



The Interactive Multimedia Playroom & Multimedia Thesaurus

The Interactive Multimedia Playroom (IMP) is a project designed to heighten the awareness of the role of sound in art and research contexts. It investigates sound and its latent and potential correlations with space, light, colour, image, and movement, and has been designed to stimulate discourse about sound and sound / image / movement relationships, especially within artistic contexts. The Playroom consists of the design, assembly, and maintenance of a stimulating environment for exploring sounds, whether as concert music, components of multimedia or as expansions of written texts. The Playroom centers around the Multimedia Thesaurus, which presents users with a framework and specific banks of sounds and images to be “sorted” according to their salient characteristics. Just as the traditional thesaurus of words does not define those words, but instead groups them by association, the Multimedia Thesaurus does not aim to define sound characteristics, but instead encourages the exploration of the ways in which individuals and communities may interpret and describe sounds. The descriptions may be made with reference to other sounds, and/or to images, colours, movements, space, moods, and atmospheres. Unlike the traditional word-based thesaurus, the *Multimedia Thesaurus* allows users to build their own groupings and lists of associations, as well as drawing on the suggestions of previous and concurrent users. The involvement of experts from a variety of disciplines, including auditory perception, emotion & music, rhythmic analysis, music performance, composition, film, and dance helps ensure that we will be able to adequately define the issues involved and propose innovative ways to proceed with research into this very rich, increasingly relevant, and poorly-understood field. The *Playroom* is characterized by a mixture of technology and traditional aspects in a playful and easily-navigated environment, and is set up to link closely with other research projects both locally and internationally.

Rosemary Mountain - *Interactive Multimedia Playroom* - project overview

Design:

Physical clips are linked via barcode to short sound, still image, or video clips in a computer bank. Each clip is also linked to a specific database entry, giving source and copyright details, characteristics, and other useful data. A user (or "player") can scan a still image or video clip with a wireless Bluetooth scanner, and while looking at it, scan a sound clip to study the interaction of the two. The players can also sort the clips into trays, onto racks, or onto a position on one of several chains which together represent a 3-dimensional grid, representing those used by psychologists in similarity ratings. Each time a person or group "sorts" a set of clips, this information is added to a database, allowing for the eventual accumulation of rich data banks. The video and sound clips are all approximately ten seconds in length - long enough to provide a sense of identity but short enough to isolate a particular mood or characteristic. In addition, the length does not much exceed that commonly associated with short-term memory, meaning that the listener / viewer will normally be able to retain the entire clip as a single entity in memory.



Sound clips include a diverse representation of:

music

"classical"; 20th century (including electroacoustic); traditional; "world/ethnic"; jazz, pop, country, crossover, etc.; diverse cultures; instruments, ensembles, voice, timbres, etc.

nonmusic

natural (birds, mosquitos, water, wind,)

manmade (cars, appliances, clocks, trains, factories...)

and including signals / symbols; associations / meanings (sirens, bells; typewriter, gunshots)

with examples of: linear polyphony, spatialization, multiple strata, heterophony, homophony, atonality, different melodic contours, different qualities of recording, MIDI renderings, mechanical instruments, tempi, complexity, etc.

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Video and still clips likewise present a variety of realistic, abstracted, and abstract shapes and designs, including natural, manmade, urban, rural, artistic, mundane, complex, simple, etc.

The labels on the trays, racks and grids can be chosen by the host or by the user; suggestions for labels are drawn from psychology and musicology. They may refer to sonic parameters, visual associations, mood, genre, or the nature of the sound-image interaction.

Examples of labels for grids:



happy / sad;
agitated / calm;
natural / artificial;
like / dislike;
urban / rural;
slow / fast;
dark / bright;
complex / simple;
dense / sparse;
musical / nonmusical;
familiar / strange;
etc.

The IMP is being developed to facilitate easy access to interrelated resources being developed by other researchers. Variable lighting, décor, acoustics, etc. will permit the creation of different atmospheres to illustrate how the physical space itself can impact reception. A principal objective of the project is to increase users' sensitivity to and understanding of the different characteristics of sounds and the effect of accompanying colour, shape, and movement. Longterm goals include refining a vocabulary for critical discourse of sound in multimedia and developing a nucleus of researchers with enhanced awareness of sound and its potential in communicating specific ideas, moods, and images.

By isolating short fragments of sounds and video, and by associating the usually ephemeral sounds with handholdable objects that are infinitely rescannable, users find it much easier to compare, trying different configurations (same sound with several images and vice versa). In addition, the playful and generally inviting nature of the project encourages people to play, and hence to enter into discourse about sound and image. By doing so, the words used to talk about the images and sounds become naturally more refined, as we move towards more articulate means of expressing our perceptions and reactions.

The Playroom is also enhanced by other "props" to emphasize its function as a true resource centre where informal discussion and exploration are valued. These props range from comfortable chairs, bookshelves, and computers to simple sound-producing objects: pieces of stone, wood, and metal are available for touching or for striking with soft and hard hammers, to allow illustration of these familiar sounds and rhythms. We have prepared short definitions of some key terms and concepts, as well as rules for different "games", presented as laminated cards for easy consultation. We also integrate a SmartBoard (donated to the project by SmartTechnologies), which enables users to draw in response to what they hear – drawings which can subsequently be added to the bank of video or still image clips.

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Potential users:

composers / sound & multimedia artists / filmmakers
wanting to investigate, play with &/or organize sounds & sound / image interactions

collaborators in multimedia projects
wishing to understand each other's preferences & descriptions

psychologists / communication / information retrieval researchers
wanting to understand consensus on labelling / similarity judgements / perception

educators in music and multimedia
as a tool for explaining terminology and correspondences

general public
raising consciousness about sound

The *Interactive Multimedia Playroom* project has been / is being supported by funding from:

- Hexagram Institute for Research / Creation in Media Arts & Technologies
- Centre Interuniversitaire des Arts Médiatiques
- Social Sciences and Humanities Research Council (travel)
- Concordia University Faculty of Fine Arts
- Smart Technologies

Team members include:

Project concept & design:

Rosemary Mountain - (Concordia: Music composition, analysis, electroacoustics)
Harry Mountain (independent artist / researcher) - concepts, creative solutions

Psychology - consultation for perception & cognition issues

Dr. Annabel Cohen (UPEI, Charlottetown: psych of film music)
Dr. Rolf Inge Godøy (Univ. of Oslo: analysis, composition) musical imagery, gesture
Dr. Stephen McAdams (McGill CRC: Director of CIRMMT) –perception & cognition
Claire Piché (UQAM, PhD programme – music / auditory perception)

Testers / players - interested colleagues from various disciplines

Dr. Christine Beckett (Concordia; theory & aural perception)
Jean-Claude Bustros (Concordia; Filmmaker)
Silyv Panet-Raymond (Contemporary Dance – Concordia)
Cilia Sawadogo (Concordia: Animation)
Dr. Marcelo Wanderley (McGill: Music Technology)
Leah Barclay (Australia; independent composer/musicologist)

Virtual systems

Dr. Pierre-Leonard Harvey (UQAM) – virtual communities
Dr. Sudhir Mudur (Concordia: Computer Science) – virtual reality expertise

Classifications / reference

Dr. Leigh Landy (De Montfort, Leicester, UK: music technology / musicology)
Dr. Louise Poissant (UQAM: Communications)
Dr. Ricardo Dal Farra (Buenos Aires; electroacoustics, musicology)

University of Aveiro node:

Dr. Oscar Mealha (UAveiro: Dept. Of Communication & Art-chair)
Dr. Ana Veloso (UAveiro: Dept. Of Communication & Art) games, virtual-real issues
Dr. Teresa Roberto (UAveiro: Dept. Of Languages & Culture)

Rosemary Mountain - *Interactive Multimedia Playroom* - project overview



at Oboro April-May 07



set-up at Oboro April 07

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Oboro- opening night-research assistant Randolph Jordan speaking with guest



In the Hexagram facilities, Concordia (July 07)

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children experimenting with system (2006)



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Since its inception, the Multimedia Thesaurus and Interactive Multimedia Playroom have been presented both conceptually and in physical installations in a variety of contexts:

Sept. 2003 - “Flexible Frameworks: The Multimedia Thesaurus” presented at the V triennial *ESCOM* conference (European Society for Cognitive Studies in Music), Hannover, Germany, – see *Proceedings of the 5th triennial conference of ESCOM*.

Sept. 2005 - “MMT Travel Kit” - demonstration presented at the *International Computer Music Conference*, Barcelona,

Oct. 2005 - “Tool / Game / Environment: The Interactive Multimedia Thesaurus & Playroom” *EMS-05* Montreal, as both paper presentation and installation.

2005-2006 - Various presentations of installation to Hexagram guests and sponsors, including municipal, regional, and federal government agencies and ministries, Cirque du Soleil and Daniel Langlois R&D teams, London Science Museum, etc.

May 2006 - Installation at UQAM – Pavillon des Sciences in the context of Montreal’s first annual *24 Heures de Science*.

June 2006 - “Report on the *Interactive Multimedia Playroom* and *Hexagram*” - Deca In Festa -Department of Communication and Art, University of Aveiro, Portugal – also to the Director of the Fabrica Centro de Ciência Viva Science Museum of Aveiro.

Aug. 2006 - “Report on the *Interactive Multimedia Playroom*” - University of Prince Edward Island, Dept. of Psychology, – to students and professors from various disciplines.

Oct. 2006 - “Name that mood! Describe that tune! Invitation to the IMP” – poster and demo at *ISMIR [International Society for Music Information Retrieval]*, Victoria, BC, Canada

April 14-May 12, 2007 - first major public installation of the Interactive Multimedia Playroom - Oboro Gallery, Montreal, Canada.

July 2007 - installation presented as special event at the Society for Music Perception & Cognition conference, Montreal.

[upcoming] Oct. 2007 - “Playful Tools, Serious Questions” paper presentation and full installation for the conference of the Canadian Acoustical Association, Montreal.

For more information: www.armchair-researcher.com