attack, 9 = noisy attack)

Anatomy of timbre: The components in table 1 that contribute to timbre. Imagine the anatomy of the human body, consisting of the heart, kidney, lungs, and so on. The seven contributing elements in table one can be considered the components or the anatomy of timbre.

Minimum and maximum values: These values derive from the subtraction of the absolute timbral values of each instrument. The minimum value indicates smaller timbral values, and the maximum values indicate larger timbral values.

Timbral space: Derived from the subtraction of minimum from maximum values. For example, if the maximum value is 20 and the minimum value is 15, the timbral space between the two instruments is 5.

Noise: The absence of pitch.

Terms of SEPARATION

Section: A specific range of measure numbers that express more than one musical idea.

Subsection: A specific range of measure numbers that express only one musical idea.

Phrase: A musical sentence that suggests a beginning, a possible climax, and an ending.

Shape: A phrase that suggests an arc-like shape.

Form: An organized and meaningful presentation of different sections that create logic concerning the overall structure in a musical composition.

Structure: The overall procedure to organize the form in a musical composition. Also, the logical process of creating a section.

Module: A small motivic idea, usually consisting of fewer than eight cells, which usually but not always repeats itself either solely or as part of a texture.

Figure: A chart line that shows a timbral progression of one or more instruments. It can exhibit different shapes as a result of activity from the contributing elements of the quality of sound.

Sound unit: Similar to module except that it should be pitch-less.

Sound-based composition: According to Kokoras, "In sound-based composition, sound replaces the musical note as the fundamental structural unit."[1]

Terms of CHANGE

Timbral State: The appearance of a particular timbre.

Start: The beginning of a phrase.

Return: Any identical repetition of an idea, module, or sound unit.

Transformation: When an idea, in a section, module, or sound unit, undergoes a process and changes to a variation of that idea but retains an essence of the old idea.

Continuity of sound: The consistent appearance of a timbral state via repetition or transformation.

Forward Motion: Motion that is driven by the transformation or repetition of similar or identical timbral values.

Process: A series of procedures that contribute to the transformation of timbral state A to timbral state B.

Progression: The progress of an idea or a timbral state.

Progression of timbres or timbral progression: The progress of changing the absolute timbral value, or timbre, from point A to point B.

Force: Energy

[1] Panayiotis Kokoras, "Sound Composition," Panayiotis KOKORAS – Projects, August, 2016, http://www.panayiotiskokoras.com/en/projects.html.

Evolving: Change or progression.

Growth: A process which contributes to the creation of shape, form, section, and musical meaning to a timbral state, module, or sound unit.

Decay: Fading away from a timbral state.

Repetition: The consistent appearance of identical absolute timbral values, modules, or sound units.

Periodicity: The consistent repetition of identical absolute timbral values, modules, or sound units within a specific interval of time.

Structuring: The process of organizing or creating a phrase, subsection, section, and form in a musical composition.

Variation: A different version of the same timbral state.

Contribution: Compositional tools to support or create the appearance of shape, phrase, subsection, section, and timbral state in a sound-based composition.

Terms of RELATIONSHIP

Parallelism: The relationship between two parallel lines that each express a particular value and never cross each other. These values are the result of either comparison between the absolute timbral value of two instruments or an absolute timbral value that is derived from the sum of seven contributing elements to the quality of sound (table one).

Deviation: When two lines move away from each other without a parallel relationship. To move away from or not meet a particular number.

Contrast: Two lines that move away or deviate from each other, and do not display a parallel relationship. Two shapes, phrases, subsections, sections, or timbral states that have almost nothing in common.

Similarity: When two timbral states, shapes, phrases, subsections, or sections are alike.

Imitation: The repetition of identical or similar absolute timbral values in different contributing elements of sound, instruments, or modules.

Interrelation or interactivity: The numerically fluctuating relationship between the seven contributing elements of the quality of sound.

Dissonant relationship: The disagreement between different modules or partials.

Terms of QUALITY

Granularity: The level of density.

Density: The dissonant or disagreeing relationship between different layers, modules, and the contributing elements of the quality of sound.

Texture: The consonant or dissonant relationship between different layers, modules, and the contributing elements of the quality of sound. Texture is analogous to density.

Active bars: The appearance of music within a bar or range of bars. Rests are non-active bars.

Saturation: The level of activity that contributes to a musical texture. If the level of activity in different layers, modules, or the contributing elements of the quality of sound is high, the level of saturation is high, and vice versa.

Biographical Sketch:

Arash Majd's music is inspired by timbre, noise, and pitch. He uses timbre as the primary element of form in his works. His latest works employ noise as the main component, and pitch as the secondary component, of timber. His early work has been described by Stephan Smoliar of the San Francisco Examiner as "highly expressive, showing great respect for both traditional forms and contrapuntal techniques, as significant to the serial style as they were to the emergence of sophisticated counterpoint during the Renaissance."

Arash has collaborated with Yarn|wire ENSEMBLE, Lyris Quartet, Ensemble TM+, Winsor Trio, Moscow Contemporary Music Ensemble, Friction Quartet, Elements of Nimbus Ensemble, Tina Guo, Ball State University Saxophone Quartet, Choreographers Batina Essaka & Stefan Poetzsch, and Peter Yates. He was the Alternate Winner of the ASCAP/SCI Commission Composition Competition, in Region VII in 2013. He was also the semi-finalist and finalist for the American Prize in 2013 and 2014, respectively. Arash's principal teachers are David S. Lefkowitz, Ian Krouse, and Richard Danielpour.