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ERASING BOUNDARIES:  
INTERMEDIA ART IN THE DIGITAL AGE

PANEL ABSTRACT

"Intermedia" is a term coined by the Fluxus artist and theorist Dick Higgins which refers to works of art that include structural elements not usually associated with the medium being performed. Although intermedia can be "multimedia" it certainly does not have to be. In this panel we would like to make the distinction between the two terms.

In intermedia, the compositional process works across the boundaries between media or even fuses media. Thus intermedia implies structures that are shared by or translated from one medium to another: in this respect it is a more specifically defined term than multimedia. While it is sometimes called "synesthetic art," intermedia does not seek to imitate the physiological phenomenon of synesthesia, but approaches it metaphorically. It extends the creation of form across sensory modalities without necessarily promoting a tight coupling of multisensory events. Synesthetic coupling is just one potential contrapuntal technique for intermedia, a kind of parallel movement. Other possibilities abound, and intermedia is just getting started as an artform.

With the advent of digital multimedia and real time interaction and performance with computers, intermedia can now achieve a precision and synchronicity of events that were not possible until the last two decades. Moreover, digital media enable compositional structures to operate at all levels of granularity and with a degree of abstraction that places all media on the same plane. One could argue that digital intermedia is the high-level process that corresponds to the low-level truism: all media is data, a single substance. Intermedia suggests that we explore that substance with all available senses.

This panel will examine the historical concept of intermedia, compositional methods and processes for creating intermedia, issues of sense perception and sensory coupling in the reception of intermedia, and the implications of digital multimedia, real time performance and interaction for the future development of intermedia. We also expect to open the discussion to the metaphoric and even magical qualities associated with synesthesia, and to the relation of multisensory stimuli to memory, but by grounding the panel in compositional practices and structures we hope to avoid some of the pitfalls of interpretation that the mystique of synesthesia often inspires.

While we cannot predict the trajectory of intermedia across the imaginary of the 21<sup>st</sup> century, it holds out the possibility of new forms and experiences. At a time when we have begun to suspect that formal invention had collapsed along with the historical avant-garde, this may even permit us a brief moment of euphoria. We would do well to remember how, at the beginning of the 20th century, the cult of synesthesia promised a mystical revelation that did not transpire. At the beginning of the 21<sup>st</sup> century, intermedia points to a perceptual revelation that may well transpire. The instruments are in our hands and it seems we have only to learn to play them. To what end and for whom? As much as with the formal and technical issues of digital intermedia, we must also grapple with this question.

Contact

PAUL HERTZ  
Northwestern University  
1890 Maple Avenue, Suite 175  
The Collaboratory Project  
Evanston, Illinois 60201 USA  
+1.847.467.2443  
+1.847.467.7885 fax  
paul-hertz@northwestern.edu

Panelists

INA BLOM  
PAUL HERTZ (CO-CHAIR)  
JACK OX (CO-CHAIR)  
ANDREA POLLI  
YVONNE SPIELMANN

OPENING STATEMENT

Brief thematic presentation by co-chairs (five minutes):  
Intermedia and structure; synesthesia as method and metaphor; cross-modal structure, interactivity, and immersion as forms of revelation.

YVONNE SPIELMANN

*Forms and Structures of Intermedia*

Abstract

Starting from the phenomena of convergence in recent media development, the paper opens the question how we may consider the interrelationship between different media in the digital age. Conceptually, the term intermedia implies an interrelationship between different media that merge with each other where the couplings of different media elements result in a third, a new form of media. This can be characterized as the transformative quality of intermedia. The forms and the structures effected through an intermedial relation and transformation may shift, nevertheless intermedia structurally differs from related concepts such as multimedia and mixed media. The paper discusses the history and theory of the concept of intermedia in relation to other forms of interrelationship and in comparison to intertextuality and the notion of dialog. The aim is to point out similarities and differences in the history of synaesthesia that shape the understanding of the specific concept of intermedia and also help to define the limits of intermedia when confronted with hypermedia and hybridization. Furthermore, the convergence of media in intermedia that is based on the transformation is different from hypermedia where the issue is no longer transformation but access and multidimensional connectivity. I will argue that intermedia is conceptual term and encompasses: a model of transformation; a structural shift in the organization and positioning of media elements to build a form; and finally, an aesthetic strategy differently performed in analog and in digital images. In particular with regard to the interrelation of aesthetic features referring to image, text, and music, I will show that intermedia practices in the arts cause the revelation of the medium through the representation of the difference between form and medium. As the history of the concept shows, the emergence of intermedia is based on the difference between media and it reveals media specific elements, because intermedia is a self-reflexive and transformative device. As theories point out, the concept implies a dialectical relationship between "old" and "new," "analog" and "digital" media, and the relationship between (historically) separate media is dynamic. In short; I will consider intermedia as a conceptual term and a category of transformation in media arts. As such, intermedia preshapes and prefigures issues in digital imaging and virtual reality.

Key Words

Intermedia, multimedia, hybridization, intertextuality, transformation, digital images.

*Yvonne Spielmann*

Yvonne Spielmann teaches Media Studies at the University of Siegen, Department of Art. She received her PhD in 1989, and the postdoctoral degree (habilitation) in 1997. She was awarded a postdoctoral fellowship at the Getty Center in 1989/90 and a fellowship at the Society for the Humanities at Cornell University for the year 2000/2001. Her published essays include those in German and English on experiment and avant-garde; history and theory of visual media; aesthetic theory in 20th-century media theories, intermediality and visual culture. Books in German include: *Art and Politics of the Avant-Garde* (editor), Frankfurt/Main 1989; *The Concept of Avant-Garde*, Frankfurt/Main 1991; *Intermediality: The Systems of Peter Greenaway*, Munich 1998; *Image - Media - Art* (editor together with Gundolf Winter), German/English, Munich 1999. She is currently writing a book on video arts.

INA BLOM

*The Touch Through Time - Raoul Hausmann, Nam June Paik and the Optophon*

Abstract

The paper discusses the interchange between technology and historiography in Berlin Dadaist Raoul Hausmann's Optophon (1920) — a synaesthetic instrument designed to transform sound signals into light signals and vice versa. Hausmann's invention was part of his attempt to formulate a new mode of perceptual presence, which involved both a particular notion of tele-visibility and a new "interruptive" form of tactility which could perhaps be described as the construction of a transactional synthesis beyond the realm of the corporeal. Hausmann's renewed focus on electronics in the 1960s highlights the historiographic implications of this construction. The Optophon could on the one hand be seen as a rudimentary piece of groundwork that supported the technological consciousness from which new electronic-related art, such as Nam June Paik's new television art, was emerging. This was, notably, and art predicated in the telematic and the immersive. On the other hand, Hausmann's 1960s elaboration on the theme made it increasingly clear that his investment in the telematic was destined to produce an interruption at the site where such art-historical legacies were constituted.

*Ina Blom*

Ina Blom is a writer, art critic and art historian based in Oslo, Norway. After a short period as a senior curator at the Museum of Contemporary Art, in Oslo, she is now an associate professor at the Institute of Art History, University of Oslo, where she submitted her doctoral dissertation "The Cut Through Time, A Version of The Dada/Neo-Dada Repetition" (1999). A former radio DJ and music critic, she is an editor of the art journal NU and the cultural journal Samtiden, and a regular contributor to Frieze and Flash Art. Her writing has appeared in numerous other books and publications. Her most recent publication is a book-length essay on the ambivalence of Joseph Beuys.

JACK OX

*A Complex System for the Visualization of Music, including the journey from 2D to Virtual Reality*

Abstract

Jack Ox will give a description of the algorithmic, music visualization system she developed over a period of twenty years outside of cyberspace. She will then describe the transformation of this system into a virtual reality 3D immersive world utilizing supercomputing technology.

Ox makes detailed analyses of musical data from either the written score and/or an electronic score known as MIDI. This information might include any or all of the following: pitch, harmonics, phonemes and/or formants, time, timbre, and dynamics. Each of these is translated into a visual data system created by the artist. The environment through which the data is experienced or seen has always been landscape and/or architectural images that are connected to the visualized music in metaphorical and structural ways.

She has also developed several complex color systems for the carrying of information including harmonic movement and quality, vowels, timbre, and dynamics. These color systems occupy an important place in the complex of systems needed to translate music into visual images with a satisfactory level of detail.

The latest version of this group of systems has become an actual visualization instrument, the 21<sup>st</sup>-century Virtual Color Organ because it is the most recent incarnation of an ongoing number of interesting precedents like the 1730 Ocular Harpsichord by Louis B. The Virtual Color Organ is an interactive virtual reality instrument — a stereoscopic, immersive sound and visual environment.

Ox will describe the project currently being realized in the Organ, "Im Januar am Nil," by the internationally known computer composer, Clarence Barlow. The melodic structure of this piece takes its mathematical components from a spiral, while the harmonic structure comes from the formants of vowel sounds.



Jack Ox, Still Frame from 21<sup>st</sup> Century Color Organ

The Virtual Color Organ is supported by the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign, with additional support from Silicon and EAI. Ars Electronica provided the initial research and development money; Robert Putnam from the Scientific Computing and Visualization Group at Boston University is doing the interactive, kinetic sound placement and 3D localization. David Britton is the programming architect, and Art and Science Collaboration, Inc. is supporting the project as the umbrella organization to receive non-profit funds.

*Jack Ox (co-chair)*

Jack Ox has been working on the visualization of music for over 20 years, including studies and research in musicology and phonetics. While working on her 800 square foot visualization of Kurt Schwitters' "Ursonate," the 41-minute long sound poem in a four movement sonata form, she came upon and caused to be published on WERGO (Mainz, Germany) an original, unknown performance by Kurt Schwitters himself. The complete "Ursonate" will be shown in the Contemporary Museum of Lodz, Poland in 2002. Ox was included in "Vom Klang der Bilder" at the Staatsgalerie Stuttgart in 1985, made an "Ursonate" presentation at the Centre Georges Pompidou during the Kurt Schwitters retrospective in Paris in 1994, and exhibited the complete cycle of 12 paintings based on Anton Bruckner's "Eighth Symphony" in 1996 at the Neue Galerie der Stadt Linz, Austria. She has shown parts of her "Ursonate" installation at SoundCulture'96 in San Francisco and at the Podewil, Berlin in 1998. The electronic version of the "Ursonate," created by the graphics department is the current exhibition online at the University of Illinois, Urban-Champaign's curated site "@art" ([www.art.uiuc.edu/@art/main.html](http://www.art.uiuc.edu/@art/main.html)). Ox has been on the editorial board of Leonardo for over 10 years and is presently guest editor, along with Jacques Mandelbroijt, of a special section called "Synesthesia and Intersense." She is also on the Board of Directors of ASCI. Her collaborative project, the 21st century Virtual Reality Color Organ, has received support from NCSA, BU, SGI, EAI. Ox was a visiting fellow in the department of Computer Science, Lutchi Research Centre, Loughborough University, UK, in 2000. [www.bway.net/~jackox/](http://www.bway.net/~jackox/)

**PAUL HERTZ**

*Form, Substance, Correspondance*

**Abstract**

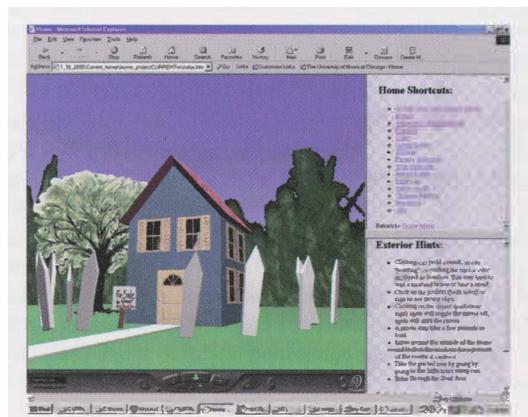
Cross-modal form is an attempt to "make sense" of the world. There are two primary approaches to intersensory composition: a poetics that operates on symbols through language and a constructivist methodology that formalizes media. Computational technology enables new forms and disciplines for the formal approach, while the poetics of intermedia provide the setting for these formal experiments – a way to construct their meaning and cosmological viewpoint. Intermedia structures within interactive environments can have both cognitive and emotional aspects; they expand the field of information and intensify the experience of immersion. We will view some examples of artists working with multi-modal visualization and emergent behavior of complex sys-

tems, within the scientific and the artistic domains. These include the author's own generative/a-life system, the "ignoverse," an interactive environment for cross-modal composition.

*Paul Hertz (co-chair)*

Paul Hertz teaches and develops interactive multimedia projects at Northwestern University in Evanston, Illinois, USA. From 1971 to 1983 he lived in Spain, where he exhibited his drawings, paintings, and musical and theatrical compositions, notably in the XVIII International Theater Festival of Sitges, the Universitat Nova in Barcelona, and in various editions of the Joan Miro International Drawing Competition. He also worked as a jazz musician in local nightclubs. In 1985 he was awarded a research grant from the Mellon Foundation as a Fellow of the Center for Advanced Studies in Art and Technology at the School of the Art Institute of Chicago, where he was working towards his MFA degree. In 1994, with a host of other artists and engineers, he collaborated with Muntadas in creating the "Fileroom," one of the first on-line artworks. As a visiting artist at the Polytechnic University of Valencia, Spain, in 1996, he exhibited his suite of digital images "Deadpan, or the Holy Toast" and chaired a panel on "The Colonization of Cyberspace," a topic explored by seven artists in "The Homestead/La Finca," a WWW installation he designed and curated. He has exhibited his work in Artemisia Gallery, Chicago, the Chicago Cultural Center, ISEA95, ISEA97, and SIGGRAPH99, where he was also a panelist for "Algorithmics and Patterns from Life." For Chicago's Project Millennium he curated a show of new media art, "Second Nature," at the Ukrainian Museum of Modern Art. Hertz is a reviewer for Leonardo Electronic Almanac. His essay on the poetics of intermedia, "Synesthetic Art, an Imaginary Number?" was published in the "Synesthesia and Intersense" section of Leonardo, v32-5, 1999. Currently he is working on a CAVE-based virtual reality project, "Fool's Paradise," a collaborative effort funded by a grant from the Center for Interdisciplinary Research in the Arts at Northwestern University.

[www.nwu.edu/people/paul-hertz](http://www.nwu.edu/people/paul-hertz)



Annette Barbier, Screen Shot from HOME  
[www.unreal-estates.com](http://www.unreal-estates.com)

ANDREA POLLI

*Rapid Fire: Performative Experiences in Scanning the Visual and Auditory Scene*

Abstract

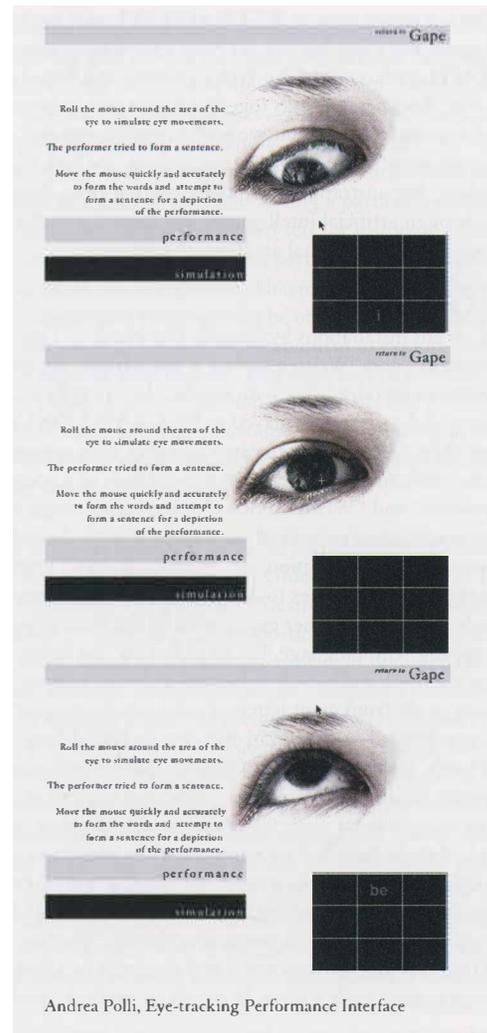
The author discusses her work in building and performing with eye tracking musical instruments and other inter-sensory instruments. Issues involved in the translation of different modalities, or “digital synesthesia” are central to the instrument design, informed by processes used in musical improvisation. Improvisational systems in these cases serve as a temporal document of the decision making process, infusing computer-based interactivity with the potential for deep structural interaction between the different sensory modes of human perception.

*Andrea Polli*

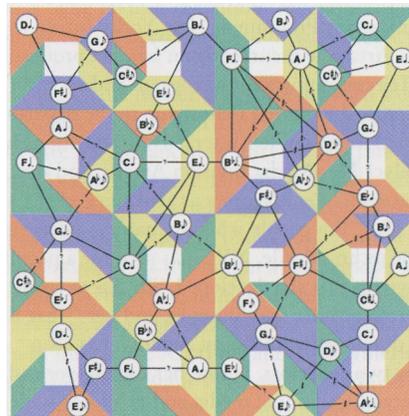
Andrea Polli is a digital media installation and performance artist living in Chicago, Illinois. She is currently an Assistant Professor of Digital Media at Columbia College Chicago and an adjunct faculty member of Art and Technology at the School of the Art Institute of Chicago. Polli has presented her performance work with eye and motion tracking devices throughout Europe, in Brazil, and across the United States. Her recent Audio CD, “Active Vision,” was produced at the iEAR Institute at Rensselaer Polytechnic and at Harvestworks in New York City. Her recent performance work is documented in the article “Active Vision” in the October 1999 issue of the journal Leonardo; and a retrospective article about her work from 1991-1998, “Virtual Space and the Construction of Memory,” is published in the Spring 1998 issue of Leonardo. [homepage.interaccess.com/~apolli](http://homepage.interaccess.com/~apolli)

*Annette Barbier*

Annette Barbier is a media artist whose roots are in sculpture and video and who is currently exploring the expressive possibilities of new media. An attempt to integrate life and art leads her to make commentaries on the domestic environment. A recent work, “Home Invasion,” concentrates on dealing with pesky telemarketers. Other ongoing projects involve an exploration of American expatriates and why they left home, as well as ongoing revisions to “Home,” an interactive VRML environment which includes the work of several other artists. This can be found at: [www.unreal-estates.com](http://www.unreal-estates.com). Barbier is Director of the Center for Art and Technology and an Associate Professor at Northwestern University, where she teaches computer animation, video installation, and experimental video. Selected video work is distributed by the Video Data Bank. [www.rtvf.nwu.edu/people/barbier/](http://www.rtvf.nwu.edu/people/barbier/)



Andrea Polli, Eye-tracking Performance Interface



Paul Hertz, Parametric Space for “Pond”  
(digital intermedia installation, 1997-2001)