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**“Multimedia 'Visual Music': Analogical processes between
images and sounds”**

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Multimedia “Visual Music¹”: Analogical processes between images and sounds

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Abstract

An audio-visual media-art, called Visual Music, is gradually forming as a new art genre. Its characteristics are often as follows:

- Composed of electroacoustic music and digitally processed moving images²
- Equal importance given to both images and sounds³
- Close music-image relationship based on the sense of Synaesthesia⁴

However, as a term, Visual Music exists for a century and has been applied to various kinds of media art.

This paper examines the criteria and definitions of Visual Music and the multi-perceptual analogy between images and sounds. It finally considers the possibilities of Visual Music in Asia.

¹ This term was first coined by Roger E. Fry in 1912 to describe the work of Kandinsky.

² E.g. Call by the Destellos Competition 2010. “electro-acoustic music with video. The work must follow an abstract esthetics and to be interrelated in musical and visual languages, either in their technical and esthesical characteristics.”

³ E.g. call by the EMU Rome 2010.

⁴ Synaesthesia is a neurologically-based condition in which stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway (Cytowic, R. E., 2002).

Keywords: Visual Music, audiovisual composition, criteria

Definition of Visual Music

An audio-visual media-art, called Visual Music, is gradually forming as a new genre linked to the field of Electroacoustic music. Apart from the very original findings of nature phenomena such as the relation between lightning and thunder, Visual Music has its historical roots in early experimental abstract films and pictures of the 20th Century such as the works of Oscar Fischinger⁵, the Whitney brothers⁶ and Norman McLaren⁷. It has evolved through a long film-based era, then a video era during which image transformation was still limited. The definitive shift was carried out by computer technology which enabled artists to produce or process sounds and images in the same quality of expressions. Visual Music is now gradually forming a multi-perceptual art genre and the artists of this field are endeavoring to define it in order to establish its aesthetics. One of the most recent definitions by Brian Evans, for example, is as follows:

Visual Music can be defined as time-based visual imagery that establishes a temporal architecture in a way similar to absolute music. It is typically non narrative and non-representational (Evans, 2005, pp. 11-24).

However, Evans develops further his theory:

Progressing from visually wrong to visually right moves us from dissonance to consonance or tension to release, just as in music a dominant harmony resolves to a tonic.

By this description Evans relates moving images to the classical tension/relax principle,

⁵ 1900-1967.

⁶ John Whitney Sr. (1917-1995) and James Whitney (1921-1982).

⁷ 1914-1987.

dissonance/consonance, as in 19 Century music which is characterized by dominant-tonic. Evans continues:

With cadences, we can articulate units of time and so develop larger temporal units such as motifs, periods, and phrases.

Formal structure elements such as motif, period, phrase, relate to the theory of the musical form of the 19th Century. Can the theory of the 19th Century's musical form be the basis of Visual Music? It is not only Evans who does this, there has also been a 'tradition' among the VM artists to explain the aesthetics of moving images by referring to the theory of classical music. Even the definition of VM, in principle, favors abstract moving images without music, because a silent movie is considered to be much better than one accompanied by music which has no relationship with the visual. This may favor be the reaction against some VM artists who choose pre-existing music from an 'emotional' viewpoint and 'accompany' it with their images. It should be noted that most 'visual music artists' come originally from the fields of painting or film, and that they are generally not composers—neither of electroacoustic music, nor of contemporary art-form music.

A Review of the Development of Musical Aesthetics in the 20th Century

In order to make clear where the composers and VM artists are now standing, a brief history of musical development should be reviewed.

Schoenberg signaled a start to a new sound world by twelve-tone technique. The tonality with its consonance/dissonance principle was dissolved. The classic form based on motives, periods and phrases was abandoned. The musical structure became abstract. At the same time Wassily Kandinsky emancipated painting from concrete figures and dissolved it into graphical elements such as points, lines and planes. The abstract structure was created both in music and visual art during this historical stage.

Since the middle 1950s graphical compositions with various styles and methodologies became significant. E.g.: architectural composition by Iannis Xenakis (cf. *Metastasis*),

tone-cluster composition by Krzysztof Penderecki, dense accumulated linear-structure by György Ligeti, etc.

John Cage and the composers influenced by him blurred the boundary between art and music.

Musique Concrète opened quite new paths to sound-based composition by releasing composers from the classical instrumentation which was replaced by concrete sound material. In parallel, Elektronische Musik using synthesized sounds by oscillators emerged. A musical composition became possible, in which noises are integrated as sound material, structured on harmonic-inharmonic relations.

New 'sounds' needed new notations in the form of graphics.

Digital Technology-Based Parameters in VM Production

The emergence of digital technology opened enormous possibilities for new sound and image syntheses and processing. These will form the basis for a new conceptualization of today's Visual Music. This paper examines what factors and parameters can structure a Visual Music work.

- Time structure

In productions of Visual Music as fixed media, the physically scaled time builds an order of events that produces the continuity. The smallest unit of time is scaled in frames/sec in visual productions and millisecond in sound productions. Both time scales are independent from psychological time as perceived by listeners/viewers. Time factors such as speed, direction, compression/expansion, time-freezing, randomness etc. can contribute to structure both moving images and music.

- Timbre and color

The relation between color and timbre has often been interpreted as a dictum. De Witt confirms:

Universal agreement on a color aesthetic has not been reached, nor is there a

set of rules correlating music tones and visual colors. This contrasts with Western music theory, which long ago settled on a set of aural frequencies, suggestively named the chromatic scale (De Witt, 1987, p. 15).

This can imply that VM artists have the liberty to create their original analogies between timbre and color freely within the digital-based parameters. In digital technology, colors are mixtures of RGB components which are characterized by their proportions. Millions of colors can thus be produced whereas their luminosity is specified by an extra alpha-parameter of each.

Timbre is characterized by its spectrum. A pair of interrelated parameters—frequency and amplitude—can be translated (through a correlation coefficient) into the similarity/differentiation of a sound with the darkness-luminosity value in its scale.

Recent Criteria of VM and Analogies Between Sounds and Images

Recent development of technology allowed the composers of electroacoustic music to easily access the moving image field and the composition of audiovisual works is beginning to thrive among them. As these audiovisual artists compose music-oriented Visual Music, new criteria began to form.

Present criteria for audiovisual works in the electroacoustic music field have been described as follows:

- Composed of electroacoustic music and digitally processed moving images
- Equal importance given to both images and sounds
- Close music-image relationship based on the sense of Synaesthesia

The first criterion is distinct from conventional music videos, which have just-taken videos as the visual part and are usually not much processed. It can even be clarified by defining that both media should benefit from abstract forms.

The third criterion could be completed by the word “metaphoric” as most artists are

actually not so refined synaestheticians⁸.

As already mentioned, the abstract audiovisual composition of Visual Music is composed of two elements: sound and moving images. Based on these criteria, other elements that could influence the relationship between sound and images should be examined:

- Time flows in sounds and moving images
- Speeds and characters of sound and visual events
- Timbre-color expression
- Relationship between the amplitude-luminosity balances
- Size of perceived space in sounds and images
- Range and timing of tension-release in both
- Presentation interface, e.g. size of screen/multi-screening/multi-channel sound diffusion

All these factors can be related to cultural meanings in sound or music as well as images. From the compositional strategies viewpoint, the relationship between sound and visual can be classified into at least three categories as follows:

- Similarity in expression and time flow, which gives the viewers/listeners the impression that ‘both are the same or similar’. However, simple synchronizations such as so-called “Micky-mousing” makes the viewer/listener bored very quickly. For instance, only adjusting the visual change timing to the beat of popular music by editing, will not produce a close relationship. Internal causality of movement will be lacking
- Both media may play counter parts to interpolate the structure as a whole. This produces a high-tension, but needs a deliberate time structure to make a very good balance and impact of the resulting whole
- No apparent relation between either is also possible. This is an limit case of relationship. It needs a deliberate structure in all elements. It makes the viewer/listener

⁸ Jack Ox and Cindy Keefer wrote as follows: A more correct way to include synaesthesia in the equation would be to modify the word with metaphoric. This opens up the field to artists who are actually not synaesthetic in their brain structures (Ox, Keefer, 2006/2008).

anticipate that this relationship will develop or change in the future

Conclusion

Although the tension-release archetype is recognized as one of important factors to structure VM pieces, the idea of referring to moving images by using the theory of classical music is far too narrow. It does not at all fit today's digital-based Visual Music, which is far more complex and delicate. As abstract audiovisual composition, Visual Music should be freed from the concepts of Western classical music. This is also an essential point for non-western composers and artists, as their creations are not based on Western aesthetics. Digital-based VM needs a new conceptualization, which will form the basis for developing new compositional strategies.

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