Vortex

Visual Aural Textual.

One language.

by Robert Appleton

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Ontario College of Art & Design University

in partial fulfillment of the requirements for

the degree of Master of Fine Arts

in Interdisciplinary Art, Media and Design

The Music Gallery

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Author's Declaration

I hereby declare that I am the sole author of this thesis.

This is a true copy of the thesis, including any

required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically

available to the public.

Robert Appleton

Vortex. Visual Aural Textual. One Language.

Master of Fine Arts, 2010

Robert Appleton

Interdisciplinary Masters in Art, Media and Design

Ontario College of Art and Design University

Abstract

Vortex. Visual Aural Textual. One language is an interdisciplinary art form — improvising the visual, aural and textual mediated by technology and revealing that one language exists at their intersection.

These three separate art forms have largely been held by our culture as distinct subjects. They have been connected in a documentary way by our most popular communications media, film and television — yet they have less frequently been used as pure interdisciplinary form with which to explore their own synergy. Perhaps the oldest form to express the singularity of sound text and image is the ancient OM chant.

As a performance medium and compositional theory, *Vortex* is a catalyst for a deeper level of communication than we experience with any one or two media. It is documented by means of performance, gallery presentation, research and publication.

Acknowledgements

Thanks to Ontario College of Art and Design University and the Graduate Program in Interdisciplinary Art, Media and Design for their generous support of my graduate research; my principal advisor Lenore Richards, my Graduate Committee (Dr Vladimir Spicanovic, Dr Bill Leeming and Greg Van Alstyne) my distinguished External Examiner Dr Austin Clarkson. OCADU faculty and staff, (Martha Ladly, Alice Brummell, Sarah Hildebrandt, Michael Owen, Dot Tuer, Eric Nay, Judith Doyle, Barbara Rauch, Lynne Milgram and Luke Painter). I am indebted to visiting artist Lillevan Pobjoy for his inspiration and assistance during my first semester. Special thanks to Nick Stedman from Ryerson, Pieter Coussement, artistic researcher at the Institute for Psychoacoustica in Electronic Music, University of Ghent, Belgium and Gilad Woltsovitch, sound designer and researcher at Harvestworks New York for their help with my primary software Max/MSP/Jitter. Bentley Jarvis from OCADU taught me the basics of Max programming. Sandy Williams, professional jazz guitarist and fellow-student of George Russell's Lydian Chromatic Concept of Tonal Organization, helped me create sound files to work within Russell's concept in my translation of his composition *About Time*, *Events 1-10*. I'd also like to express my appreciation and admiration to my fellow-students in the IAMD and Curatorial MA Programs. And last but by no means least, I thank my wife, Professor Catherine Jo Ishino, for her unwavering encouragement, support and advice.

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Preface

> *"Among semioticians, information theorists and media experts it has been commonly held for some years that reality can no longer be captured and described with linguistic means alone. It is changing too quickly and growing too complex. Clearly language as our most important medium of communication has reached an impasse... A language of pictures, drawings, diagrams and photographs is in the process of supplanting language, or at least extending and enriching its scope."* Armin Hofmann in *Notes on the Language of Signs and Symbols*, Birkhauser 1989.

Language throughout history has been too closely associated with only one vocabulary — the word. Changes in philosophy, society and in technology have made the new communications media more accessible to each of us than ever before.

My work in this thesis deals with an investigation into expanding our idea of language further. Improvising the visual, aural and textual simultaneously in real-time uncovers necessary new meanings at the heart of our communication process. For the same reasons[1] that Gyorgy Kepes published his *Language of Vision* in 1944 at the New Bauhaus in Chicago, I have created this thesis and language of words, pictures and sounds. I called an earlier publication of mine *A Word is a Picture*, which became a design class. In it I did extensive ethnographic research with students in Asia, the Middle East and the West.[2] That was followed by *A Picture is a Sound* which became another class. I wonder if this thesis represents the final class in the series — *A Word is a Picture is a Sound?*

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[1] "...this knowledge will generate a genuine 'language...'" Gyorgy Kepes, 1938 in *Bauhaus*, Hans M. Wingler (Cambridge, MIT Press, 1969) p 197

[2] Parsons School of Design, New York 1999-2000, China Central Academy of Fine Arts, Beijing 2006-2007. Mimar Sinan University, Istanbul, 2005.

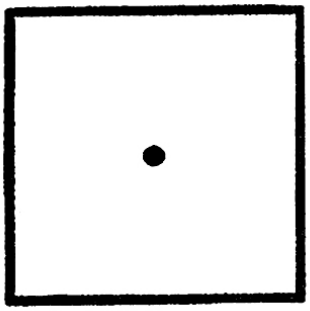
Introduction to the Thesis

I have written my thesis in an interdisciplinary manner over a period of a year in several media. It is gathered from many sources and rare moments of extreme clarity. It comes from: short paragraphs scrawled in notebooks such as the one this introduction was taken from; essays and keynote presentations on my computer, first critiqued by faculty and students and then edited by me; contributions to online blogs of my own and others; facebook responses to questions or comments by complete strangers whose first language was often not English; remembered conversations with everyone I know, and the dreams and apparitions which are a normal part of daily life.

My argument here is that there is new vocabulary at the intersection of the visual, aural and textual which reveals itself in freely improvising among several media over time — using contemporary rather than classical forms.

Classical forms provide the basis of our knowledge and have been honed over generations by many of our greatest minds. They also however, can obscure contemporary and emerging ideas, because they are immersed in and inseparable from the echoes of their history and the language which has been built around them to describe, explain and defend. New and emerging forms are more free of these assumptions and definitions and are therefore more able to re-combine in new ways creating different and more contemporary meanings.

Paul Klee, *Pedagogical Sketchbook*,
1925, Bauhaus Dessau, p 20
Praeger Publishers, New York, 1953.

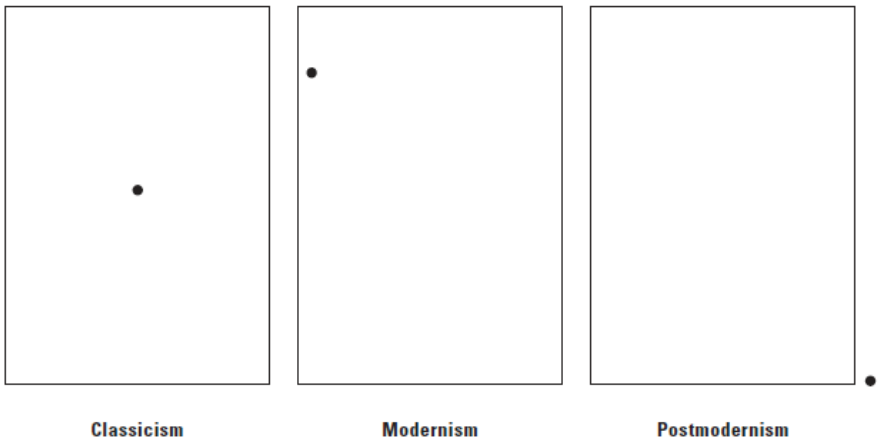


Wassily Kandinsky, *Point and Line to Plane*,
1925, Bauhaus Dessau, p 36
Dover Publications, New York, 1979.

In the classical tradition ideas are created in a triangular fashion, and wisdom tells us that the best of these rise to the top over time, thus revealing a “higher truth.” Note that both images above (Klee’s triangle and Kandinsky’s square) can be viewed as the same image — one viewed from the front and the other from the top. Both represent a state of idealized symmetry. This same structure describes traditional corporate or institutional hierarchies — the top (or the center in the right-hand image) representing a single, truth.

When ideas combine in unexpected ways as they tend to do in the contemporary world, they rarely form a triangle of reason, because among other things, they come from different belief systems (different cultures) simultaneously. In 1965 Richard Feynman was awarded the Nobel prize for revealing that multiple truths exist in quantum physics at the same time. His multiple history (or sum-over-histories) approach averages all possible truths to determine a better description of reality. This is a scientific description of a state we accept as normal in the contemporary arts. This form would seem closer to a series of points revolving around a center (a soup of related truths) where no single idea dominates and many contiguous concepts exist in the same moment.

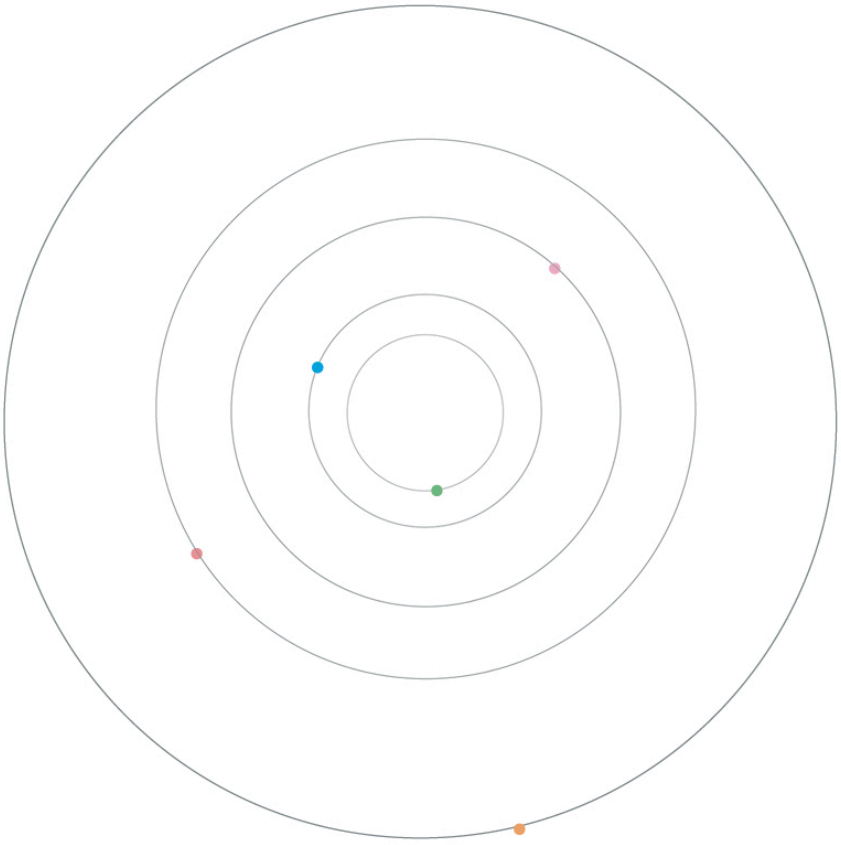
Gandhi expressed the same idea in relation to ethics in 1926 *"...seeing that we will never all think alike and we shall see Truth in fragment and from different angles of vision... imposition of (that) conduct upon all will be an insufferable interference..."*[3]



Robert Appleton. *Three Boxes*,[4] 1994, New York. Related the evolution of form in art and design from Greco-Roman through modernist to postmodernist times by identifying aspects of symmetry.

[3] Mahatma Gandhi, *Young India*, September 23 1926

[4] Robert Appleton. *About Time: A Theory of Design, Music and the Play Instinct.* Introduction to *Tempus Fugit.* Barcelona. Index Book, 2009.



Robert Appleton, *The Fourth Box,* 2001, New York. My fourth 'box' was described in 1998 by curator Nicolas Bourriaud as *Relational Aesthetics*, the state after postmodernism. This image is from my website.[5]

As we trace a history of language through the work of individuals such as Saussure, and Chomsky, it is striking to me that (perhaps because of their general use in the living of everyday life) our verbal languages have changed more gradually than other arts and sciences. This seems to be the principal reason why a new vocabulary of the visual, aural and textual has evolved more slowly than expected. Does this mean that a freeing of the rules of grammar in the textual will result in new meaning? I believe it does.

[5] Robert Appleton. http://www.robertappleton.com (accessed August 1 2001)

My thesis *Vortex. Visual Aural Textual. One Language* uses languages in a cyclical fashion — seeking contiguity, diversity, indeterminacy and truth through interaction and improvisation.

Background of Interdisciplinarity in the Visual, Aural and Textual.

The three components of *Vortex* language are visual, aural and textual.[6] First I will describe their key components and contextualise them.

These relationships are interesting to me in the way they document the development of Interdisciplinarity, born perhaps of political and artistic ideals (and related to the Bauhaus and Gestalt Psychology) which continued to evolve as major forces of change in the 20th century, through the movement of global populations caused by various forms of social unrest such as the World Wars. Could east and west, art and science, language and music have created such relationships today without these struggles?

The Visual

One of the principal incubators for Interdisciplinarity in the 20th century was the Bauhaus, formed by Walter Gropius in 1919. It provided opportunities to artists, designers, musicians, dancers, thespians and philosophers to create a laboratory of the arts: an educational institution; a body of research and perhaps most importantly, a language of

[6] As a pedagogy, *Vortex* incorporates all three learning domains: cognitive, affective and psychomotor, from B. S Bloom, *Taxonomy of Educational Objectives* (Boston, Allyn and Bacon, 1956). In practice it stresses the psychomotor in R. H. Dave, *Developing and Writing Behavioral Objectives* (Tucson, Educational Innovators Press, 1975)

"vision" similar and equal to verbal language. Language of Vision (Kepes), Vision in Motion (Moholy-Nagy), Pedagogical Sketchbook (Klee), Point and Line to Plane (Kandinsky) began a cultural inquiry into artistic practice utilizing technology, which predicted what has since become most associated with the computer. Contemporary design was born of this vision. Along with photography and film, it was one of three new arts to fully emerge in the 20th century. Part of the uniqueness of these new arts was as a point of convergence for all previous art forms.

Many artists of this period were interested in translating between two media. Arnold Schoenberg, who's twelve tone system had taken music closer to abstraction also painted. "Kandinsky and Oscar Kokoschka paint pictures in which the external object is hardly more to them than a stimulus to improvise in color and form and to express themselves as only the composer expressed himself previously" (Der Blau Reiter Almanach, 1912). Lazlo Moholy-Nagy's "Typophoto" used photography and text as a single medium. Marinetti's Zang Tumb Tumb (Adrianopoli, October 1912) simultaneously implied kinetic typography and sound by innovating the use of language. Klee and Kandinsky were both involved with what later became Visual Music.

Moholy-Nagy's inclination was to reduce photography to language and use it "in the form of 'phototext' in place of words, as a precise form of representation so objective as to permit of no individual interpretation.[7]" Kandinsky suggested in "Little Articles on Big Questions" (1919) that simple geometric shapes constituted a "sphere of draftsmanship with... limited means of expression, akin to a language without declensions, conjugations, prepositions, or prefixes."

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[7] Lazlo Moholy-Nagy. *Painting, Photography, Film.* The Bauhaus, 1925.

In 1937, with the rise of Nazism, Moholy left Germany and was appointed director of the New Bauhaus in Chicago (which became the Institute of Design in 1944). He brought fellow Hungarian artist and designer Gyorgy Kepes with him. They continued the teachings of the Bauhaus and in 1938 Kepes wrote “the eye is the agent of conveying all impressions to the mind... Development of this knowledge will generate a genuine ‘language of the eye,’ whose ‘sentences’ are created images and whose elements are the basic signs, line, plane, halftone gradation, color, etc.[8]”

The New Bauhaus also evolved conceptual thought. “...within eight semesters the student participates in general courses given by experts in biology, sociology, economics, anthropology, general semantics, history, literature, art history and intellectual integration... a course which Charles Morris created for the Institute.[9]” Charles Morris’s writing developed the theory of “semiotics” in America following the work of philosopher Charles Sanders Peirce. In the terms of Morris’s semiotics, an icon resembles its object, a symbol has a conventional or arbitrary association with its object, and an index stands in a relation of spatial or causal contiguity to its object — it either points to it (an arrow) or preserves its physical trace (a footprint or a photograph). The branch of sign which would have been of most interest to Moholy-Nagy and Kepes, and also to Kandinsky and Klee, was the index.[10]”

Within a short time artists like Ed Ruscha were deconstructing semiotic relationships to create other forms of indexical thought with text.

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[8] Gyorgy Kepes, 1938 in *Bauhaus*, Hans M. Wingler (Cambridge, MIT Press, 1969) p 197

[9] Laszlo Moholy-Nagy, *Vision In Motion* (Paul Theobald, Chicago) p 70

[10] Ellen Lupton, *Modern Design Theory* (unpublished essay, 1988) http://elupton.com/2009/10/modern-design-theory (accessed August 10 2010)

Oskar Fischinger, who worked for Disney on the film Fantasia had grown up in Bauhaus Germany, and became a violinist and engineer before he found film animation. He was however very aware of the zeitgeist of his times.

> *"Around 1940, the experimental filmmaker and champion of visual music Oskar Fischinger tore out of a catalogue color reproductions of the work of Wassily Kandinsky and Rudolf Bauer — painters who, like Fischinger, were involved with pushing visual art toward the condition of music. To these abstract images Fischinger applied small renderings of Mickey and Minnie Mouse that he had carefully cut out of a Walt Disney comic book. Throughout the resultant collages, Mickey and Minnie gesture toward the abstract compositions, staring wide-eyed, aghast at the audacity of the artists involved in making such bizarre nonobjective works."*[11]

Gyorgy Kepes established The Center for Advanced Visual Studies at MIT in 1967, where Muriel Cooper was briefly a fellow before founding the Visible Language Workshop with Ron MacNeil in 1975. "*I was convinced that the line between reproduction tools and design would blur when information became electronic and that the lines between designer and artist, author and designer, professional and amateur would also dissolve*."[12]

When asked to write an article about the Visible Language Workshop for the MIT Department of Architecture in 1980, she created a visual essay which included a picture of a letter she wrote to the editor describing the mission of VLW.[13]

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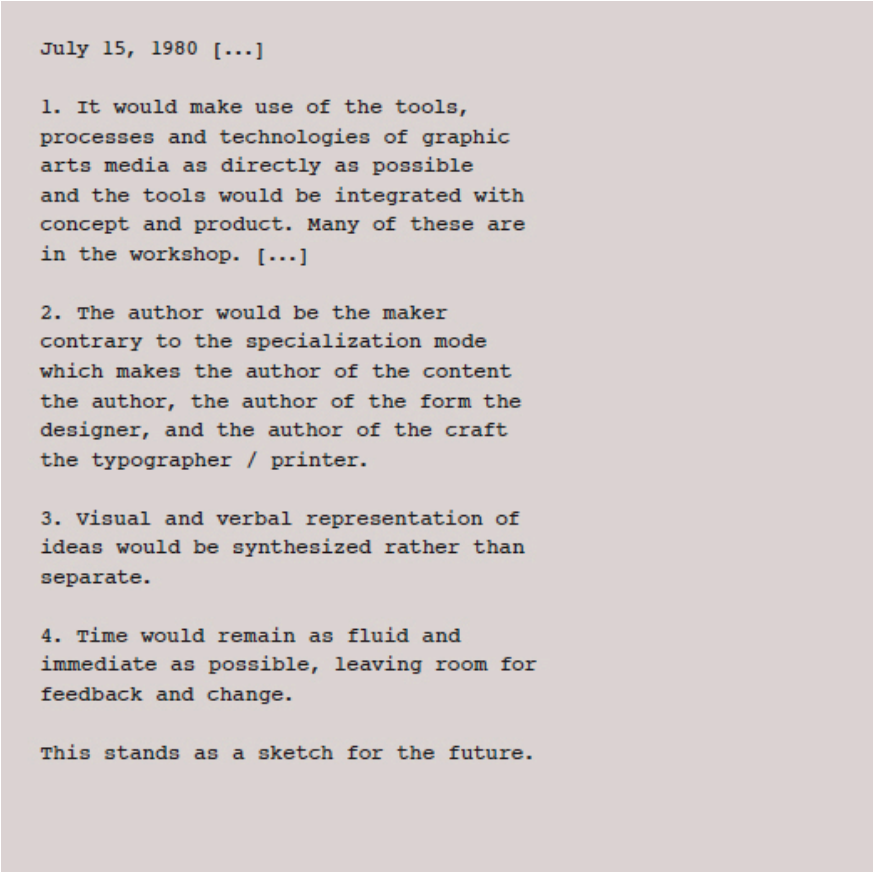
[11] Kerry Brougher, *Visual Music*, Thames & Hudson 2005

[12] Tom Wong. Muriel Cooper Memorial Exhibition, Pamphlet and exhibition materials, 1994.

[13] Muriel Cooper and the Visible Language Workshop. *Words, Images, Tools and Ideas.* PLAN, MIT School of Architecture and Planning, 1980.



Muriel Cooper, *This Stands as a Sketch for the Future*, 1980

The personal computer was invented and first released in the United States in 1980. Muriel Cooper in her work at MIT had been using and defining the uses for computers and a visual language of the computer since 1975. She could be said to have helped define the direction of new media art and design from this time forward.

Armin Hofmann's quotation about the need for an evolved vocabulary of the textual and visual which begins my preface, came from his experience as a design practitioner and teacher at the Basle School of Design Switzerland from 1947 to 1987. His ideas influenced many — including his colleague Wolfgang Weingart who arrived there in 1968

and began with experimental handset typography, which segued in the mid-70's to photographic film overlay, and in early 1985 to the Apple computer.[14]

The Art and Technology Program at LA County Museum of Art which began in the 1960's played a role not unlike that of MIT with Muriel Cooper in the US and The Basle School of Design with Armin Hofmann and Wolfgang Weingart in Switzerland. The most influential work from that period for me is that of Robert Irwin and James Turrell, who together with the perceptual psychologist Ed Wortz at the Garrett Corporation, worked primarily on philosophical rather than technological issues, which continued for many years after the program ended. LACMA documentation indicates that the relationship with Wortz and Richard Feynman had a lifelong influence on both the artists and scientists work.[15] I met Robert Irwin in the late 1980's when he was working on a number of Public Art projects at Miami Airport. I heard him speak at Yale and spent several weeks communicating with him about a poster project of mine for New Music America Miami. His early involvement with philosophy evolved his view of physical form beyond painting and into the phenomenological. Irwin's work with space, light and the environment have influenced my sensibility since this time of our meeting. A comment he made after one of our long telephone conversations is how 'musical' he found my artistic 'voice'.

A relationship between the visual, aural and technological grew throughout the 20th century — all over the western world. Why did it not become a single language then?

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[14] Wolfgang Weingart, *Weingart: My Typography Instruction at the Basle School of Design/ Switzerland 1968-1985*, Design Quarterly 130 (Walker Art Center and MIT, 1985) p 9

[15] Maurice Tuchman, *A Report on the Art and Technology Program of the Los Angeles County Museum of Art* (Los Angeles, Los Angeles County Museum of Art, 1967-1971) p. 46, 127

The Aural

> *"The whole environment was rediscovered — rough pieces of wood and wood shavings, steel wool, lengths of wire and rope... It was the beginning of a period of fantastic 'handcraftsmanship' and the newly awakened sense of discovery found inexhaustible treasures of textures and possibilities of combinations"*[16] Johannes Itten, one of composer Stefan Wolpe's teachers and major influences at the Bauhaus in Weimar.

Composer Stefan Wolpe's life[17] is a key metaphor for the transference of visual knowledge to the musical or aural realm. Wolpe began attending the Bauhaus in 1920, where (after a more conventional classical music education) he sat in the studios of Johannes Itten, Paul Klee and Oskar Schlemmer, attending lectures by all the masters including Lionel Feininger, Walter Gropius, Kandinsky, Mondrian and van Doesburg. This experience combined with the study of Joseph Hauer's and Arnold Schoenberg's Twelve Tone systems appears to have influenced Wolpe to be aware of contemporary sound in the same way as image — relating to texture and granularity, rather than melody, harmony and rhythm.[18] First Hauer,[19] then Schoenberg and his students Webern and Berg (through what was called the Second Viennese School) invented serialism, where the 12 notes of the chromatic scale are arranged into a series, or 12-tone row,[20] that becomes the basis for melody, counterpoint and harmony. This changed the direction of music from a melodic to an abstract form. In complete contrast to previous musical forms,

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[16] Johannes Itten, *Design and Form: The Basic Course at the Bauhaus* (New York: Van Nostrand, 1975) p. 34

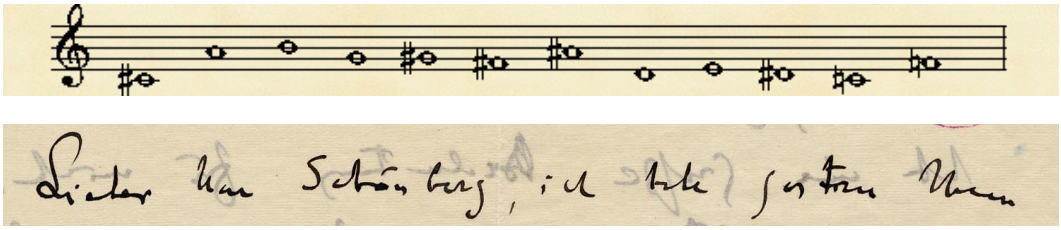
17 Stefan Wolpe, Biography, http://www.wolpe.org/page1/page1.html (accessed August 10 2010)

18 Schoenberg's *Die Glückliche Hand* (*The Fortunate Hand*, 1910-1913) used sound and colour together

[19] Oxford Music Onilne. Twelve-note composition http://www.oxfordmusiconline.com.ezproxy.lib.ryerson.ca/subscriber/article/grove/music/44582#S44582.1 (accessed August 30 2010)

[20] Center for Computer Assisted Research in the Humanities at Stanford University http://www.ccarh.org/publications/data/humdrum/tonerow (accessed August 10 2010)

serialism obliterated traditional harmonic organization. No single note served as a musical goal, and tonality—as it had been known from the 15th century—ceased to be a unifying musical force. Other elements including rhythms and tone colors were also serialized. And tone colors or timbre, rather than melodies or scales, could now be represented as music. Kandisnky recognized this and said in a letter to Schoenberg "In your works, you have realized what I, albeit in uncertain form, have so greatly longed for in music. The independent progress through their own destinies, the independent life of the individual voices in your compositions, is exactly what I am trying to find in my paintings."[21]



Above, *Schoenberg tone-row 5 piano pieces Op 23*, 1920. Below, *Correspondence from Kandinsky to Schoenberg,* 1923.[22] Itten and Hauer had a similar relationship, and together developed a wheel of colour and the chromatic scale.

In 1938 Wolpe and his second wife the Romanian concert pianist Irma Wolpe (née Schoenberg) arrived in New York City. Through the 1960's, he taught and/or influenced many of the New York classical and jazz avant garde including David Tudor, Morton Feldman and George Russell. Despite recognition from Theodor Adorno, he struggled until the 50's when he became director of Black Mountain College. When we view history through the life of the Wolpes, the Bauhaus influence on contemporary culture appears all the more profound:

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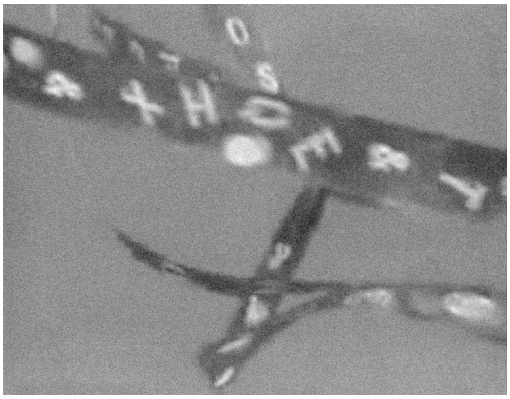
[21] Arnold Schönberg Center http://www.schoenberg.at (accessed August 10 2010)

[22] Arnold Schönberg Center http://www.schoenberg.at (accessed August 10 2010)

> *"David Tudor's genius was evident from early childhood, but it was not until 1944, when he became a piano student of Irma Wolpe and a composition student of Stefan Wolpe, that Tudor began to realize his true potential. The Wolpes prepared Tudor for his extraordinary career as a path-breaking piano virtuoso and champion of the avant-garde... Tudor's later path as a composer of live electronic music is traced back to his years of apprenticeship."*[23]

Rainforest (1 1968, IV 1973), Toneburst (1974) and Neural Synthesis (1992) create immersive sound space of a kind my work aspires to. Neural Synthesis uses the software 3-Space, developed for this project by Rick Bidlack at The Banff Center.[24] Sea Tails (1983) is a collaboration with kite artist Jackie Matisse and filmmaker Molly Davies on a six-monitor video piece, in which sound, text and image occur underwater.[25]



Sea Tails, 1983. The Art of David Tudor http://www.getty.edu (accessed August 10 2010)

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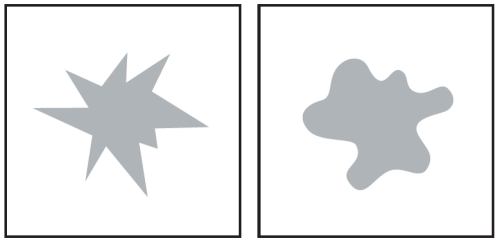
[23] Austin Clarkson. *David Tudor's Apprenticeship: The Years with Irma and Stefan Wolpe.* Leonardo Music Journal, Vol. 14, MIT Press 2004, p 5-10

[24] *Album Notes, Neural Synthesis* http://www.lovely.com/albumnotes/notes1602.html (accessed August 10, 2010)

[25] *Sea Tails. A Video Collaboration.* http://www.getty.edu/news/press/exhibit/seatails.html (accessed August 10, 2010)

The Kiki and Bouba Experiment

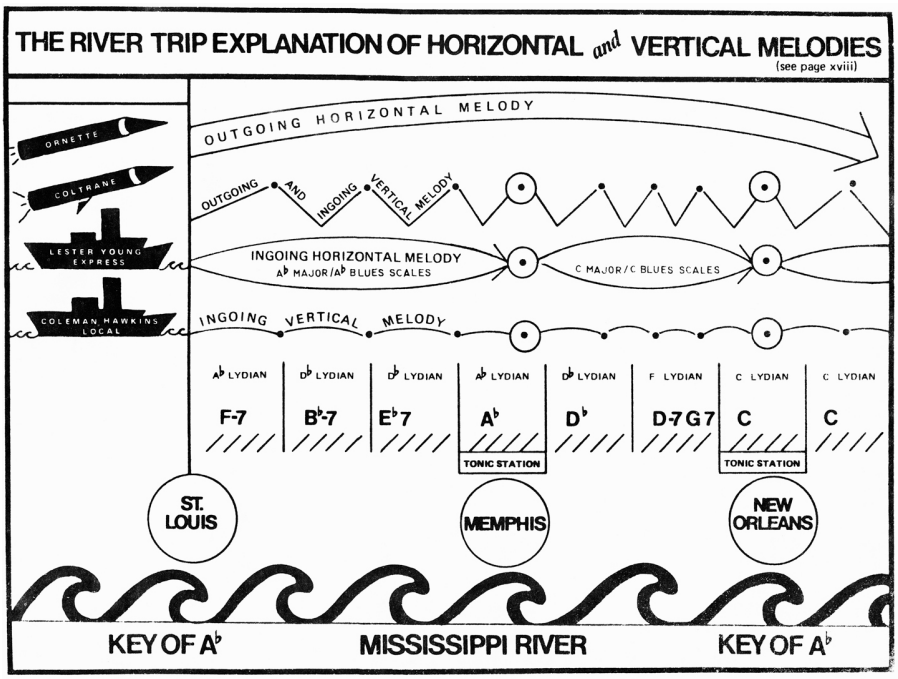


> *"In an experiment designed by the Gestalt psychologist Wolfgang Köhler (1929) and further refined by Werner (1934), two drawings like the ones in Figure 1 were to a variety of people. When asked, "Which of these is a 'bouba' and which is a 'kiki'?," over 90 percent of people decided that the round shape is the "bouba" and the pointy one is the "kiki." The overwhelming verdict is striking... we see an isomorphism between audio frequencies and frequencies in another domain... Thus, analysis in the frequency domain provides a way to generate a meaningful mapping from timbres to shapes."* [26]

The sound/shape relationship of kiki and bouba indicate the possibility of mapping to the semiotic and hence musical timbre to shape. Timbre describes all of the aspects of a musical sound that do not have anything to do with the sound's pitch, loudness, or length. Timbre, also called "tone color" is the color of music.

[26] Randy Jones and Ben Neville, Creating Visual Music in Jitter, Computer Music Journal, 29:4, pp.55 — 70, Winter 2005, MIT Press

George Russell's River Trip Diagram



George Russell, *River Trip,* 1959

Jazz music exists as an art of interaction, representing a synthesis of the oral traditions of Africa with folk and contemporary music theory. George Russell was the principal theoretician of contemporary jazz. His Lydian Chromatic Concept of Tonal Organization[27] influenced the evolution of modal jazz through the work of John Coltrane, Miles Davis and Bill Evans, allowing greater freedom with control and expanding the musical vocabulary. His work is significant here not only for his discovery of tonal gravity, which as helped musicians navigate freedom and control while stepping aside from equal temperament (the classical system of tonality built on limitations in the physical construction of the piano).

[27] George, Russell, *The Lydian Chromatic Concept of Tonal Organization*, Concept Publishing, 1959, 1961, 2001

Russell's "River Trip" diagram, above (1959) describes jazz music's evolution accelerating over a mere ten years, through a process of separation from melody and a movement towards total abstraction — and following a line from Coleman Hawkins through Lester Young to John Coltrane and Ornette Coleman. Aside from musical evolution this also represents a political evolution through the continuing liberation of black culture in America. Russell's Lydian Chromatic Concept of Tonal Organization suggests that all sound exists within a system of tonal gravity. For me, the most significant aspect of Russell's tonal gravity in the context of music's evolution from a scale-based classical form (like that of Bach or Coleman Hawkins) to a sound-based contemporary form (like that of David Tudor or Ornette Coleman) can be summarized by his description of Ornette Coleman's 'free' improvisation as "keyed to the gravity of the single overall tonic... (which is)... so broad that it allows Coleman to concentrate on other things like the meaning of the tune or the idea suggested by a single tone, or the idea suggested by the preceding idea."[28] He later described "the broader-based gravities" as Supra-Vertical Tonal Gravity. In 2005 he told me me that he had found a way of reducing his Lydian Chromatic Concept of Tonal Organization to a single note, which unfortunately remained unpublished when he died in 2009.

These expanded vocabularies of new music, via Schoenberg, Stockhausen, Edgar Varese, John Cage, David Tudor, George Russell, Ornette Coleman and many others have made sound a foundation of contemporary thinking from the 20th century on.

As part of this thesis I have created a website called hyperimprovisation in which I list many of the contemporary performers and organizations in new music and electronics as

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[28] George Russell, *The Lydian Chromatic Concept of Tonal Organization*, Concept Publishing, 1961, p xix

well as performance artists from theatre, art and design. It includes links to video and audio files as well as to books and articles and organizations which have grown out of the explosion of forms created with aural content. Please review it here http://www.robertappleton.com/hyperimprovisation/index.html.

Note: A fully illustrated listing of this website content appears in the Artistic Practice Review.

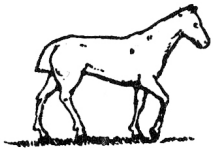
The Textual

Ferdinand de Saussure and the Relationship Between Image, Sound and Language.

1. *Sign, Signified, Signifier*

Some people regard language, when reduced to its elements, as a naming-process only—a list of words, each corresponding to the thing that it names. For example:

ARBOR



EQUOS

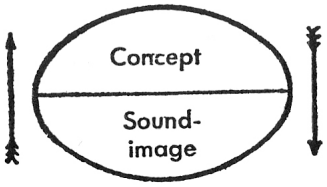
etc. etc.

[...]

The linguistic sign unites, not a thing and a name, but a concept and a sound-image.[1] The latter is not the material sound, a purely physical thing, but the psychological imprint of the sound, the impression that it makes on our senses. The sound-image is sensory, and if I happen to call it "material," it is only in that sense, and by way of opposing it to the other term of the association, the concept, which is generally more abstract.

[...]

The linguistic sign is then a two-sided psychological entity that can be represented by the drawing:



In the above excerpts Ferdinand de Saussure creates the argument that language is a system of signs or semiotics. In each linguistic sign, a signifier is coupled with something signified. Signs are established solely by distinctions between themselves and other signs within a system. A linguistic system, he says, "is a series of differences of sound combined with a series of differences of ideas... and this system serves as the effective link between the phonic and the psychological elements within each sign."[29]
This clearly established the relationship between image, sound and language when *Course in General Linguistics* was first published in 1950.

Chomsky's Generative Grammar and Lehrdahl and Jackendoff's Generative Theory of Tonal Music.

Beginning in the 1950s Noam Chomsky developed his theories of a Generative Grammar[30] while a student at Harvard. The term 'generative grammar' refers to the set of rules that enables us to understand sentences. Chomsky's ideas became related to generative, computer-based music by Winograd (1968),[31] as well as Lindblom and Sundberg (1972), Steedman (1973), Longuet-Higgins (1978) and Johnson-Laird (1991). Perhaps the most comprehensive example of this relationship was created by Fred Lehrdahl and Ray Jackendoff, and published in 1983 by MIT Press as *A GenerativeTheory of Tonal Music*.[32] In 1973 Leonard Bernstein had advocated a search

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[29] Ferdinand de Saussure, from Course in General Linguistics. New York. McGraw Hill, 1966, pp 65-8

[30] Noam Chomsky. *Syntactic Structures*, The Hague. Mouton de Gruyter 1957, 2002.

[31] Terry Winograd. *Linguistics and Computer Analysis of Tonal Harmony,* J. Music Th,. 12, 1, 1968. pp. 3-49

[32] Fred Lehrdahl and Ray Jackendoff. *A Generative Theory of Tonal Music.* Cambridge MA. MIT Press, 1983

for a musical grammar inspired by Chomsky's linguistics. Ten years later, this book was the result. And it has remained the classic text on the subject.

In the 27 years since the publication of this book, research into the relationship between sound and text has validated Lehrdahl and Jackendoff's contention that classical music and Chomsky's Generative Grammar are closely related. At the University of Massachusetts in May of 2009 Jonah Katz and David Pesetsky from MIT held a conference called *The Recursive Syntax and Prosody of Tonal Music.* In their published conclusions[33] they state that

> "When we view GTTM's discoveries and proposals through the prism of modern generative linguistic theory, strong formal similarities emerge between music and language... formal differences between language and music are a consequence of differences in their fundamental building blocks (arbitrary pairings of sound and meaning in the case of language; pitch-classes and pitch-class combinations in the case of music). In all other respects, language and music are identical."[34]

Based on these findings, it is my thesis that testing classical tonal music (Katz and Pesetsky used Mozart, as did Lehrdahl and Jackendoff) and literal language ("The girl will not buy the book" was one typical phrase) will inevitably deliver a conventional result limited by its input, which will miss the vocabulary of new forms and combinations of the visual, aural and textual that I hope my methodology reveals.

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[33] Jonah Katz and David Pesetsky. *Recursive Syntax and Prosody of Tonal Music.* web.mit.edu/jikatz/www/RecursionHandout.pdf (accessed August 11 2010)

[34] ibid

How is Language Defined by Linguists?

There are between 5,000 and 10,000 languages on earth acknowledged by the Linguistic community as different from one another.[35] The twenty two languages in the footnote below are those first listed under the letter A in the Ethnologue website.[36] There are many different forms of languages — with dialects and smaller subdivisions such as patois, creole or pidgin, distinguished by geography or ethnicity. Even when derived from the same root, they can be unintelligible to someone from a short geographical distance away.

Context and usage splits languages into dialects which evolve over time into new languages. Italian and French for example developed from dialects of Latin. In time, a language which has developed from a dialect becomes protected from change by its users. “A language is a dialect with an army and a navy.”[37]

For Ferdinand de Saussure language was a system of signs or semiotics. In each linguistic sign, a signifier is coupled with something signified. Signs are established solely by distinctions between themselves and other signs within a system. For Noam Chomsky languages are determined by our genes. They are genetically inherited. His Generative, Transformational and Universal Grammars describe principles which remain the same for

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[35] P.H. Matthews. Linguistics. A Very Short Introduction. Oxford. Oxford University Press, 2003.

[36] IIAni, ‘Are’are, ‘Auhelawa, A’tong, Aari, Aariya, Aasáx, Abadi, Abaga, Abai Sungai, Abanyom, Abar, Abau, Abaza, Abé, Abidji, Abinomn, Abipon, Abishira, Abkhaz, Abnaki Eastern, Abnaki Western... in *Ethnologue Languages of the World*. http://www.ethnologue.com/language_index.asp?letter=A (accessed August 10 2010).

[37] Max Weinreich. *Yivo and the problems of our time.* Yivo-bleter. Israel, 1945. vol. 25, no. 1, p. 13.

every language, with parameters whose values are fixed differently in languages of different kinds.

How do I Define Language in my Thesis?

Language here is defined in the broadest possible sense — as a system of communication and expression involving the visual, aural and textual in any combination (I prefer these terms rather than image, word and music, because they more accurately describe the qualities of each medium). A medium's original context can be from any area of high, low, natural or industrial culture and can include every seen and unseen, virtual, holographic, imagined, remembered and real image, sound, silence, text, code, sign, phoneme, or narrative — in any tongue, human or otherwise.

Background and Statement of the Problem Context

In my Introduction I have researched and identified the main arguments in existing grammars of the visual, aural and textual. I have defined what Linguists may mean by language and what I mean by it. Then I have put my findings together into a description of my studio practice and methodology, including my software and the language it has suggested to me. And finally I have written a conclusion which I hope adds meaning to our lives and creates greater communication for our future.

The Ontario College of Art and Design University's Interdisciplinary Masters of Art, Media and Design has created the opportunity for me to take up the challenge of combining three languages (the visual, aural and textual) as one, instead of the two (visual and aural) which I had first imagined. The work created for this MFA is among the most

interesting and demanding of my career. It was not until after I had learned to make work with aesthetic intention, that I could abandon it, and begin selectively using indeterminacy (the state of pure being) as a tool. And it was not until I had made work about something other than itself that I could allow my work to become about itself.

My influences come equally from the humanities (design, fine art, music, literature, philosophy, psychology) and the sciences (physics, astronomy, cognitive science, computers and mathematics). I hold no bias in any of the artistic forms for or against the historical developments of classicism, modernism, postmodernism and the relational (or post-postmodern). I view my work as relational. It exists between indeterminacy and the rejection of metonymy.

When I use the term “artist” in this thesis, I may mean painter, designer, technologist, writer, musician, philosopher, linguist, educator or scientist — anyone who practices their subject principally for its intrinsic value and its ability to enhance the world we inhabit. Creation versus automation, attention versus distraction, being in the moment, seeking, responding to humanity and the environment are at the core of my interests.

I utilize the visual, aural and textual in ways that allow me to retain their poetic aspects — which are often the non-literal and metaphorical. I view their connections holistically as a series of relationships as well as mathematically as a group of physical attributes and qualities. Dictionary definitions of key terms used in this Thesis are given in Appendix A.

Chapter 2: Literature and Artistic Practice Review

Literature Review

I devote my Literature Review to the work of two philosophers who best represent the conceptual basis for my work, the knowledge stream from which it proceeds, its reason for being and its meaning in society and in contemporary and interdisciplinary art, design and performance. They are Frederic Jameson and Nicolas Bourriaud. The works I will review are Fredric Jameson's *Postmodernism, or The Cultural Logic of Late Capitalism* (New Left Review, 1984) and Nicolas Bourriaud's two volumes, *Relational Aesthetics* (Les Presses du Reel, 1998, 2002, first English translation, Lucas & Sternberg, 2005), and *PostProduction*, (Lukas & Sternberg, 2002).

Fredric Jameson is considered to be one of the foremost English speaking, Marxist, contemporary literary and cultural critics. His *Postmodernism, or The Cultural Logic of Late Capitalism*,[38] first published in 1984, has often been described as the most complete critical writing on the changes from modernism to postmodernism.

Jameson's principal contention is that postmodernism is not merely one of several attractive options to modernism, but a profound re-shaping of contemporary society by the financial and political forces of late capitalism. He enumerates how these changes have brought new artifacts in all forms of culture, including art, literature, film and music. He notes that every single position on postmodernism has also been a political comment on the nature of 'late capitalism' (the 'end' of a financial system). From Motherwell to

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[38] Fredric Jameson. *Postmodernism or the Cultural Logic of Late Capitalism*. New Left Review, 1984.

Warhol, Nietzsche to Wittgenstein, Hemingway to Lessing, Capra to Godard, Wallace Stevens to William Burroughs and Stravinsky to Cage, Fredric Jameson places the break between high- and post- modernism around 1958. He also acknowledges exceptions — 'genealogical precursors' such as Marcel Duchamp and Gertrude Stein who appear too early in history to keep his rule — and therefore substantiate it.

I would argue with Jameson here over his treatment of music. He refers briefly to music in relation to Adorno, who compares Schoenberg unfavorably with Stravinsky to illustrate Schoenberg's modernism and Stravinsky's postmodernism. This for me is incorrect. Stravinsky adopted Schoenberg's twelve-tone system after his death and his postmodernism was ultimately based on Schoenberg's position as a postmodern composer. In addition, there is a more apt musical comparison not made here — and that is between teacher and pupil. John Cage studied with Arnold Schoenberg in 1933 after taking composition from Henry Cowell (who suggested the new teacher). Cage is the one whose sense of music — what it could be and what it could do without — influenced postmodernism more than any other western musical figure. Cage's use of concept without metaphor was not pastiche in Jameson's sense (meaning it did not copy and paste historical styles) and it went further towards the idea of creating a new vocabulary than had been done before. In this context, 4' 33' seems like a sermon on concept without parody or pastiche.[39]

Aside from this issue with postmodern music, Jameson's knowledge of postmodernism seems by far the most comprehensive in my mind. He makes the perfect and identical

[39] For David Tudor who gave the first performance, it was "one of the most intense listening experiences you can have." Harold C. Schonburg, *The Far Out Pianist*, Harpers Magazine, June 1960, p 49

point to one Bourriaud makes in *Relational Aesthetics*. They're both speaking approvingly about the demise of a great contemporary art movement — Jameson's is modernism and Bourriaud's post-modernism.

Jameson says:

> *"Not only are Picasso and Joyce no longer ugly, they now strike us, on the whole, as rather 'realistic,' and this is the result of a canonization and academic institutionalization of the modern movement generally that can be traced to the late 1950s. This is surely one of the most plausible explanations for the emergence of postmodernism itself, since the younger generation of the 1960s will now confront the formerly oppositional modern movement as a set of dead classics, which 'weigh like a nightmare on the brains of the living', as Marx once said in a different context."*[40]

Bourriaud's stated reason for writing his book *Relational Aesthetics*, was the reluctance of a majority of contemporary critics and philosophers to come to grips with the art practices of the 1990s. How otherwise could new works (whether process-related or behavioral) be decoded with reference to the cultural conditions in which they were being created, if critics continued to "take shelter behind... sixties art history"?[41]

Relational Aesthetics is also an answer to Bourriaud's question: "Is it still possible to generate relationships with the world in a practical field (which) art history traditionally earmarked for their 'representation'"?[42]

The context and the art he describes in his first chapter Relational Form, privilege social relations over objects. He states that he is not representing a theory of art, but a theory of

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[40] Fredric Jameson, *Postmodernism, or The Cultural Logic of Late Capitalism* (New Left Review, 1984) p 56

[41] Nicolas Bourriaud, *Relational Aesthetics* (Les Presses du Reel, 2002) p 7

[42] ibid p 9

form. “Unlike an object that is closed in on itself by the intervention of a style and a signature, present-day art shows that form only exists in the encounter and in the dynamic relationship enjoyed by an artistic proposition with other formations, artistic or otherwise.”[43]

The Enlightenment ushered in the modern political era, with advances in technology, greater freedoms, better education and working conditions, which were expected to create progress in society. There were, however several visions of “modernity” — rationalist (from the 18th century), spontaneous (from Dada, Surrealism and the Situationists) and authoritarian (against which both of the former were opposed). The authoritarian forces set out to dominate what Bourriaud describes as “the South of planet earth” by replacing people with machines and introducing automated production processes for profit. Unrealized expectations of emancipation were therefore replaced by multiple melancholies. And while today’s modernity has the same ambitions for liberty as the past, those artists involved in its creation, neither want to repeat its forms nor its claims (revolution, enlightenment, reason, progress), and even less do they wish to assign to art the same functions of domination. In other words, he says, the role of art is no longer to form utopian realities, but to form ways of living and action within the existing reality, at any scale chosen by the artist. Modernity now can therefore practice cultural do-it-yourself or recycling in the invention of the everyday — all of which is no less deserving of attention than the modernity of yesterday. The objective becomes something closer to Maurizio Cattelan’s phrase ‘dolce utopia’ or a utopia without grand speeches.

[43] ibid p 21

Bourriaud is speaking of a subtle yet definite change in the attitude of art making and curating:

> "The possibility of a relational art (an art taking as its theoretical horizon the realm of human interactions and its social context, rather than the assertion of an independent and private symbolic space), points to a radical upheaval of the aesthetic, cultural and political goals introduced by modern art."[44]

Another difference from postmodern theory is the absence of an 'end'. "There is no such thing as any possible 'end of history' or 'end of art', because the game is being forever re-enacted in relation to its function, in other words in relation to the players and the system which they construct and criticize."[45]

"*Relational Aesthetics* does not represent a theory of art, this would imply the statement of an origin and a destination, but a theory of form".[46]

Postproduction is the second of Bourriaud's books. The difference between *Relational Aesthetics* and *Postproduction* is that while the former described the new sociopolitical landscape of the nineties the inter human sphere or the collective sensibility on which contemporary artistic practices were beginning to rely, the latter analyzes a set of modes of production, seeking to establish a typology of contemporary practices and to find commonalities. The two books show the same scene from different angles, with *Postproduction* focused particularly on form.

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[44] ibid p 14

[45] ibid p 18

[46] ibid p 19

Postproduction is a typology of appropriation. It categorizes and describes forms in the context of recent art. The term postproduction itself is appropriated from the audiovisual vocabulary of film, television and video, where it describes processes applied to recorded material. The book was written in 2001 and deals with work created since the 1990's. This relational form distinguishes itself in one sense by what it is not: It is not about the production of raw materials.

This work is situated in the context of an internet society responding to the chaos of global culture in the information age. "...*Postproduction* apprehends the forms of knowledge generated by the appearance of the Net (how to find one's bearings in the cultural chaos and how to extract new modes of production from it)."[47] The artist's vocabulary includes forms ignored or disdained until now.

The metaphors of DJ and programmer recount an art which begins to eradicate traditional distinctions of ownership — production and consumption, creation and copy, readymade and original. "Notions of originality... and creation... are slowly blurred... by the twin figures of the DJ and the programmer, both of whom have the task of selecting cultural objects and inserting them into new contexts."[48]

Making art from objects which have already been produced began in the early 20th century with Duchamp. Marx defined these objects as products of labor or "capital" consumed through the exchange of money.

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[47] Nicolas Bourriaud, *Postproduction*, (Lukas & Sternberg, 2002) p 14

[48] ibid p 13

Duchamp and Marx both believed that consumption was also a mode of production. In Michel de Certau's *The Practice of Everyday Life* he shows that as we consume an object or a work, we also interpret it and engage in a form of production of our own — micropirating the original. Postproduction artists work with the new materials of consumption — DVD and MP3 players, cell phones and computers.

Duchamp's readymades, New Realism, Pop and Simulationism have each defined the object differently. A passage of use from the 80s to the 90s (postproduction's starting point), can be represented by a segue from the storefront to the flea market. In the storefront is an object such as Barbara Kruger's *I shop therefore I am*, (1987). While in the flea market the object is a working kitchen, in Tiravanija's *Untitled 1992 (Free)*. Here recycling becomes a method and chaos an aesthetic. "The work of art may thus consist of a formal arrangement that generates relationships between people, or be born of a social process... 'relational aesthetics'... main feature is to consider interhuman exchange an aesthetic object in and of itself."[49]

In postproduction. works of any kind, including artworks, are perceived as building materials. Deejaying and contemporary art can be described using the same terms — one typology merges into another.

Bourriaud's typology of *Postproduction* lists and describes examples of works in the following categories. I have described the concepts involved rather than the works themselves, and I have listed the artist names in each section.

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[49] ibid p 32

Crossfader: When the crossfader on a mixing board is set to the middle, two samples are played simultaneously. In this way, artists may present two existing works side by side thus creating a third work — Pierre Huyghe's *Sleeptalking* (1998) uses a sequence from Andy Warhol's first film, *Sleep* (1963) juxtaposed with new recordings of John Giorno, the author who allowed his face and body to be used in Warhol's film.

Pitch Control: Pitch control allows one to adjust the speed of a recording while the pitch (or scale) can remain constant. In Douglas Gordon's *24 Hour Psycho,* Hitchcock's film is pitch controlled — or slowed down to run for 24 hours.

Toasting, Rapping, Emceeing: The rhythmic, spoken delivery of text over an existing work. Angela Bulloch's 'Solaris' (1993) is Bourriaud's example. 4 giant random flashing lights switch on and off opposite a screen showing Tarkovsky's B-movie *Solaris*.
Cutting: Collaging music or video. Alex Bag has employed images found through a process of taping television episodes in order to isolate specific moments of 'reality.' Candice Breitz *Mother and Father* (2005) extracts segments of Hollywood films such as *Kramer vs Kramer*, *Mommie Dearest*, and *Postcards From the Edge*.

Playlists: Typically lists of songs created for their resonance and presented on portable music players. *Cinéma Liberté/Bar Lounge* (1996-), is a collaborative project in which Douglas Gordon presents films that have historically been censored for political reasons in the country in which the work is installed, and a seating environment created by Rirkrit Tiravanija where complimentary refreshments are served.

In deejay and postproduction culture, each producer or artist is a transmitter for the following producer. Each artist contributes to a network of forms which dovetail endlessly.

And each new product which serves to make work may be used as an object in a continuous cycle of forms. The quality of a work is determined by the trajectory it describes in the cultural landscape as it constructs a linkage between forms, signs and images.

Works by Mike Kelley, John Armleder, Bertrand Lavier, Rirkrit Tiravanija, Pierre Huyghe, Dominique Gonzalez-Foerster, Liam Gillick, Maurizio Cattelan and Pierre Joseph are described to illustrate forms within this typology.

Reprogramming social forms as art has become a common activity. This can include making an exhibition space a place of production, and providing tools for the audience to make things, or creating a living space.
Les Atelliers du Paradis was shown in Nice in 1990, where the artists Pierre Joseph, Philippe Parreno and Philippe Perrin inhabited the space, and on a schedule they used it to take English lessons, a therapy session, to jump on a trampoline, interact with gadgets and show a wide range of artworks from Angela Bulloch to Helmut Newton. At the opening visitors wore T-shirts with printed generic phrases, which in real-time were drafted into a screenplay by producer Marion Vernoux.

While this work is not so different from that of others who set out to question society, over 20 years earlier, Bourriaud contends that the one significant difference is its refusal to use metonymy — the notion of something being represented by one of its parts — such as ‘city’ being referred to by ‘rooftops’. So each environment or social intervention is not a representation of something else, but of itself.

Works by Jorge Pardo, Daniel Pflumm, Joseph Grigely, Philippe Parreno, Wang Du, Swetlana Heger, Plamen Dejanov, Rirkrit Tiravanija and Pierre Huyghe are described to illustrate forms within this aspect of Bourriaud's typology.

Data Storage has been the subject of art making since Tony Smith's *Black Box* (1963-65), Stanley Brouwn's *40 Steps* and *1000 Steps* (1971), and On Kawara's *One Million Years* (1971).

Shareware, sampling, appropriation, 'white labels' (illegal remixes of music sold by DJ's on limited edition vinyl discs) symbolize not a single artist name, but a line or series of names. DJs have multiple personalities; corporations have multiple brands. These practices contribute to the 'death of the author' (Barthes and Foucault).
Artists of the 80s criticized authorship without abolishing it. Their work retained its value, just as Jeff Koons' *Hoovers* and Haim Steinbach's *Shelves* retained their individual identities.

Postproduction artists like Douglas Gordon question the concept of the author "I'm happy to remain in the background of a piece".[50] "To rewrite modernity is the historical task of this early 21st century: not to start at zero or find oneself encumbered by the storehouse of history, but to inventory and select, to use and download."[51]

Bourriaud uses examples from Jokob Kolding, Fatimah Tuggar, Gunilla Klingberg, Nils Norman and Sean Snyder to further illustrate the use of global culture as a toolbox. He sees the postproduction art world as an open narrative space, rather than a product line,

[50] ibid

[51] ibid

and “instead of prostrating ourselves before works of the past, we can use them.”[52] In this way, art proposes scenarios and can be a form of using the world in an endless negotiation.

Artistic Practice Review

My artistic practice review is in the form of a website. A full-sized index of pages from the site are reproduced below. The site contains many links to sound, video and writing which are best accessed through the internet: http://www.robertappleton.com/hyperimprovisation/index.html

[52] ibid

HYPERIMPROVISATION

hyper |ˈhīpər| over; beyond; above

im•prov•i•sa•tion |imˌprävəˈzā sh ən| produce or make (something) from whatever is available

Larry Austin

University of North Texas faculty page

Learning to Compose, textbook excerpt

Tárogató, composition

David Tudor and Larry Austin, conversation

Curtis Bahn

Rensselaer Polytechnic home page

EMF Media Artists page

Joan Baixas

Joan Baixas website

Pregnant Earth an excerpt

Ross Bencina

Ross Bencina website

AudioMulch, software

Michael Berry

Michael Berry website

An Introduction to Grain Wave in *Computer Music Journal*

Grain Wave 3, software

John Bischoff

John Bischoff website

Mills College faculty page

Chris Brown

Chris Brown website

Warren Burt

Warren Burt website

John Cage

Wikipedia page

John Cage Database website

About Silence, video

4' 33", video

Water Walk, video from a TV gameshow 1960

Jin Hi Kim

Jin Hi Kim website

Dragon Bond Rite

Digital Buddha

Unknot, with Gerry Hemingway

Golan Levin

Golan Levin website - Flong

Carnegie Melon School of Design faculty page

Ursonography, video with Jaap Blonk

George Lewis

George Lewis Wikipedia page

Columbia University faculty page

A power stronger than itself: the AACM and American experimental music, Google Books excerpt

About AACM, audio interview

George Lewis Derek Bailey Duo, video

Max Mathews

Max Mathews page on cSounds

Max Mathews on Wikipedia

MIT Press links to *Current Directions in Computer Music Research*

Ali Momeni

Ali Momeni website

University of California, Berkley, Night School syllabus - you can read each night's course materials

Tim Perkis

Tim Perkis website

Larry Polansky

Dartmouth College faculty page

Miller Puckette

University of California San Diego faculty page

Miller Puckette at Wikipedia

Miller Puckette at Cycling '74

Curtis Roads

University of California Santa Barbara faculty home page

MIT Press links to *Microsound*, *Computer Music Journal* and *Foundations of Computer Music*

Curtis Roads on YouTube part 1 | part 2 | part 3

Lawrence Casserley

Lawrence Casserley website

CDE Music homepage

ECM Records page

Joel Chadabe

Joel Chadabe website

NYU Department of Music

Electric Sound, Amazon link

Electronic Music Foundation

Chris Cutler

Chris Cutler website

Roger Dannenberg

School of Computer Science, Carnegie Melon University

Roger Dannenberg website on Pittsburgh Jazz Network

William Duckworth

William Duckworth website

Wikipedia page

Bucknell University faculty page

Cathedral, web interactive work

Gerhard Eckel

Gerhard Eckel website

Gerhard Eckel videos

Simon Emmerson

DeMontfort University faculty page

Wikipedia page

Karlheinz Essl

Karlheinz Essl website

Music software

Wikipedia page

David First

David First website

The Music of the Sphere: pdf of the essay from Leonardo Music Journal

Softdoor

Notekillers on MySpace

Fast Forward

Fast Forward's website

Tabletop Battery, Bergen, Norway

Don't Drop Handlebars

Bentley Jarvis

Canadian Electroacoustic Composers website

Where Was I?

Last Night

Robert Rowe

New York University faculty home page

MIT Press links to *Machine Musicianship* and *Interactive Music Systems*

Google Books excerpts from *Machine Musicianship*

Eric Singer

Eric Singer website

Laurie Spiegel

Laurie Spiegel's website

Wikipedia page

Bell Labs Interview part 1 | part 2

Karheinz Stockhausen

Stockhausen website

Wikipedia page

Interview

On Sounds

Helicopter String Quartet

Donald Swearingen

MySpace page

Interview

David Tudor

David Tudor Pages at the Getty Research Institute

Wikipedia page

Leonardo page

Toneburst (track 3 here)

Camille Utterback

Camille Utterback website

Video overview

Textrain

Todd Winkler

Brown University Music faculty home page

MIT Press link to *Composing Interactive Music: Techniques and Ideas Using Max*

Google Books excerpts from *Composing Interactive Music: Techniques and Ideas Using Max*

David Zicarelli

David Zicarelli at Cycling '74

David Zicarelli at EMF Institute

Pamela Z

Pamela Z website

Expo '74 Conference Presentation about Max/MSP

Video excerpt *Nihongo de Hanasoo*

Links

Organizations

Bourges International Electroacoustic Music Academy

Canadian Electroacoustic Community (CEC)

Electronic Music Foundation

International Society of Music Information Retrieval (ISMIR)

IRCAM

Software / Hardware

AudioMulch

Grain Wave 3

Max/MSP Jitter

Monome website | wiki | interviews

SynthEdit

Timelines

The Big Timeline, Electronic Music Institute

Electronic Musical Instruments 1870-1990

Electroacoustic Music Timeline, Peabody Conservatory

General Films

Music Meets the Computer
John Chowning and Max Mathews in conversation with Curtis Roads

Website

Site concept / research / design, Robert Appleton. Created as part of my thesis in the Interdisciplinary Masters in Media, Art and Design at Ontario College of Art and Design, Toronto, Canada, 2009/2010

Robert Appleton

Ryerson University / Academe website, includes *About Time: A Theory of Design, Music and the Play Instinct*

Robert Appleton YouTube channel

Robert Appleton design website

Alliance Graphique Internationale website

Chapter 3. Body of the Thesis

Research Questions

1. What new meanings may be uncovered by improvising at the interdisciplinary intersection of the visual, aural and textual?

    How does technology alter the relationship between these three forms? Is a new democracy now suggested among them?

2. How does the poetic aesthetic developed in the creation of this work expand our understanding and appreciation of interdisciplinarity and evolve a language of its own?

    If so, why has such a language not already been ‘written’?

    What specific poetry exists and how does it differ from other poetic forms?

Methodology

Introduction

Vortex began as a series of experiments with sound, image and video which stretch back to my seven years in New York during the 1990's when I became friendly with many of the new and electronic music avant garde whose work has roots in John Cage, John Coltrane, Thelonious Monk, Iannis Xenakis, Nam Jun Paik, David Tudor, Robert Ashley and others. My friends included Joseph Celli, Phill Niblock, Jin Hi Kim, Ornette Coleman, George Russell and Fast Forward, as well as the international members of the Fluxus movement and traditional and folk musicians from many countries who passed through New York weekly. I had been a jazz and new music percussionist since the 1970s, studying with Tony Oxley in London. I took up piano in the 1980s. I studied privately for 2 years with Garry DiaI in New York and I was working as a self-employed artist/designer, combining sound with image on the Internet, as well as teaching at Cooper Union and Parsons School of Design. My methodology has not come from study, but from meeting and working with innovators in the arts. In my studio practice for the Masters I had to evolve a new methodology to match my new practice. I have described various aspects of it here by discussing the evolution of individual projects and experiments I created.

Interspecies Communication — DouDouBob, 2007

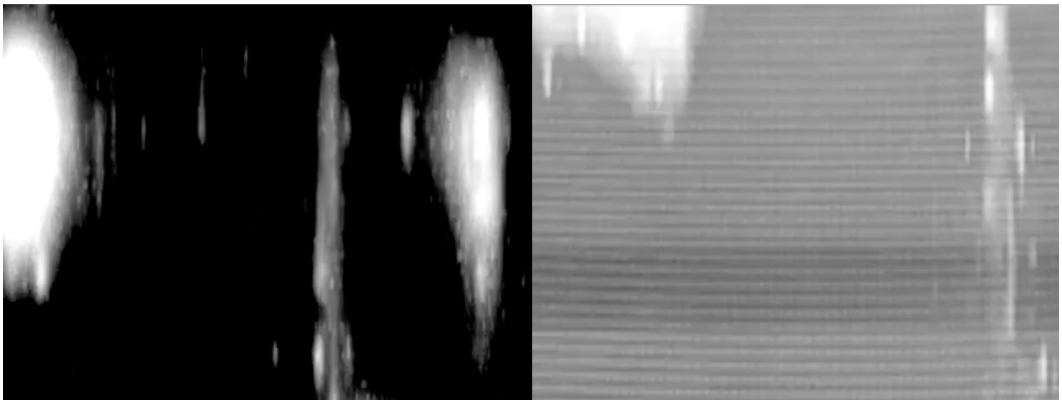
DouDouBob, Beijing, 2007

Just before arriving in Toronto I spent a year teaching in China. I had an electric piano in my apartment and was looking after our landlady's parakeet called DouDou. One morning I was playing piano as usual and my wife was making breakfast. Suddenly I realized that DouDou and I were improvising together — she was singing and chirping and we were following each other musically as improvising musicians. It lasted for over an hour. My wife set up a video camera and made a recording. DouDouBob [53] is the result. Interspecies communication (between species) is the same as communication

[53] Robert Appleton, *DouDouBob*, Beijing, 2007. http://www.youtube.com/bebopple#p/u/13/Tbzrh1-Xl0o (accessed August 30 2010)

among the same species, except that the vocabulary is completely unfamiliar — it is unwritten, it has no history in music, it cannot be practiced or predicted and it has no limits. In his introduction to *Relational Aesthetics*, Nicolas Bourriaud states that his book was written in answer to the question “Is it still possible to generate relationships with the world in a practical field (which) art history traditionally earmarked for their ‘representation’”? This piece represents an intuitive, unintentional and effortless relational performance by myself and a bird, captured on video by my wife while she simultaneously cooked breakfast. Here in Bourriaud’s ‘flea market’ parlance, the object is a domestic kitchen — similar to Tiravanija’s Untitled 1992 (Free).

Event 1, 2008



Event 1, Toronto, 2008

On arriving at OCADU I immediately had the opportunity to work with visiting artist Lillevan, whose approach to sound and prepared video is similar to my own. Spending time and studying closely with him over several days allowed me to begin the process of

personal discovery with motion and sound which became *Event 1*[54] — the first in a series of events which culminate in my thesis exhibition. *Event 1* is a 70 second video using my improvised and overdubbed jazz piano improvisation, which becomes progressively out of time and tune and is performed over a video of melting textures (created in AfterEffects) which merge visually and aurally into the looped sound of my apartment air conditioner turning on and off in the middle of the night, and a blank, rolling, television screen, filmed at a highway gas station between Toronto and East Lansing, Michigan. The effect is to melt tonal music and visual texture and crush them into digital noise. The piece became a first sketch in the series and an expression of the subtlety of loss and gain in Slavoj Žižek's description of the Lacanian *Objet Petit a*[55] expressed so succinctly in his *Coke as Objet Petit a*[56] "…the more Coke you drink, the thirstier you are; the more profit you make, the more you want; the more you obey the superego command, the guiltier you are… which is the very opposite of the paradox of love where, as Juliet put it… to Romeo 'the more I give, the more I have'."[57] Event 1 may deal in this way with a sense of loss — yet it also points at the potentiality of gain in a changed vocabulary.

Working Alone and with Others

There are several potential states of a *Vortex* performance: alone; with others; with an audience as observer; and with an audience as participant. It can also be performed in a

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[54] Robert Appleton, *Event 1*, Toronto, 2008. http://www.youtube.com/bebopple#p/u/11/u16FuI7ADJw (accessed August 30 2010)

[55] Jacques Lacan, *Of the Gaze as Objet Petit a* in *The Four Fundamental Concepts of Psycho-Analysis.* New York, Norton, 1978 pp. 67-119

[56] Slavoj Žižek, *Coke as Objet Petit a,* in *The Fragile Absolute*, New York, Verso, 2000

[57] ibid

gallery space or virtually on the internet. Each of these states make me consider a performance slightly differently.

Improvising alone and my ability to do this with three media at once may ultimately distinguish my work from others. Improvising more than one medium at a time can obviously be accomplished with several people — each participating in their own area of specialty and forming an orchestra of disciplines. Working alone however is a very pure form of the medium since one psyche controls all aspects of the event. One being is the instrument through which an entire vocabulary passes and it can therefore be measured artistically and as research most easily in this state. As DJ and programmer[58] I "...have the task of selecting cultural objects and inserting them into new contexts."[59]

Improvising with others is very exciting and the most common form of music production. Events 2, 3, 4 and 6 are created with musicians — though in each case only my software and sound/image/text manipulation is creating the *Vortex* in the performance. In these cases the intuitive and performative qualities of collaborative music are added to the *Vortex*. The musicians are Bob Brough, Yahya Dai, JP Carrascal and Sergi Felipe Fernandez.

I am currently working on the audience participation component for my thesis exhibition on September 20th 2010 at the Music Gallery in Toronto.

Introducing Text as an Improvisational Medium

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[58] My programming collaborators Nicolas Stedman and Pieter Coussement have made this concept possible

[59] Nicolas Bourriaud, *Postproduction*, Lucas & Sternberg, 2002

As I became aware of my ability to create sound and image in motion with various kinds of software, I recognized that for many reasons, it made sense to introduce text into the equation. While I claimed to be improvising interdisciplinarity, I was only using two thirds of the vocabulary available to me. At the beginning of 2009, I therefore began to work with a text which had significantly influenced my thinking about postmodernism: Fredric Jameson's *Postmodernism, or The Cultural Logic of Late Capitalism*,[60] first published in 1984 in the New Left Review. Jameson's classic text isolates and contextualizes my work in postmodernism and allows me to build on my understanding of the form, and see how it fits most appropriately into Bourriaud's notions of the relational. There may therefore be a hint of satire in my treatment of this work, however it is not of a destructive, rather a reconstructive nature. Several pieces of work have come from this relationship [61] and Fredric Jameson generously granted me his permission to make use of his words in my studio practice and thesis.

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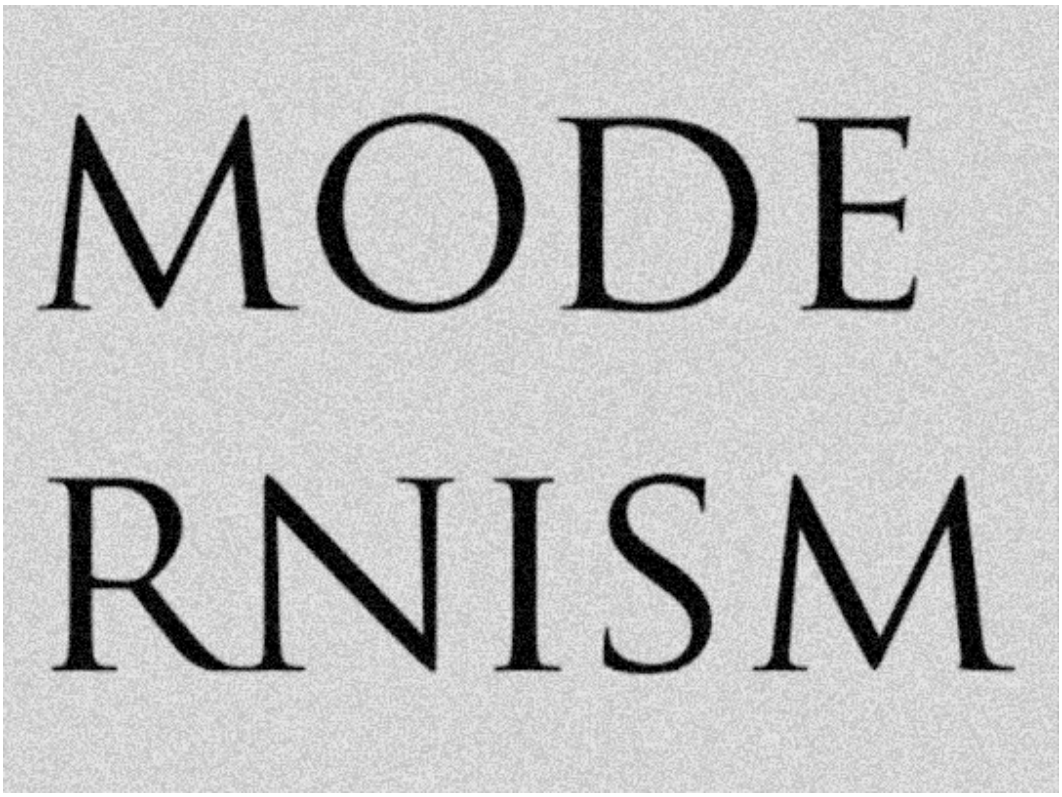
[60] Fredric Jameson. *Postmodernism or the Cultural Logic of Late Capitalism*. New Left Review, 1984.

[61] *Sketch for Performance/Jasemon*, 2009-10, *Events 2, 3 and 4*, 2009 and parts of *Event 6*, 2010 http://www.youtube.com/bebopple (accessed August 30, 2010)

Sketch for Performance/Jasemon, 2009-10



Robert Appleton, *Sketch for Performance/Jasemon,* 2009-10

Sketch for Performance/Jasemon[62] began in January 2009 as a Keynote presentation called Jasemon, of Jameson's text with my improvised jazz piano, playing Miles Davis' So What, and the addition of a synthesized voice saying "post- modernism, modernism, modernism, modernism." In January 2010 it was re-edited with a different soundtrack — Mickey Mouse, Karnival Kid, 1929, which is the precise length of the entire piece and is one continuous element over animated text from Jameson's essay which loops 3 times. The text, set in Trajan — a font taken from rubbings of Trajan's Column and representing

[62] Robert Appleton, *Sketch for Performance/Jasemon,* 2009-10 http://www.youtube.com/bebopple#p/u/2/GcxJ4Vk2kuk (accessed August 30 2010)

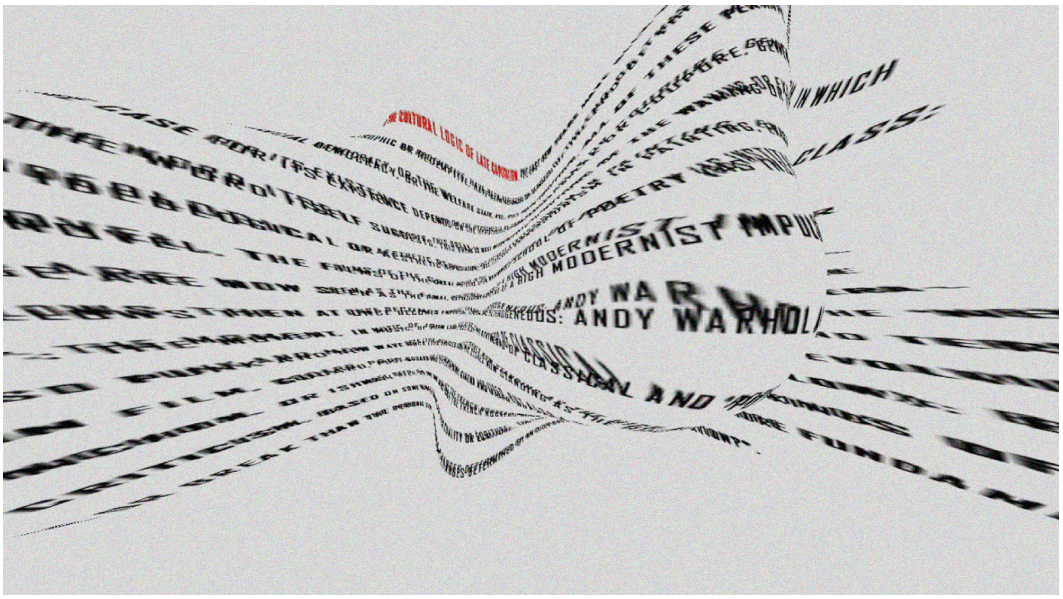
an ultimate form of typographic classicism — begins legibly at first and then becomes distorted. The third and final rendition of the repeating text zooms out to the ending blip of a Looney Tunes movie as postmodernism disappears and I demonstrate the changing meanings of different synchronicities of text and sound.

In the opening scene the title Fredric Jameson Postmodernism or the Cultural Logic of Late Capitalism 1984 appears with the Looney Tunes fanfare (a comic though real suggestion of significance). The initial screens which present Jameson's well-accepted argument play over an opening sigh followed by the hushing sound associated with the announcement of important remarks in a speech or an opening at the Opera. Rising tension is maintained by the sound of a needle crackling on a scratched LP or 78 disk. A brief explosion after the appearance of "premonitions of the future", another hush at "catastrophic or redemptive" and "the end of this or that" is followed by a dog bark suggesting happy agreement with the premise, a creaky spring, a munching sound and a whistle introduce "post," followed by "modernism" which fades to a strumming guitar and the beginning of the love song Sweet Adeline which introduces the second playing of the animation. The song's lyrics are converted into approximations of words as they become forgotten by the singers. When "catastrophic or redemptive" appears for the second time it begins with a whistle and cork-pop (a celebration?). The forgotten lyrics continue briefly until at "the end of this or that" we hear a snore and whistle, suggesting either that we've heard this before and it's boring now, or that "the end" also involves the act of falling asleep or dying temporarily. The next two screens deal with the accidental synchronicity of text and sound — first "taken together" and "all of these perhaps constitute what is increasingly called" occur in perfect unison with two sharp sounds — as they build tension towards the final statement, "post" followed by "modernism" the disappearance of which perfectly segues with the ending of a line of sung text. The next and final rendition

of the text has already begun out of sequence, as the music begins to speed- and cheer-up to a rousing finish, and the animated image immediately begins to zoom out becoming smaller and smaller and ultimately disappearing in reference to a shrinking spotlight — as the word “modernism” now a fraction of its former size — vanishes forever and the piece ends.

Through our knowledge and interpretation of Jameson’s text about the state of postmodernism and the unintentional synchronicity of visual, aural and textual matter, this piece becomes a swan song to the postmodern movement — in three parts. And it demonstrates my contention that the context of sound and its synchronicity with image and text can change and enhance meaning dramatically.

Event 2 and 3, 2009 and Event 4, 2010



Robert Appleton, *Event 2,* 2009

Event 2[63] was created for the first year graduate exhibition at OCADU in April and May 2009. It's a solo event. Here I introduced Fredric Jameson's text in a new way using Max/MSP to improvise image and sound. I have designed my instrument (3 Korg Nano controllers and a Macbook Pro) to respond intuitively to touch, allowing the sound to manipulate text as image and video and perform all three at once. My objective was to create an instrument which responds to my own psyche — a personal instrument which I design as I'm playing. In working with Nick Stedman as Max programmer we sat side by side for many weeks trying different combinations of touch and effect in order to make a seamless interface between human and machine. I wanted to work within the infinite space of the computer — to fly through an immersive environment of text, image and sound. In the beginning I made images and movies of text. I created optical illusions of 3-

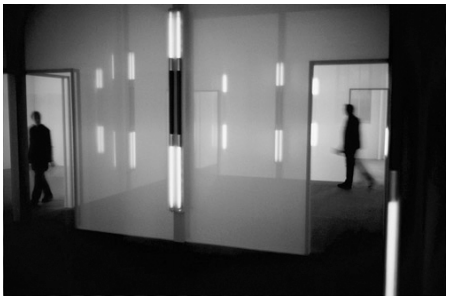
[63] Robert Appleton, *Event 2,* 2009. http://www.youtube.com/bebopple#p/u/12/kPdwxX3-9jw (accessed August 30 2010)

dimensional space and then manipulated these illusions further in virtual space using Max. The plastic space I work in is very different from the concrete world. In this environment all objects are temporary and all states are changing. A roundness or bouba-like quality (in reference to the “kiki and bouba” experiment) permeates the work. And sonically it has a feeling of the blues — a wailing sound, almost reminiscent of Miles Davis muted trumpet, but not at all like that since it uses no conventional scales or chords — no tonal harmony. I was also able to make a 100 page book of images from the performance. The graphic quality and legibility of image text is increased significantly when they become 2-dimensional, still forms. The sense of infinite creation one achieves while performing is confirmed by this printed output. One enters a Zen state of intellectual calm and openness. I described the experience in a short essay for the show catalog:

> *“Since I was a child I've loved music, art and language. And now I return to the delight of the moment, improvising in these subjective spaces... The purpose of my work is to discover and understand new vocabularies. The essential insight is simply that if we measure things by one and we have one hundred of something, then we have one hundred things. If on the other hand we measure things by one half of one, the same one hundred somethings becomes two hundred things and so on. Applied to sound for example this creates measurement beyond scales, and applied to the visual it creates depth beyond single-point perspective... I sit at the piano keyboard or controller manipulating sounds, texts and images as if they were liquid. I perform spontaneously in real-time, making and being moved by the forms which emanate from my computer instrument. Each of these media text take their own direction: and I am to them like a divining rod to water, moving as the energy dictates. Combining the senses of touch, hearing, sight and balance with cognition and understanding, audience and performer(s) become intimately involved in the creation of the work... Through the use of projection, fixed and moving, the work breaks with notions of perspective. The photographic concept of blur creates instead a layering of infinite states of presence revealed only as needed. This for me is an essential aspect... and connects clearly to the Futurist typography of Marinetti, the computer explorations of Muriel Cooper at MIT, and the phenomenology of Robert Irwin.”*

Marinetti, *Zang Tumb Tumb*, 1912[64]
A story about a husband writing home while being fired on during World War I is innovated by Marinetti ignoring the literal text of the story and retelling it with a soundtext which has no meaning in conventional grammar.

Muriel Cooper, *Information Landscapes,* 1994[65]
The computer made 3 dimensional virtual text and the concept of blur (information delivered in the moment, existing beyond the rules of single-point perspective) possible. Cooper's innovation was to recognize and begin to create rules of 'vocabulary' of these occurrences. See her description of the VLW mission (page 9, note 13).



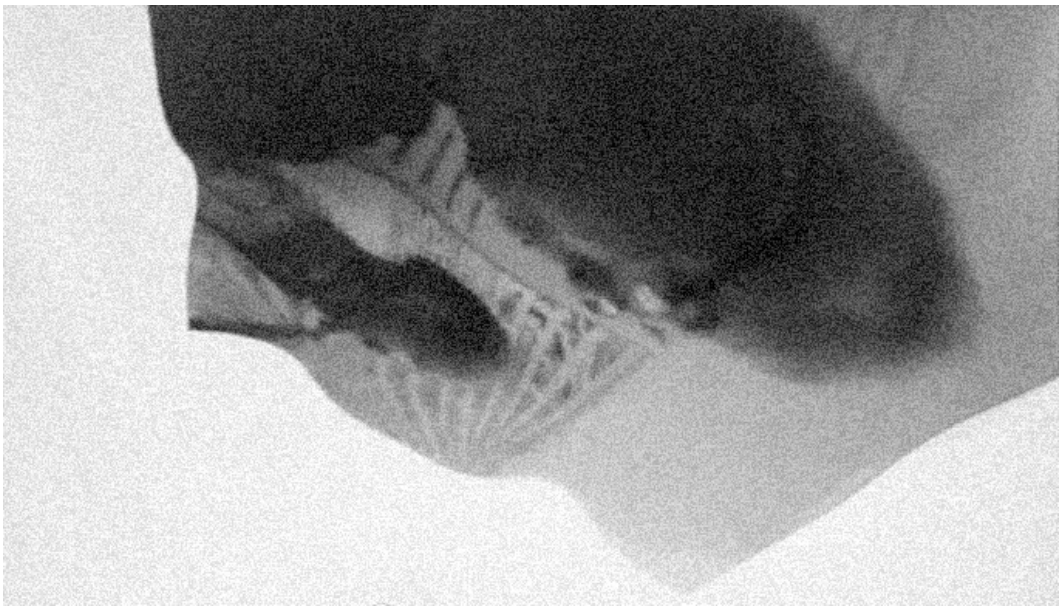
Robert Irwin, *Homage to the Square*[3], 1999-2000, Dia Foundation, New York.
Irwin made the environment his art.
He was writing poetry about light in 1988.

Robert Appleton, *New Music America Miami,* 1988. I used Irwin's poetry and my interviews with artists to make the environment a poster — a transparent hologram with text and video printed on paper.

[33] FT Marinetti, *Zang Tumb Tumb* , Adrianopoli, October 1912.

[65] Muriel Cooper, Screen from *Information Landscapes*, MIT, 1994.

Event 3



Robert Appleton with Bob Brough, *Event 3*, 2009

Event 3[66] uses most of the same technology and text as *Event 2* except that it's live in front of an audience and it involves another performer — Bob Brough on soprano saxophone. This relationship of collaboration with another creative contributor, particularly an improvisor, is very rewarding for me. Brough and I have known each other for many years and performance in our case becomes an extension of our friendship. We met, as he says in London, at particularly significant times in our lives. And we reconnected after many years when I moved to Canada. A free conversational tone permeates the work we make together, which allows new things to occur in the moment. During Event 3 we also performed a new piece by Krishnamurti called Talking as

[66] Robert Appleton with Bob Brough. *Event 3*, 2009 http://www.youtube.com/watch?v=EFjgi5YvlcE (accessed on August 30 2010) Event 3.3 Chat. http://www.youtube.com/watch?v=vxCrL3_ytG0&feature=related (accesses on August 30 2010)

Friends[67] in which we each create a musical or visual statement in a conversational fashion — one line after the other. This call and response is activated by sensor technology in my computer and his microphone, which determines when silence has occurred and then moves sequentially through a series of textual phrases so that we each manipulate the sound and text. Here is a short excerpt from the script which suggests who plays over which text, though this can change in the moment:

1 *The important thing is to discover,*
2 *and after discovering,*
1 *to keep going.*
2 *It is detrimental to stay*
1 *with what you have discovered,*
2 *for then your mind is closed,*
1 *finished.*
2 *But if you die*
1 *to what you have discovered*
2 *the moment you have discovered it,*
1 *then you can flow*
2 *like a stream,*
1 *like a river*
2 *that has an abundance*
1 *of water.*

Event 4

Event 4[68] is a continuation of events 2 and 3. It was performed before an international audience of designers and students at the AGI Congress in Istanbul Turkey in October 2009. It added a new musician — the wonderful saxophone player Yaha Dai and the use of a Twitter feed which placed messages in Turkish on the subject “I love you” (seviyorum seni) as improvisational text for performance. Text then was improvised for the first time by the performers and the audience.

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[67] Krishnamurti. *Talking as Friends*.10th Public Talk, August 1, 1965.

[68] Robert Appleton with Yahya Dai. *Event 4*. http://www.youtube.com/watch?v=n7zkWdH7zR8&feature=related (Accessed August 10 2010)

Event 5 and 6, 2009-2010

Event 5

Robert Appleton, *Event 5,* 2009-10

Event 5[69] introduces several new themes. The text of R. D. Laing from his ode to psychoanalysis *Knots*,[70] my texts about my work, its relationship to chance and the recognition that in it, meaning is invented by an audience. *Event 5* also includes several

[69] Robert Appleton *Event 5,* Toronto http://www.youtube.com/watch?v=ccu3M18VWp4 (accessed August 10 2010)

[70] R D Laing, *Knots*, Random House, New York, 1972.

manipulated video scenes of the earth undergoing destruction from the film 2012[71]. From the perspective of the visual aural and textual in *Vortex*, Event 5 is significant in that it's the first piece in which I improvise all three as independent media. The text I speak is being projected on my body, and I am manipulating it as well as the images and sounds.

Reprogramming the social form of moviegoing and the movie itself is social commentary in which I appropriate the end of everything and allow us to experience it without the sugar-coated dialog of the original. Laings' text: "They are playing a game. They are playing at not playing a game. If I show them I see they are, I shall break the rules and they will punish me. I must play their game of not seeing I see the game" makes this clear. It also refers to the process of art-making and critiquing which all artists experience — and the expectation of meaning from an audience as if they felt it was something they had paid for and had a right to be told they had received. My text simply says "Sound, text and image integrate together no matter what random order they're placed in. Our minds synchronize the experience. We *invent* the meaning. And this forms the basis of human interaction."

There is yet another level of dialog here which relates to how Bob Brough and I first met in London. Although we have not yet played this piece together, it comes from this time in our lives — when he was a 'patient' in a program based on Laing's teachings and I was a 'visitor' in the program — both of us 'playing' our roles in that game.

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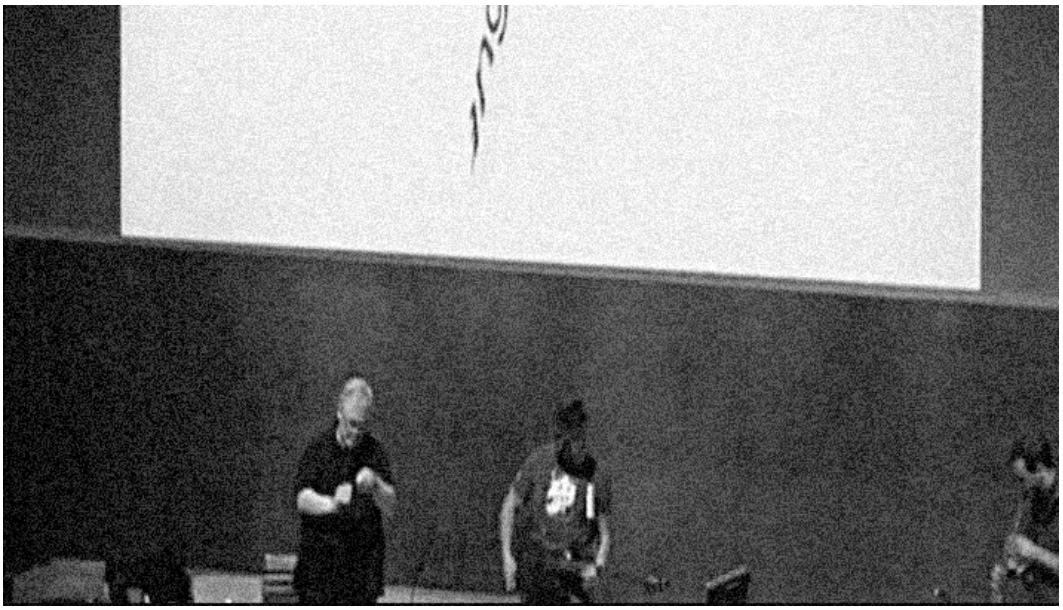
[71] *2012*, Columbia Pictures, 2009

Event 6



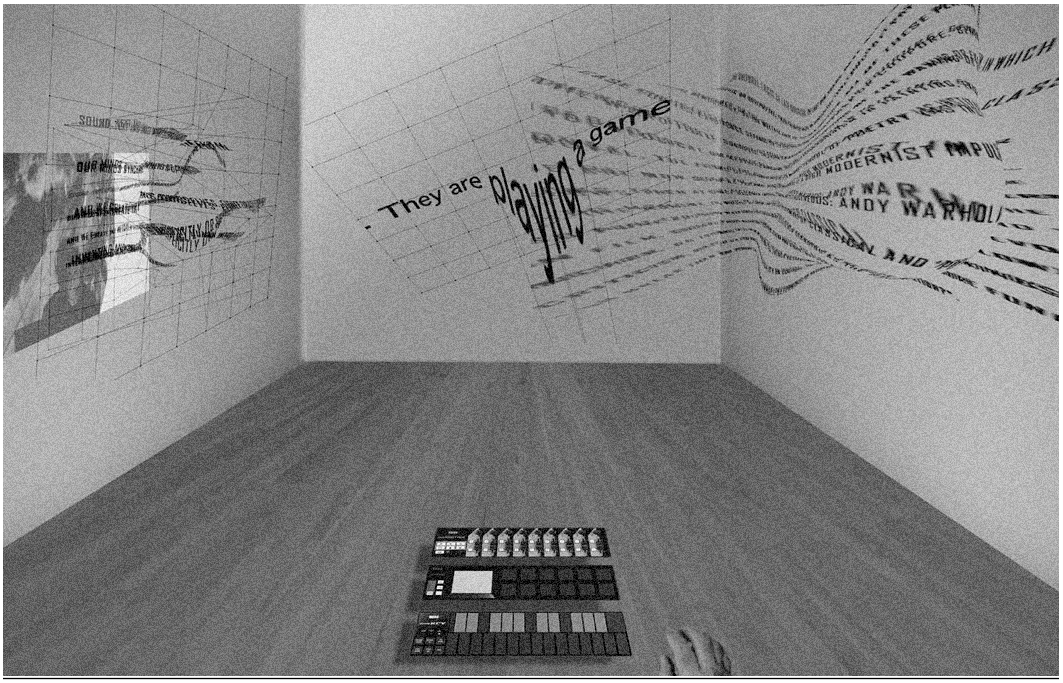
Event 6, 2010, Barcelona, Spain

Sergi Felipe Fernandez, (saxophone) and JP Carrascal, (guitar) made a solo event into a trio. We performed *Event 5* with the larger sound of three instruments and sound patches by Gilad Woltsovitch from Harvestworks in New York. I also composed two new pieces for this live event called *Event 6.*[72] One is based on David Tudor's *Toneburst*, and the other on George Russell's *Chromatic Universe* from *Jazz in the Space Age.* Axa Auditorium has a very large projection screen and a beautiful sound system. The live audience was there for my talk on design, which I gave first and which explained how I'd grown through a career as a visual artist to become a performing artist. This talk and the slide show which accompanies it is being made into a video for my thesis defense.

[72] Robert Appleton, *Event 6,* Barcelona, 2010 http://www.youtube.com/watch?v=k5ROcW-t4ZY&feature=related (accessed August 30 2010)

A theory of the visual aural and textual may result from my work over time. In the meantime however, as an honest response to a question about creativity on facebook, I explain my process as follows: "*I work until I like it. Then I stop."* To paraphrase a paragraph from my Literature Review: Bourriaud contends that the one significant difference (from postmodernism) is relationalism's refusal to use metonymy — the notion of something being represented by one of its parts — such as "city" being referred to by "rooftops". So each environment or social intervention is not a representation of something else, but of itself. This is how I feel about my work.

Event 7 Thesis Exhibition 2010



Robert Appleton with Bob Brough, *Thesis Exhibition*, Music Gallery, September 20 2010.

My intention for the Thesis show and the evening performance is to create the immersive environment I have been working on all summer. New Max/MSP/Jitter patches designed and created from scratch by myself and Pieter Coussement, as well as some new equipment, will allow me to project and improvise on three surfaces simultaneously with all three media. This will place the performers and audience at the center of a *Vortex* of three languages which can interact as one.

The patches we have made are called Building Blocks. They are modular, in that their base function is to allow all possible movements within a defined space. They also form a research space within my computer, or in the projected space, where proofs of concept can be resolved. All parts of a three-dimensional grid are mappable with text, with image and with sound, over time making a four-dimensional object. Speech to text has been developed with a native addon to Max. Text can move through image and video. It can be layered as deeply as necessary. It can wrap around and interact with other text and with images, video and sound, which can also do likewise.

The Basic Rules of Vortex Grammar[73]

1. Adjectives

Adjectives modify nouns. To modify means to change in some way. For example:
"I ate a meal." Meal is a noun. We don't know what kind of meal; all we know is that someone ate a meal.
"I ate an enormous lunch." Lunch is a noun, and enormous is an adjective that modifies it. It tells us what kind of meal the person ate.

With *Vortex* an adjective could be a visual, aural or textual segment, as could a noun or any other part of 'speech.'

In the above example I will substitute instances from my *Sketch for Performance/ Jasemon*, 2009-10. In the opening scene the textual Fredric Jameson Postmodernism or the Cultural Logic of Late Capitalism 1984 appears with the aural Looney Tunes fanfare (a comic though real suggestion of significance). The aural influences the visual and is therefore an adjective, while the visual (an entire phrase) is the noun.

The Looney Tunes aural component tells us what kind of statement we just read (an important one).

[73] Sampled from The Owl at Purdue University http://owl.english.purdue.edu/owl/section/1/5/ (accessed Sept 1 2010)

2. Irregular Verbs

Irregular verbs are found in English. Each consists of the present/root form of the verb, the (simple) past form of the verb, and the past participle form of the verb.

Present	Past	Past Participle
be	was, were	been
become	became	(has) become

In this example I will substitute the ending of *Sketch for Performance, a*nd place the words representing present, past and past participle in parentheses after each occurrence: “The final rendition of the text, image and sound has begun (present) out of sequence, as the music begins to speed- and cheer- up to a rousing finish (past), and the animated image immediately zooms out becoming smaller and smaller and ultimately disappearing in reference to a shrinking spotlight, as the word “modernism” now a fraction of it’s former size — vanishes forever (past participle) and the piece ends.

Here various aspects of the visual, aural, and textual create the irregular verb.

And again, vocabulary, using the rules of English, can be modified by any medium — visual, aural or textual.

The Vortex Engine in Max/MSP/Jitter

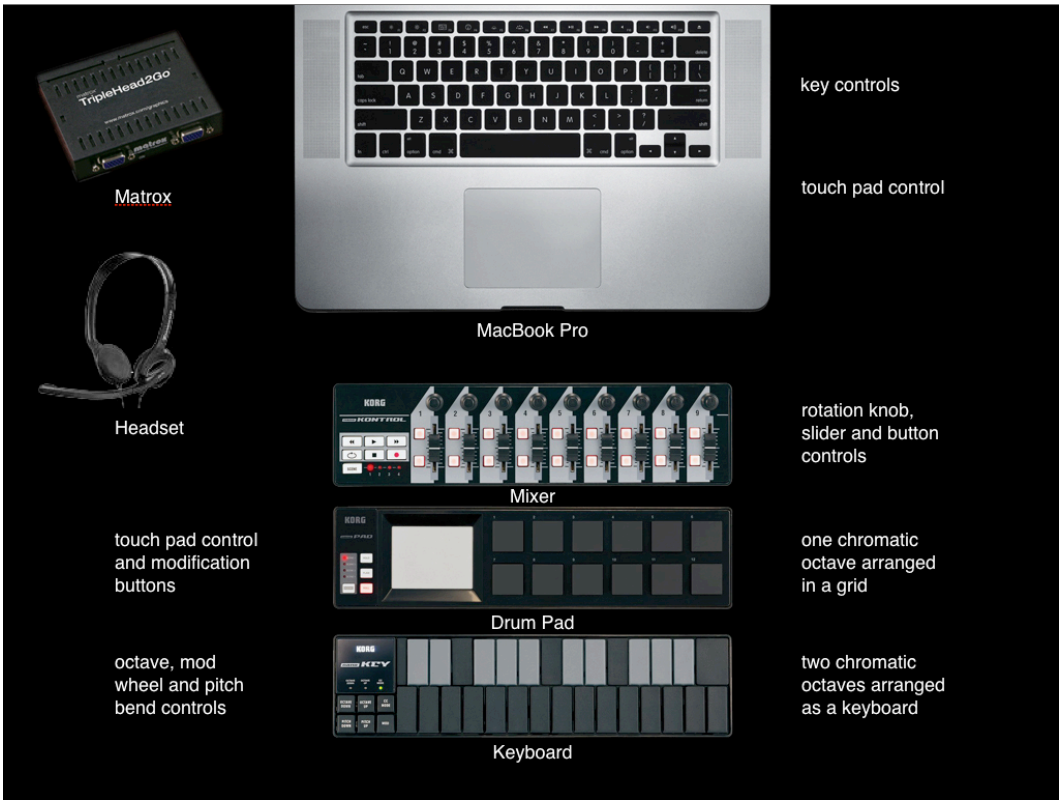
Max/MSP/Jitter provides the *Vortex* engine which drives my studio practice. It is based on midi — the digital language of sound. The translation of my three media into digital and numeric form provides a common vocabulary which each medium responds to slightly differently. The underlying control mechanism is mathematics.

My software has been completely written from scratch as a modular unit to which new items can be added or subtracted. It was collaboratively designed with Pieter Coussement, artistic researcher at IPEM, Institute for Psychoacoustica and Electronic Music at the University Ghent, Belgium, with whom I spent several days in July. We communicate and work regularly by Skype. Pieter first learned Max at IRCAM in Paris and currently conducts PhD research using this and other software.

The latest iteration of my *Vortex* engine is based on aesthetic and conceptual decisions I made in my first year at OCADU during my collaboration with programmer Nick Stedman. We worked side-by-side in my studio at Ryerson from March — August 2009, and more sporadically thereafter until November 2009. Gilad Woltsovitch a sound designer and Max researcher at HarvestWorks New York, helped program my musical concepts — which include my versions of separate compositions by both David Tudor (Toneburst) and George Russell (About Time, Events 1-10). Professional jazz guitarist Sandy Williams helped develop sound files within Russell's Lydian Chromatic Concept of Tonal Organization which Gilad translated into a Max patch, on my instructions.

Motions in Max/MSP/Jitter now include any activity in the x y and z axes, as well as camera fly-through of any part of the scene. I can also play up to 4 scenes at one time on

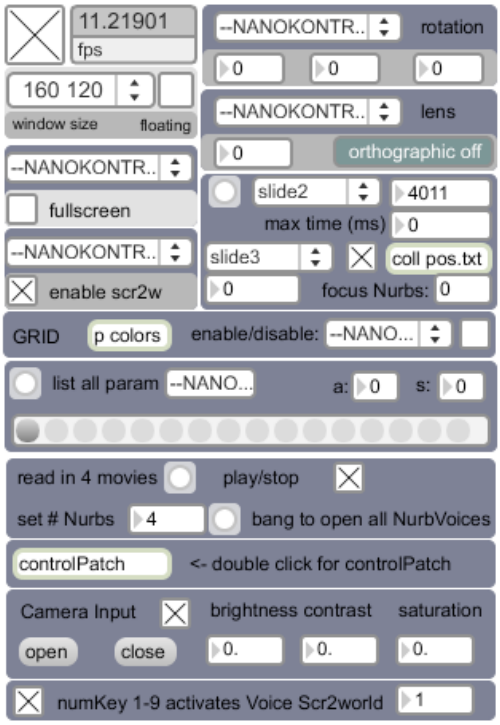
different surfaces with multiple layers. I can make text overlap or fly through a video or image. I can make it overlap itself or another text. I have infinite options to distort the texture or envelope on which text or image floats. There are presets which I can set up before performing. And there are automatic actions I can set in motion which will move text and image around the screen randomly. In addition to this I can manipulate sound and timbre with the images and vice-versa. It responds very quickly and uses the minimum size of image therefore gaining the maximum speed.



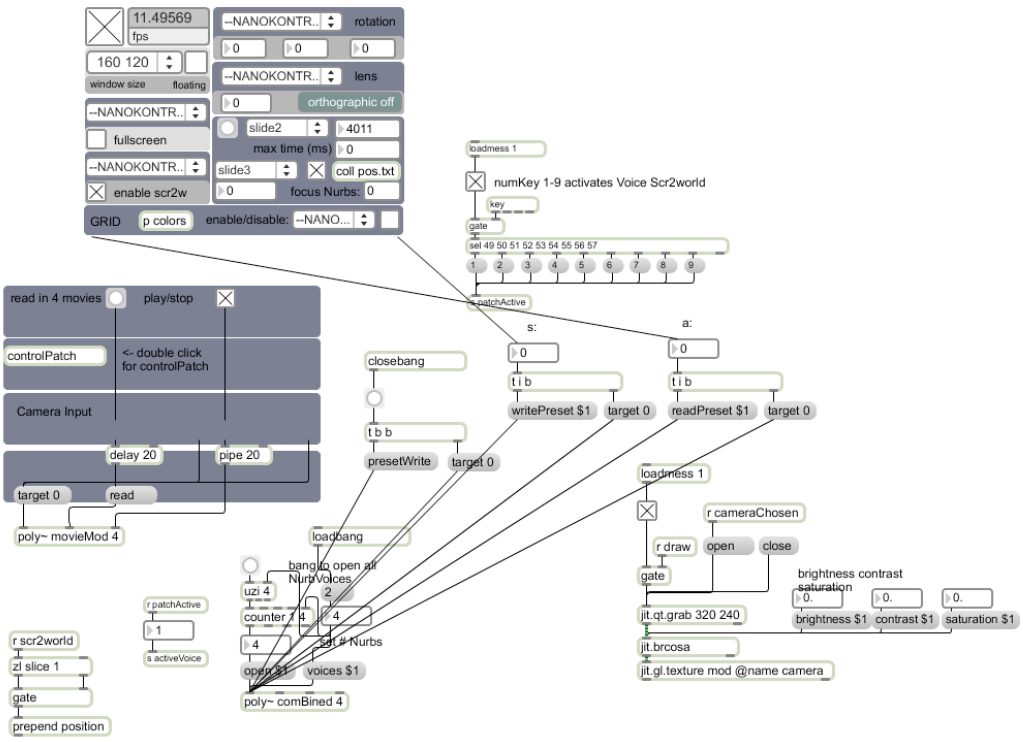
My hardware instruments.

GUperformer 2 ctrl Presentation Mode

The GUperformer 2 control patch opens the *Vortex* engine. Individual elements and presets are controlled from here. All controls can be assigned independently to my Korg Kontrol keyboard and then controlled from there in the moment of performance. This panel has been designed to hide the Max programming and keep performance as much about experience as possible. The patch, with programming revealed, can be seen in the next illustration.

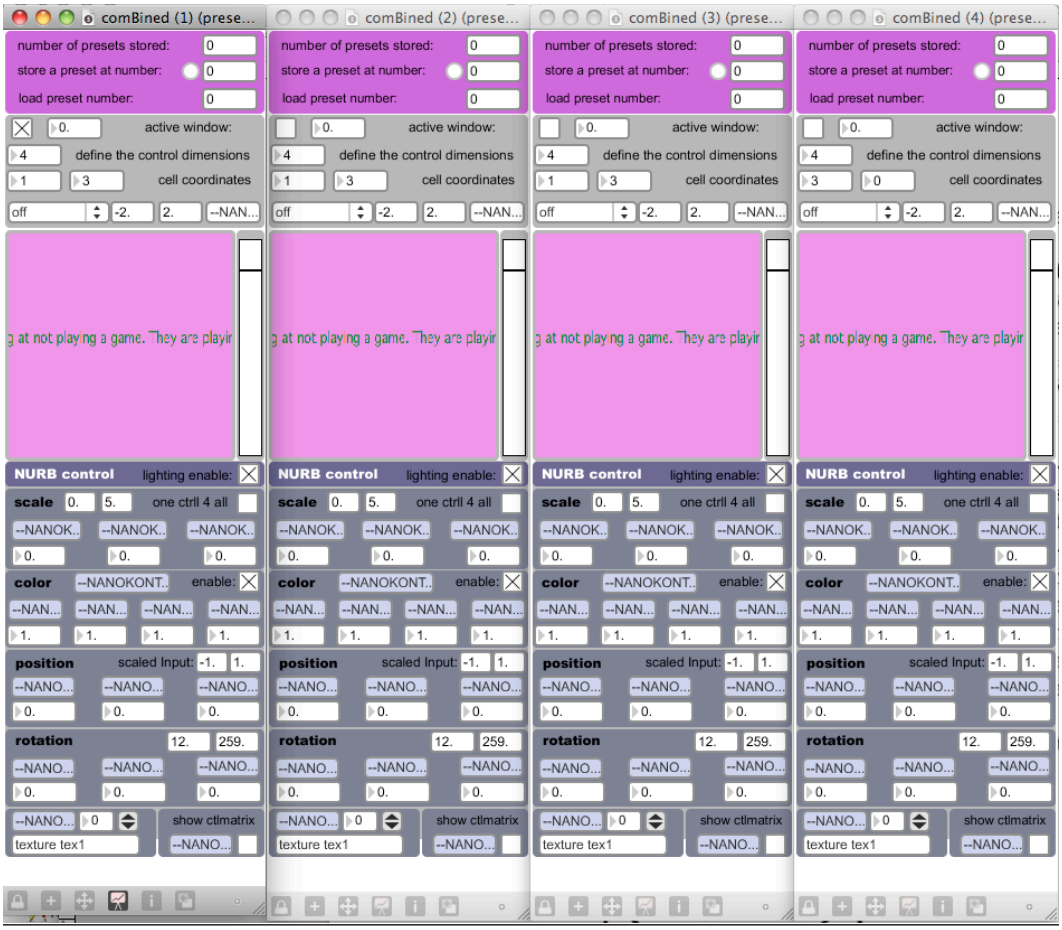


GUperformer 2 ctrl Patch Mode



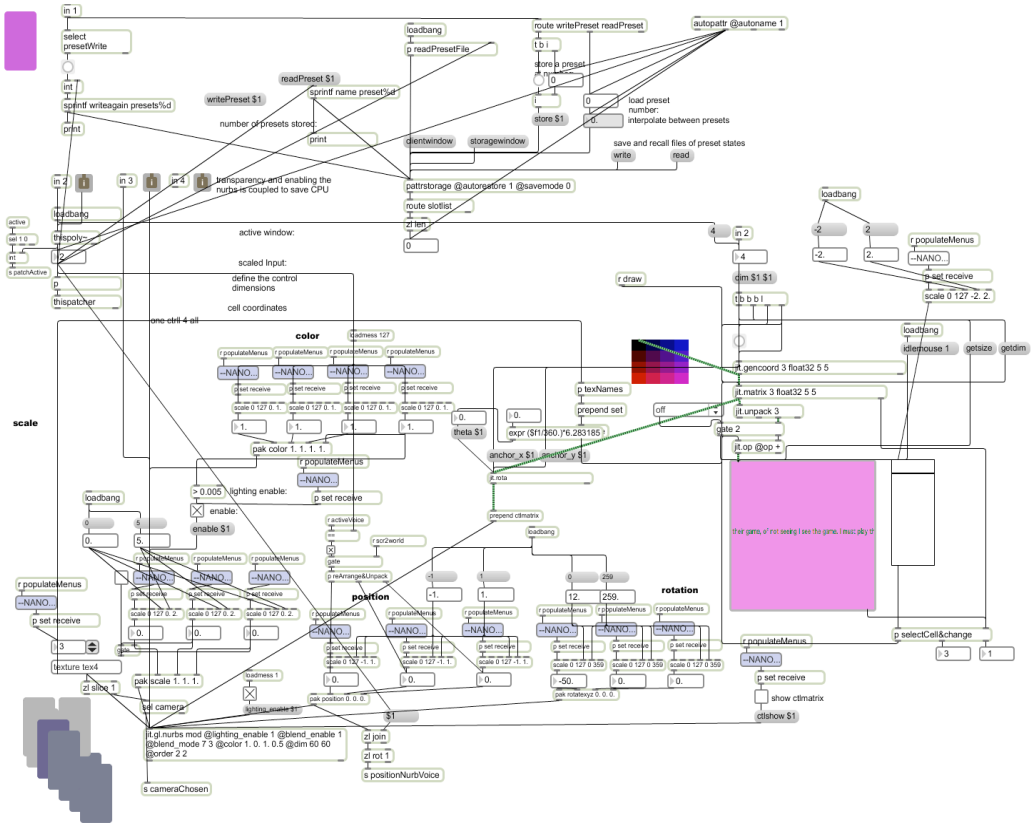
Demonstrates background programming.

Four Combined Nurbs in Presentation Mode



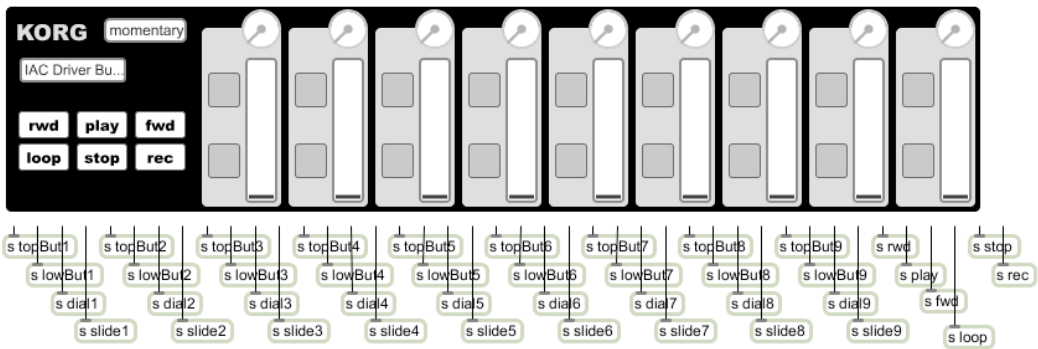
Individual nurb elements and presets are controlled from here. All controls can be assigned independently to my Korg Kontrol keyboard and manipulated from there in the moment of performance. One of these patches, with programming revealed, can be seen in the next illustration.

One Nurb in Patch Mode



Freedom of movement in image, text and sound requires this much programming for each nurb surface of text, video or image.

Korg Nano Kontrol in Patch Mode (manipulates many controls during performance)



Chapter 4. Conclusions, Contribution to the Field and Next Questions

Introduction

I have set out to accomplish my thesis objectives by using both research-based scientific technology and a creatively focused methodology. The science recreates my performance environment inside the computer where it is measurable as a proof of concept. And the creative methodology, through projection and performance, places the work in the real world where it can be seen felt, heard and experienced by others. The interactive aspects of the work, allow an audience to experience and affect the work by their presence in the space.

Philosophically, Vortex exists between the rejection of metonymy (the name of one thing standing for that of another — a metaphor) and the embracing of indeterminacy in John Cage's sense of the word — to remove aesthetic intention and allow the work to happen in the moment out of a pure state of being, with an infinite number of solutions.

Vortex. Visual Aural Textual. One Language involves immersion, language development, technological convergence and the bridging of three existing vocabularies into a single interdisciplinary whole with it's own values and dialects. It unearths new and contemporary meanings which exist because of otherwise unperceived changes in reality. It is based on (my) intuition that sound and the many undocumented, yet widely accepted concepts which its abstract language has helped develop, provides a key to new understanding of other modes of communication — in the visual and the textual. And when freely combined with these — as has happened each day since the earliest developments of linguistics, a rich experience awaits. My focus in the written thesis

begins with others who have helped develop this emerging sensibility. And I hope that my contribution adds some small meaning to their efforts.

What I have found

In general I am deriving a theory from an emergent practice, rather than developing a practice based on a theory.

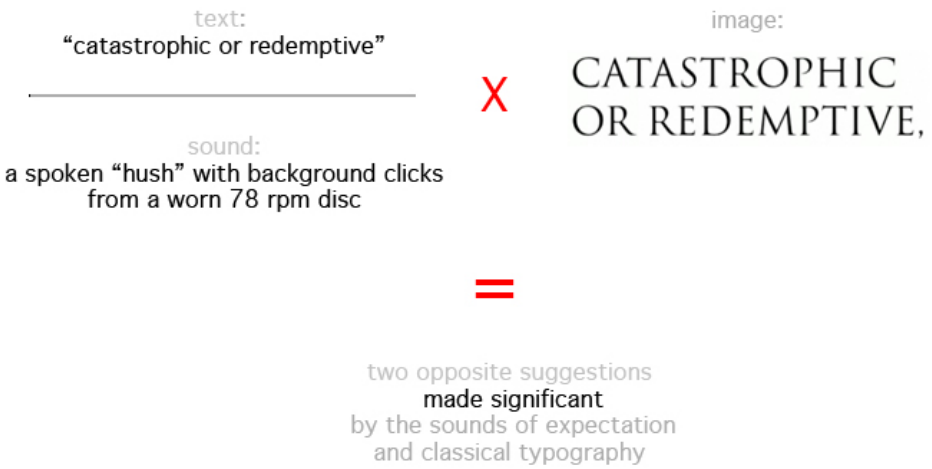
In answering my thesis questions, I will begin each section with the questions I asked (Q1, Q1a, etc) and report my progress with corresponding answers marked A1, A1a, etc.

Q1. What new meanings may be uncovered by improvising at the interdisciplinary intersection of the visual, aural and textual?

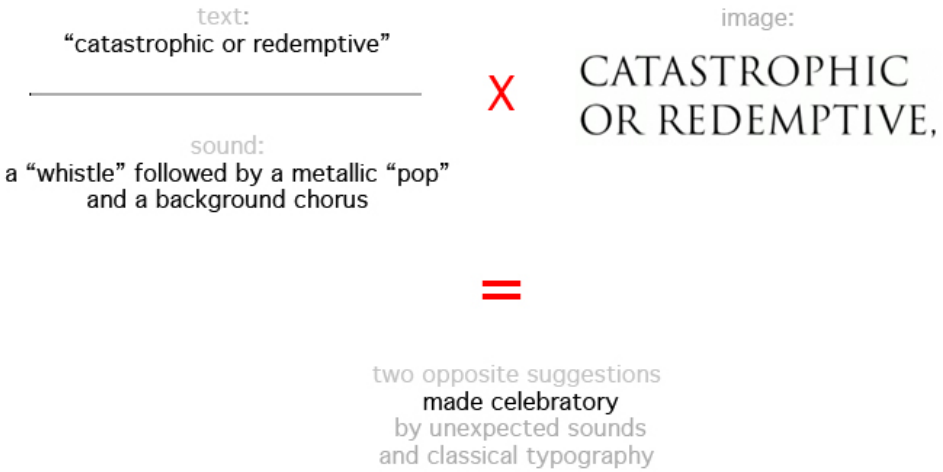
A1. In my *Sketch for Performance/Jasemon 2009/10*, I am testing our understanding of combined media by altering one element — sound. I use the same textual phrases against different sounds with visual deformations of the text. And this creates meanings, which I have written as equations in the manner of Wittgenstein's Tractatus Logico-Philosophicus.[74] Please also view the youtube video.[75]

[74] Ludwig Wittgenstein, Tractatus Logico-Philosophicus, Routledge & Keegan Paul, (1921),1961.

[75] Robert Appleton, *Sketch for Performance/Jasemon*, 2009-10 http://www.youtube.com/bebopple#p/u/2/GcxJ4Vk2kuk (accessed August 30 2010)



Equation 1. A two-second slice through the video *Sketch for Performance/Jasemon* 2009/10 during the first occurrence of the text. Rising tension is maintained by the sound of a needle crackling on a scratched LP or 78 disk. A “hush” at ‘catastrophic or redemptive’ suggests a significant event is about to occur.



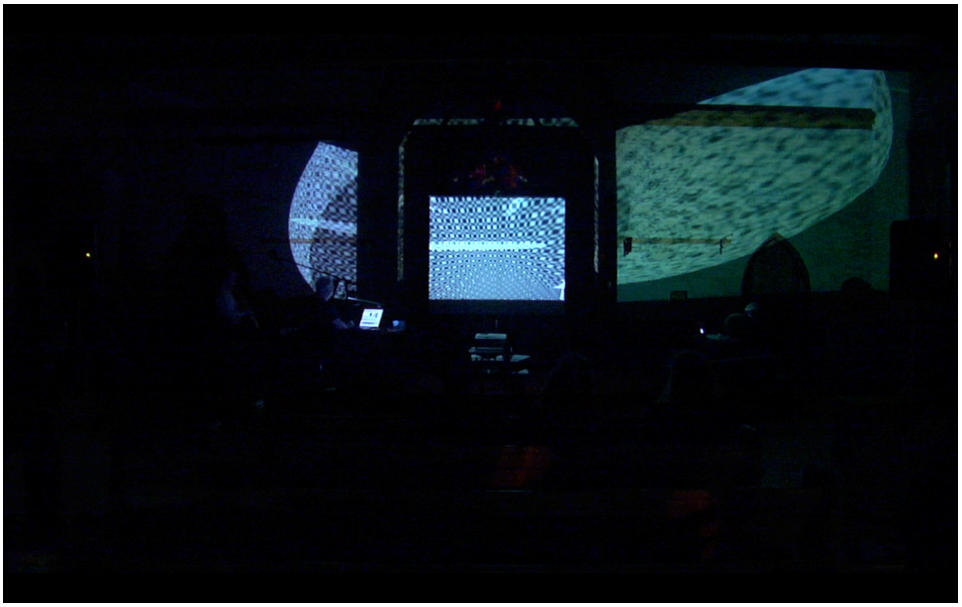
Equation 2. A two-second slice through the video *Sketch for Performance/Jasemon* 2009/10. The second appearance of ‘catastrophic or redemptive‘ begins with a whistle and a metallic “pop” followed by a vocal chorus — suggesting a celebration — a different meaning is created from the first occurrence of the text.

Sound affects the meaning of text. When a textual phrase or sentence is considered a ‘noun’, sound acts as an adverb - qualifying and modifying the meaning of the ‘noun’. The construction of *Sketch for Performance* was not improvised. It was a test of the interactive qualities of three media. I selected existing elements of video and sound and created a bricolage, using indeterminacy to allow the synchronicities which exist.

When improvising live with sound, text and image, many more meanings and emotions are revealed. Cage’s idea that every sound we hear is music, is expanded here — there are many more things present in virtual silence than sound. Everything visual, aural, textual, tactile and sensual that we can perceive becomes both communication and art. The process of making Vortex has sensitized me to experiences. For many individuals there are pieces of information which are never identified, and therefore not experienced. Information can come to us from any perceivable area in the vicinity of our being. Interactions between events around us have meaning if we choose to imbue them with it.

Q1a. How does technology alter the relationship between these three forms? Is a new democracy now suggested among them?

A1a. In the live performance at the Music Gallery on September 20 (which is documented on the video accompanying this thesis) sounds from three performers and individual members of the audience influence the imagery and text which interact in an immersive space — all of which is mediated by technology.



Vortex, Live performance at The Music Gallery, Toronto, September 20, 2010.

Mediation itself is the state of 'going-between' two or more positions. Technology allows a liquid connection between the three vocabularies and their combination into one, by the commonality of it's working language — mathematics, and by it's power to move digital information at high speed. Crossfading as it's described in Bourriaud's Postproduction is precisely this process. While open communication among media is certainly encouraged and made possible by technology, perception is not simply technological. It is philosophical, and as such always requires our imagination and willingness to change.

Q2. How does the poetic aesthetic developed in the creation of this work expand our understanding and appreciation of interdisciplinarity and evolve a language of its own? If so, why has such a language not already been 'written'?

A2. Part of the significance for me of evolving a language is that Vortex acknowledges and affirms interdisciplinarity as a subject of its own. This matters because it allows

others to develop their work in many subjects including visual music, performance, improvisation and technological convergences of all kinds with the sense that new vocabulary can be created and documented through their efforts, and we will all learn from this.

Q2a. What specific poetry exists and how does it differ from other poetic forms?

Derek Bailey tells this story about the saxophone player Steve Lacy:

> "In 1968 I ran into Steve Lacy on the street in Rome. I took out my pocket tape recorder and asked him to describe in fifteen seconds the difference between composition and improvisation. He answered: 'In fifteen seconds the difference between composition and improvisation is that in composition you have all the time you want to decide what to say in fifteen seconds, while in improvisation you have fifteen seconds."[76]

I think that in performance, poetry exists in exactly the same proportion as it does elsewhere, which is good, because it's still there when the lights go out.

Questions for the future.

My next challenges will be to continue developing my studio practice and theory in tandem with each other and to present my findings in published documents, exhibitions and performance for others to share, as well as to teach it as best I can.

I am interested in how science allows technology to reveal unrealized realities in our daily lives. Some thoughts that have struck me recently include the following:

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[76] Derek Bailey, *Improvisation: Its Nature and Practice in Music*. British Library National Sound Archive, 1992.

When I visited the Rijksmuseum for the first time in 20 years in August I was struck by the fact that in publishing for example we are still unable to even approximate the experience of standing in front of a Rembrandt and seeing the detail and power of this work. Why have we not begun to examine the artifacts on earth with the same attention as we pay to those in space?

How can we use our technologies to enhance the lives of those in most need? Design for the elderly has a long way to go in this regard — particularly since one of the largest groups of humans on the planet (the baby-boomers) are approaching old age. How will they cope?

And in global communication, how will the evolution of text and image (which began with the Bauhaus) and now includes sound (which came a little later) and then touch and smell (which have yet to be fully explored) — how will these things enhance communication? How much more will we know about ourselves and others through these explorations?

I believe the harnessing of philosophy and technology to human evolution is an important part of our future. As long as we take time to explore, understand and appreciate, the wonder will remain.

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Appendix A. Definitions[77]

Aural

Pronunciation:\ *ˈȯr-əl*\

Function: adjective

Etymology: Latin auris ear — more at ear

Date: 1773

Meaning: of or relating to the ear or to the sense of hearing

— au·ral·i·ty *ȯ-ˈra-lə-tē*\ *noun*

— au·ral·ly *ˈȯr-ə-lē*\ *adverb*

Indeterminacy

Pronunciation: \-nə-sē\

Function: noun

Date: 1649

Meaning: the quality or state of being indeterminate

Indeterminate

Pronunciation:\ˌin-di-ˈtərm-nət, -ˈtər-mə-\

Function:adjective

[77] http://www.britannica.com/bps/dictionary?query=dictionary (accessed August 10 2010)

Etymology: Middle English indeterminat, from Late Latin indeterminatus, from Latin in- + determinatus, past participle of determinare to determine

Date:14th century

Meaning:

1 a. not definitely or precisely determined or fixed : vague: not known in advance: not leading to a definite end or result

2: having an infinite number of solutions <a system of ~ equations>

3: being one of the seven undefined mathematical expressions

4: characterized by sequential flowering from the lateral or basal buds to the central or uppermost budsalso: characterized by growth in which the main stem continues to elongate indefinitely without being limited by a terminal inflorescence compare determinate

— in·de·ter·mi·nate·ly adverb

— in·de·ter·mi·nate·ness noun

— in·de·ter·mi·na·tion \-ˌtər-mə-ˈnā-shən\ noun

Metonymy

Pronunciation: \mə-ˈtä-nə-mē\

Function: noun

Inflected Form(s): plural me·ton·y·mies

Etymology: Latin metonymia, from Greek metōnymia, from meta- + -ōnymon -onym

Date: 1547

Meaning: a figure of speech consisting of the use of the name of one thing for that of another of which it is an attribute or with which it is associated (as “crown” in “lands belonging to the crown”)

— met·o·nym·ic \ˌme-tə-ˈni-mik\ or met·o·nym·i·cal

Textual

Pronunciation: \ˈteks-chə-wəl, -chəl

Function: adjective

Etymology: Middle English textuel, from Medieval Latin textus text

Date: 15th century

Meaning: of, relating to, or based on a text

— tex·tu·al·i·ty \ˌteks-chə-ˈwa-lə-tē\ noun

— tex·tu·al·ly adverb

Visual

Pronunciation:\ ˈvi-zhə-wəl, -zhəl; ˈvizh-wəl

Function: adjective

Etymology: Middle English, from Late Latin visualis, from Latin visus sight, from vidēre to see

Date: 15th century

Meaning:

1: of, relating to, or used in vision <~ organs>

2: attained or maintained by sight <~ impressions>

3: visible <~ objects>

4: producing mental images : vivid

5: done or executed by sight only <~ navigation>

6: of, relating to, or employing visual aids

— vi·su·al·ly \ˈvi-zhə-wə-lē, -zhə-lē; ˈvizh-wə-lē\ adverb

Vortex

Pronunciation:\ ˈvȯr-ˌteks\

Function: noun

Inflected Form(s): plural vor·ti·ces \ˈvȯr-tə-ˌsēz\ *also vor·tex·es* \ˈvȯr-ˌtek-səz\

Etymology: New Latin vortic-, vortex, from Latin vertex, vortex whirlpool — more at vertex

Date:1652

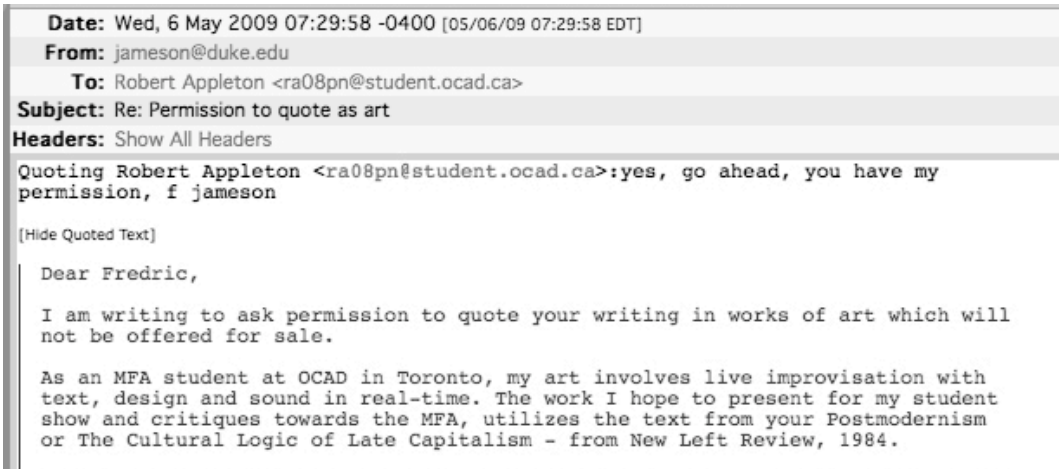
Meaning:

1: something that resembles a whirlpool <the hellish ~ of battle — Time>

2 a: a mass of fluid (as a liquid) with a whirling or circular motion that tends to form a cavity or vacuum in the center of the circle and to draw toward this cavity or vacuum bodies subject to its action especially: whirlpool, eddy b: a region within a body of fluid in which the fluid elements have an angular velocity

Appendix B. An Email from Fredric Jameson

I wrote to Fredric Jameson in 2009 asking permission to use his work (specifically the essay Postmodernism or the Cultural Logic of Late Capitalism from New Left Review 1984) in the context of my studio practice and thesis. He granted this by email.



Date: Wed, 6 May 2009 07:29:58 -0400 [05/06/09 07:29:58 EDT]
From: jameson@duke.edu
To: Robert Appleton <ra08pn@student.ocad.ca>
Subject: Re: Permission to quote as art
Headers: Show All Headers

Quoting Robert Appleton <ra08pn@student.ocad.ca>:yes, go ahead, you have my permission, f jameson

[Hide Quoted Text]

> Dear Fredric,
>
> I am writing to ask permission to quote your writing in works of art which will not be offered for sale.
>
> As an MFA student at OCAD in Toronto, my art involves live improvisation with text, design and sound in real-time. The work I hope to present for my student show and critiques towards the MFA, utilizes the text from your Postmodernism or The Cultural Logic of Late Capitalism - from New Left Review, 1984.