FLEXIBLE FRAMEWORKS: THE MULTIMEDIA THESAURUS

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ABSTRACT

Background. Although interdisciplinary collaboration is beginning to typify much of the artwork involving new technologies, its development seems quite slow. The current project is founded on the premise that a more healthy growth in the field would be facilitated by a significant increase in critical language and analytical tools which could be used by artists themselves as well as by those who provide an outside perspective: critics, historians, theorists.

Aims. The aims of the project are to discover, develop, and refine appropriate means for talking with other researchers about sound, by itself and in multimodal artworks. In particular, the project is being designed to encourage reflection on the ways in which we might classify sounds and images.

Main Contribution. The presentation reports on the planning and feasibility study being undertaken for the construction of physical and virtual tools to explore our perception of sound and music, particularly in multimedia contexts. The project, entitled *The Multimedia Thesaurus*, is designed to encourage reflection on our ways of classifying sounds, by soliciting different axis labels for classification of a vast library of short sounds and images in a (real or virtual) three-dimensional space. These include musical and visual gestures, textures, narratives, collages, and excerpts from a wide variety of musical genres and moods. Examples will be presented.

Implications. The project is expected to accelerate the progress of understanding of our perception of sound and music in multimedia contexts by directing the attention of the users to the way in which they think about music, as well as by exploring the commonality of responses. The research tool itself encourages multiple classification systems rather than searching for a single best solution, allows for continual refinement of responses, and welcomes collaborative investigation.

1. INTRODUCTION

Despite the prevalence of multimedia content in today's world - from films to flashy websites – there remains a paucity of critical language and analytical methods for investigating results of interacting sounds and images. Those working within artistic collaborations are often frustrated by the lack of common vocabulary for describing essential qualities of an existing or imagined sound. This presentation explains a project designed to stimulate exploration of these areas, by creating a playful and very rich environment designed to encourage interchange of ideas and terminology.

Central to this project is the building of a catalogue of still images, sounds and moving images of very short duration (most between 2 and 10 seconds). The catalogue contents are being drawn mainly from existing musical and visual arts repertoire of various styles and genres, as well as from nature and the human environment. They are supplemented by other sounds and images created especially for the project, either "from scratch" or based on a transformation of an existing sound or image. While many of the sounds are drawn from acoustic instruments, there are also electroacoustic samples and even a few composed with basic MIDI presets. The objective is to provide a true range of sounds and images, even to the deliberate inclusion of a few low-resolution samples.

The motivation for such a catalogue is the hypothesis that an isolation of short segments and the possibility of juxtaposing them with any one of a variety of images could provide a good framework for further exploration of our perception of multi-modal artwork. Many of the salient features of musical excerpts can be sensed within a few seconds, whereas most previous studies, for example of film music, focus on much longer excerpts according to narrative "chunking". In addition, a systematic transformation of the various parameters of an existing sound (through timbre, tempo, register, mode, etc.) permits the creation of a series of sounds where the degree of similarity can be studied. Initial images gathered have included abstract and quasi-abstract patterns from manmade and natural sources as well as specially-constructed variations of human gestures and facial expressions. Some video clips have been designed which maintain certain elements in common while superimposing different surfaces. As more colleagues become actively involved in the project, the pool of images and sounds increases.

2. CONTEXT

The Multimedia Thesaurus was designed to complement certain aspects of a larger project entitled *An Interactive Tool Kit for Music Analysis*. The *Tool Kit* is designed to alert researchers to the diversity of methods and perspectives for examining music. It presents a summary of methods (both developed and in incubation) for music analysis. Some of these methods focus on musical parameters; some also incorporate perception and cognition research, semiotics, philosophy, music and emotion, etc. By existing in a CD-Rom and web format as well as in the familiar one of an old-fashioned book, the *Tool Kit* encourages multiple forms of browsing and multiple forms of discourse: terms, metaphors, graphic diagrams, spectrographs and music notation, and audio examples. *The Multimedia Thesaurus* grew out of these plans and shares many of the same concerns, strategies, and qualities. In addition, its design resembles certain aspects of *The Armchair Researcher*, an investigative tool designed a few years ago as a kind of hybrid between the modus operandi of the music theorist and that of the music psychologist.

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3. OBJECTIVES

The Multimedia Thesaurus is being designed to stimulate discourse about sound in multimodal artworks. It attempts to investigate the factors that contribute to our perception of similarities and correspondences in the sonic and visual realms, and to examine the degree to which such perceptions may be shared among large or small groups of people. It also aims to focus attention on the potentials and shortcomings of various systems of classification of sounds.

Characteristics of time and sound are rarely discussed in our visual-based society, due in part to a lack of a suitable vocabulary, yet they exert a profound influence on our perception of many artworks. This project aims to help develop and refine a shared vocabulary and establish some common references for discussion and analysis, as well as to enhance critical reflection on time-based arts. It is designed to improve communication among artists and associates generally, and to heighten awareness of issues relating to perfomance and sound that are often overlooked by people outside those areas. As more users participate in the project, certain words, sounds, and images will be found particularly well-suited to expressing fundamental categories and correlations, and will thus become naturally integrated into a working vocabulary for description and analysis. Preliminary stages of the project include frequent meetings of artists and musicians to discuss specific artworks by members which incorporate sound and some other element. These discussions are being documented by sound and video for future reference. The idea is that through critical dialogue, we will be able to establish some particularly appropriate terms and definitions for description of such artworks. This will in turn lead to an organic growth and refinement of an appropriate vocabulary, as well as an increased sensitivity to sonic elements of an artwork. Recommendations for "axis labels" will also be drawn from these discussions.

As the project is currently based within *Hexagram – the Institute for Research and Creation in Media Arts and Technologies* recently founded by two of Montreal's universities, it is able to depend on a core of highly-qualified and interested researchers from areas of dance, film, animation, music, theatre, visual arts, and communication studies. The activities of the Institute are becoming increasingly connected to the extended arts community of Montreal and is beginning to attract visitors from around the world. The creation of a website will allow parts of the project to be available to interested players internationally.

In the belief that language evolves in communities, we are expecting that by focussing on a relatively small core bank of sounds and images, and by meeting frequently with the same core group of experienced artist-researchers, we will learn to communicate our ideas and opinions about sounds and their correspondences with images more effectively in this artificial environment. To complement the study, we will also look at less artificial examples, through presentation by group members and visiting artists of their own work, as well as through visits to local galleries and festivals. The terms and expressions which become adopted will necessarily reflect the unique characteristics of the participants and their interaction, and therefore may include some whose meaning is not immediately apparent to "outsiders". However, through discourse with visiting artists / researchers, perusal of relevant bibliography; and by disseminating information about our discussions through articles and a project webpage, we are working to base our exploration on, and explain any new refinements in the context of, existing research. Therefore, we anticipate that any new terms and expressions which do emerge from our explorations, as well as "extra" meanings to familiar words, may be able to be easily absorbed by interested colleagues.

4. DETAILS

The Multimedia Thesaurus is a project to develop and implement a playful tool for those who work in and around the time-based arts which incorporate sound. The tool's main purpose is to provide an adjustable framework of reference for discussion, analysis, and criticism of sound and multimodal art forms. This framework exists not only as an abstract concept but also, eventually, as physical three-dimensional grids linked to a computer. These grids will be built in different scales, from table-top size to a set of nesting cubes occupying a large room. An expandable array of short audio and image clips (still and moving) form a library from which the "user" will select a sub-set for sorting. The criteria for sorting the clips are chosen by the user(s) either by selecting one of several (modifiable) preset frameworks or by creating a new one. The tool will also exist in an exclusively computer-based model, with a subset on the web. The two versions will eventually hold the same array of images and sounds, thereby eventually enabling a study of the effect of the intervening technology (such as the virtual acoustic space, the resolution of the image, and the visual scale) on the user's perception and classification.

Most of the clips will be very short, isolated examples of gestures, textures, patterns, movements, etc. For the purposes of subsequent sorting, each one will be identified by a unique number, and initially cross-referenced by a variety of words, numbers, and/or graphics referring to different parameters and characteristics. Although the bank of clips is infinitely expandable, much of the initial work of the project is in selecting / creating the smallest number of clips necessary to provide adequate illustration of both the range and the degree of detail which can be examined. Therefore, a few gestures, textures, melodies, and chords have several variations of a specific type, whereas the rest of the examples represent the degree of variety. Some clips are being taken from existing artwork while others are being created specifically for the project. Because much analysis and criticism suffers from operating in a closed field without recognizing its constraints, effort is being made to include an enormous variety of sounds.

The main physical sorting framework is expected to be constructed of vertical metal poles which can produce a skeletal outline of several nested cubes and / or other appropriate shapes. The poles will be linked to a computer and speaker system, and will have numerous slots to permit the placing of physical cards which are coded to reproduce the specific audio or visual information. The user will determine appropriate labels for the various axes represented (horizontal, vertical, and inner-outer), and then sort a number of clips according to those labels. Each user's classification system will be recorded. It is expected that after a

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significant number of users have played with the system, certain tendencies for sorting may become visible. More immediately, the user will be encouraged to examine the characteristics which lead him or her to choose one place on the grid rather than another. In the main version of this "sorting grid", the outlined shapes will be large enough that the user can wander between the poles. Smaller table-top versions of the "grids" will allow for more complex shapes (e.g. dodecahedron) which may be found more appropriate for sorting. Virtual versions of these shapes will permit not only more sophisticated cross-referencing, but also the construction of "impossible" shapes that may be more appropriate for complex classification systems.

Possible "axis labels" range from colours and graphics to categories of emotion and description of musical parameters (tempo, modality, etc.). Reference is made to analogous studies such as the early development of a multi-dimensional scale for gauging similarity of musical timbres.

The presentation will describe, and report on the status of, the *Multimedia Thesaurus* project. It will also include a few examples of the samples being used, some recommended axis labels, and a description of the proposed physical and virtual models.

6. IMPLICATIONS

The project aims to accelerate the progress of understanding in our perception of sound and music in multimedia contexts. It proposes to achieve this by directing the attention of the "users" to the way in which they think about music, as well as by exploring the commonality of responses. The research tool itself encourages multiple classification systems rather than searching for a single "best" solution, allows for continual refinement of responses, and welcomes collaborative investigation. It is founded on the assumption that classification systems are useful, even though they may be most appropriately dissolved after one particular use, to be re-organized in a different way the next day for another purpose. It also illustrates the role of aesthetic design of a laboratory and its apparatus, and challenges the notion that playfulness is antithetical to purposeful research.

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