Adaptation and Convergence of Media

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Media

'HIGH' CULTURE INTERMEDIALITY
VERSUS
POPULAR CULTURE INTERMEDIALITY

Contents

Contributors

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Anna Boswell is a lecturer in Humanities at the University of Auckland. She talks and writes about environmental issues in terms of public pedagogy and media ecologies, and has been awarded a Marsden Fund Fast-Start grant (2016–19) by the Royal Society of New Zealand for a project investigating the history of zoos and wildlife sanctuaries in the settler south. Her most recent work has been published by *Animal Studies Journal*, the *Journal of New Zealand Studies* and the MLA, and her commissioned chapter on 'Australasia and Oceania' for the *Handbook of Historical Animal Studies* (Berlin: De Gruyter) is forthcoming in 2019.

Lily Díaz is Professor of New Media at Aalto University, Finland. In her work she seeks to combine Anthropology, New Media and Design in order to promote human-oriented understanding and use of digital technology. She is co-editor and co-author of *Ubiquitous Computing, Complexity and Culture* (Routledge, New York 2016). Significant research projects include the Digital Facsimile of the Map of Mexico 1550 project that received First Prize in the Nabi Digital Storytelling International Competition of Intangible Heritage organized by Art Center Nabi in 2004; the Interactive VR Installation of the Pavilion of Finland at the 1900 World Fair in Paris; the VR Installation of Vrouw Maria awarded Special Mention of the Jury in the 2015 Europa Nostra digital cultural heritage competition; and most recently the Interactive Diorama—Rembrandt, 1632 shown at Ars Electronica Festival 2017.

Magda Dragu holds a PhD in Comparative Literature with a specialization in Comparative Arts, from Indiana U Bloomington. She wrote her dissertation on collage and montage in the arts of the early twentieth century (fine arts, literature, music, film, photography). She published articles on various types of intersections between media, such as musicalized fictions, musicalized poetry (Paul Valéry's poem *La Jeune Parque*), fourteenth and fifteenth-century illuminated manuscripts of Dante's *Canto V* from *Divina Commedia, Inferno*. Currently, she is editorial assistant at the Center for the History of Music Theory and Literature (CHMTL), Jacobs School of Music, Indiana U Bloomington.

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Ken Friedman was a member of Fluxus, an international laboratory for experimental art, architecture, design, and music joining in 1966. He was general manager of Something Else Press in the early 1970s and has worked closely with other Fluxus artists and composers such as George Maciunas, Dick Higgins, and Nam June Paik, as well as collaborated with John Cage and Joseph Beuys. He was Professor of Leadership and Strategic Design at the Norwegian School of Management in Oslo, Dean of the Faculty of Design at Swinburne University of Technology in Melbourne and is now Chair Professor of Design Innovation Studies at Tongji University and Editor-in-Chief of She Ji. The Journal of Design, Economics, and Innovation. Friedman's work is represented in major museums and galleries around the world, including the Museum of Modern Art, the Guggenheim Museum in New York, the Tate Modern in London, the Hood Museum of Art at Dartmouth College, and Staatsgalerie Stuttgart.

David Havas graduated from the Department of Film and TV Production at FAMU (Film and TV School of Academy of Performing Arts in Prague) in 2011. In 2010 he received the FAMUFEST Award for extraordinary approach to film production. He is currently working in the National Film Archive as the head of the NFA cinematheque Ponrepo. Since 2015, when he was accepted to doctoral studies at FAMU, he focuses on research focusing on the worldbuilding of audiovisual worlds from the point of view of fan studies.

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Jonas Mirbeth graduated with a M.A. degree in Comparative Literature from Freie Universität Berlin in summer 2017. He has received his certificate as academic editor from Wilhelm Fink Verlag, and from October 2018 onwards he is pursuing his PhD at Humboldt-Universität zu Berlin. Jonas conducts research on trans-Atlantic mid-century discourse on the question of writing with a focus on artists' friendships, their collaborations, and public engagement. He has previously given papers on the works and writings of John Cage at international conferences in Scandinavia and Central Europe, covering topics diverse as the relations of the arts, inter- and transmediality, and narratives confronting the Anthropocene.

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The theory
and history of
intermediality

Ø1 Intermedia, Multimedia and Media

Ken Friedman & Lily Díaz

Recovering a history

T HREE decades ago, artist Dick Higgins (1966b, 1969a: 22) published an artwork titled *Intermedial Object #1* (fig. 1) in the form of a performable score. It resembled the event scores and instruction pieces of Higgins's colleagues in the international laboratory for experimental art, design, and music known as Fluxus. Something Else Press invited those who received the proposal to send photographs and movies of resulting objects. In this playful, poetic, and partially impossible way, Dick Higgins exemplified and published one of the first works of art to bear an explicit designation as "intermedia".

Higgins coined the term intermedia at the end of 1965 to describe art forms that draw on several media, growing into new hybrids. Intermedia works cross the boundaries of recognized media, often fusing the boundaries of art with media that have not previously been considered art forms. Higgins (1966a, 1969a: 11–29, 2001) published a now-legendary essay describing an art form appropriate to artists who feel that there are no boundaries between art and life. Along with many artists and

composers, Higgins felt the time had come to erase the boundaries between art and life. From this, it followed that there could be few boundaries between art forms, perhaps none, and that new forms of art could enter the previously distinct media from the larger life-world.

For several years after Higgins published his essay, the term intermedia was primarily visible in the influential circle of artists, architects, and composers in and around Fluxus. Many artists active in intermedia art forms in the 1960s took part in Fluxus, including the Korean artist Nam June Paik, and the Japanese Ay-O, Takehisa Kosugi, Shigeko Kubota, Yoko Ono, and Mieko Shiomi. Germans Wolf Vostell and Joseph Beuys were active in the field along with the Swede Bengt af Klintberg, Danes Addi Køpcke and Henning Christiansen, and Icelander Dieter Roth. French artists Jean Dupuy, Robert Filliou, and Ben Vautier were key intermedia artists. So were Lithuanian-born Americans George Maciunas and Jonas Mekas, as well as Higgins himself and such Americans as Alison Knowles, Jackson Mac Low, Ken Friedman, Al Hansen, Geoffrey Hendricks, Davi et Hompsom, Ben Patterson, and Emmett Williams.

The interpretations these artists gave to intermedia ran from the simple and primitive to the technically sophisticated. At one end of the spectrum, there were the folklore-based projects of Sweden's Bengt af Klintberg, the actions of Milan Knizak in Czechoslovakia, and the poetry performances of American Emmett Williams. At the other, there were Nam June Paik's dazzling video proposals, the sophisticated book-print-installation works of American Alison Knowles, or Higgins's innovative radio plays and computer-generated art works.

The 1960s and 1970s saw little writing on intermedia. A small number of perceptive books and articles used the term (see, for example, Becker 1977; Berger, Dorfles, Glusberg, Moles, and Kulterman 1980; Frank 1967; Friedman 1972, 1973, Glusberg 1969; Higgins 1967, 1968, 1969a, 1969b; Klintberg 1977; Lester 1966, 1968; Matthaei 1972; Youngblood 1970). Nevertheless, the term did not take hold.

Today, several thousand colleges and universities offer intermedia courses. Many offer full intermedia programs in departments of intermedia studies. Nevertheless, the term multimedia is far better known. The first recorded citation of multimedia was noted over 35 years ago, in 1962. The original meaning of the term was "using, involving, or encompassing several media" (*Merriam-Webster's* 1993: 764). It came to encompass many various kinds of technologies used conjointly in differing combinations. The *Oxford English Dictionary* defines multimedia as "designating or pertaining to a form of artistic, educational, or commercial communication in which more than one medium is used" (OED 2002: unpaged). In contrast, the OED defines intermedia as the plural of

Intermedial Object #1

Construct what matches the following description:

¶1   SIZE
        Horse = 1, Elephant = 10. Object is at 6.

¶2.   SHAPE
        Shoe = 1, Mushroom = 10. Object is at 7.

¶3.   FUNCTION
        Food = 1, Chair = 10. Object is at 6.

¶4.   CRAFTSMANSHIP
        Neat = 1, Profundity = 10. Object is at 3.

¶5.   TASTE
        Lemon = 1, Hardware = 10. Object is at 5.

¶6.   DECORATION
        Color = 1, Electricity = 10. Object is at 6.

¶7.   BRIGHTNESS
        Sky = 1, Mahogany = 10. Object is at 4.

¶8.   PERMANENCE
        Cake = 1, Joy = 10. Object is at 2.

¶9.   IMPACT
        Political = 1, Aesthetic = 10, Humorous = ×10. Object is at 8 and is ×7 up.

New York City
June 10, 1966

Figure 1   Original conceptual formulation of *Intermedia Object* by Dick Higgins, 1965. © Archives Ecart, Genève.

intermedium, and it offers none of the applicable artistic definitions of the term intermedium. The two words have had distinctly different levels of reception. In 2018, a library search tool located 44,740 peer-reviewed articles with the term "intermedia" in the major search fields, but most of these are scientific articles using the term in the technical sense of a chemical or biological medium. In contrast, the search tool located 240,399 articles with the term "multimedia" in the major search fields, and most use the term as it is used here. While there has been a massive growth of usage for the term "intermedia" over the past few years, "multimedia" still predominates. A 2018 Google search yields 9,200,000 hits for the term "intermedia." A Google search yielded 334,000,000 hits for the term "multimedia," a massive difference. There has been significant growth in scholarly publications as well—a Google Scholar search for the term "intermedia" yields 798,000 hits, but a significant number involve the natural sciences and technology. The comparable figures for "multimedia" are again larger, at 4,610,000.

In spite of the fact that the term has yet to be recognized in a general dictionary, the term's influence in creative endeavors can be gauged by its inclusion in the Getty Art & Architecture Thesaurus Online. In this controlled vocabulary used by experts to describe different knowledge domains related to art and architecture the term intermedia is defined as:

"The concept that certain contemporary works merge already known art forms to inaugurate a new type. If the resulting art form gains currency and acquires a name, it becomes a new medium and is no longer intermedia." While a few authors compare and distinguish between the two terms (see for example, Walker 1977: 167–168), intermedia and multimedia are often conflated and confused. This article seeks to retrieve important distinctions embodied in the term intermedia. Equally important, it will point to a history older than the word itself, a history that might open new conceptual territory for media development today.

Four histories of intermedia

Intermedia has many pasts, several definitions and at least two futures. In this essay we seek to address four histories, three directions, and some interesting futures. While the histories of intermedia are multilayered and complex, the history of the word "intermedia" is relatively simple. Higgins used the word to describe the tendency of an increasing number of interesting artists to cross the boundaries of recognized media or to fuse the boundaries of art with media that had not previously been considered art forms. When asked how he happened to create the term "intermedia,"

Higgins once noted that Samuel Taylor Coleridge had used the term over a century and a half before he rediscovered it. Higgins was too modest.

Coleridge used the term "intermedium" once—apparently once only—to refer to a specific issue in the work of Edmund Spenser. Coleridge used the word "intermedium" in "Lecture Three: 'On Spenser'" in a way that resembled Higgins's use of the term "intermedia." Nevertheless, Coleridge used a word different in meaning and in form, referring to a specific point lodged between two kinds of meaning in the use of an art medium. Coleridge's word "intermedium" was a singular term, an adjectival noun. (Friedman 1999: 158; 2018: 13–14) In contrast, Higgins's word "intermedia" refers to *a tendency in the arts that became a range of art forms and a way to approach the arts.*

Higgins said that he might have read the Coleridge essay in his years at Yale or Columbia, taking it in subconsciously. This may be true. Even so, Higgins coined a new word in the term "intermedia," giving it the current form and contemporary meaning it holds to this day (Friedman 1998b).

The first history

This history of intermedia is about the artists who began to develop intermedia projects in the late 1950s and early 1960s. It is a history that is linked with the history of concept art. The early version of concept art was first defined by Henry Flynt in his essays on concept art from the late 1950s through 1961 and published in a seminal essay in *An Anthology* (Flynt 1963: unpaged):

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When using the term concept art, we are not referring to the
better known conceptual art developed in the mid-60s by Joseph
Kosuth. Conceptual art in the way Kosuth has sought to develop
it, is a form of art about art, in which ideas about art as a
form of philosophizing, become the art itself. An example such
art can be appreciated in Kosuth's work, One and Three Chairs
exhibited at the Museum of Modern Art in New York. The work
includes a wood folding chair. To the left is a photograph of
the chair and to the right a dictionary definition of the term
chair.
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As the artist himself explains:

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The art I call conceptual is such because it is based on an
inquiry into the nature of art. … Thus, it is … a working
out, a thinking out, of all the implications of all aspects
of the concept 'art.' … Fundamental to this idea of art is the
understanding of the linguistic nature of all art propositions,
be they past or present, and regardless of the elements used
in their construction.
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The earlier form of concept art was different from the later conceptual art exemplified in Kosuth's work in a significant dimension. Concept art, in Flynt's definition, was an art form of which the *primary element* is ideas, as the primary element of music is sound. In later years, it became clear that Flynt did not intend his definition quite as he stated it. Flynt's idea of concept art was something specific and arcane, an argument with pre-Socratic Greek mathematics. In the meantime, George Maciunas, a co-founder of Fluxus along with Higgins, had seized on the term, applying it to the work of a diverse and interesting group of artists. (Flynt was horrified when Maciunas applied his coinage to these artists and their work. Nevertheless, he did not clarify what he meant by what he wrote until the 1990s.) Higgins, in turn, built on the ideas and practices of these artists to shape his concept of intermedia.

Higgins's (1966a) essay served as a focal point for artists and thinkers developing the ideas and issues he described. Higgins was not alone for around the same time, John Brockman began using the term for the Expanded Cinema festivals he organized at Filmmakers' Cinematheque in New York. While Higgins's essays promulgated the term among artists and scholars, Brockman's work helped bring the term to wider use among filmmakers, surfacing to address the larger public with in a *New York Times* article that appeared shortly after Higgins's essay was published (Lester 1966).

From this perspective, intermedia is an art that lies on the edge of boundaries between forms and media. Intermedia also exist between art forms and non-art forms. It is sometimes difficult to imagine an intermedia form before it is created, but many can be imagined in theory.

In 1967, Ken Friedman built on the idea of Higgins's *Intermedial Object #1* to create a matrix of possible intermedia. This matrix was an elaborated inventory listing media forms. It permitted one to create different kinds of matrices, combinations, or permutations suggesting groupings or configurations of media. In different configurations, Friedman (1967) used it to generate conceptual possibilities for new

intermedia forms. These were often expressed as percentage possibilities, describing, for example, an intermedia form comprised of 10% music, 25% architecture, 12% drawing, 18% shoemaking, 30% painting and 5% smell.

The combinatorial approach developed using matrices made it possible to imagine many kinds of intermedia forms. One artist might combine aspects of typesetting, cooking, pyrotechnics, and farming. Another might embrace baking, sculpture, sewing, and perfumery. Some intermedia were thought experiments that were never realized. Others led to concrete results. A study of the past shows just how astonishing the possibilities might be. For example, the great culinary pageants of the medieval times can be regarded as intermedia that later became an art form in their own right. Thus, the court pageant—with its staged theatrical representations of huge sea battles celebrated in the flooded hall of a palace featuring music and dance in accompaniment, or the masked balls that were also allegorical pilgrim journeys—are now appreciated as historical examples of performance art (Di Felice 1980: 25–27).

Many contemporary art forms arguably emerged from intermedia to become new and distinct media in their own right. These include such media as artist's books, stamp art, mail art and video. And so did social sculpture, concept art and conceptual art, along with concrete poetry and *poesie visive*.

When different forms merge, we see an intermedia form. The success of intermedia is seen in the coherence of mergers (or the convergence) that gives rise to new forms. *The Art and Architecture Thesaurus* (Getty 2018) points out how the most successful intermedia forms eventually cease to be intermedia, developing characteristics of their own to become established media with names, histories, and contexts of their own.

By the late 1960s, the intermedia tradition had begun to develop a literature. Higgins's own Something Else Press published many books and pamphlets in this literature (see: Frank 1983). John Cage (1961, 1969) was also a major contributor to the intermedia literature. The took on life in Europe with intermedia festivals and books (Goetze, Staeck, and Gerling 1969). Around the world, George Maciunas and others produced a major stream of artifacts, multiples, books, and projects under the Fluxus imprint (see Hendricks 1982, 1983a, 1983b, 1989; Milman 1992; Phillpot and Hendricks 1988).

The second history

The second history of intermedia began soon after the publication of Dick Higgins's "Intermedia" essay. This history began to move intermedia

from a small community of experimental artists into a larger frame of art and social life. The first vehicle for this involved the American university system and the first two intermedia courses. The first flowered and vanished. The second went on to become a central forum of diffusion for the intermedia idea.

The first intermedia class began in 1967 when Ken Friedman organized and taught an intermedia course at the San Francisco State University Experimental College. In the fall of 1967, the SFSU Department of Radio, Television, and Film offered the course for credit as the first course specifically titled intermedia ever to be offered in a college or university. While the experimental course system at San Francisco State University offered a marvelous opportunity to work with new ideas and themes, these courses were not part of the regular curriculum. There were few resources and no salary for teaching. Despite its success, Friedman's intermedia course soon vanished.

The real history of intermedia in higher education began at the University of Iowa when the School of Art and Art History brought Hans Breder to its faculty. Breder launched the Iowa intermedia program in 1968, where it flourished under his direction until he retired in 2000. This was the first intermedia program to offer a complete curriculum up to and including the MFA.

Breder's intermedia program was an arena in which to explore what Breder termed "the liminal spaces" between the arts (Breder 1995). The arts, for Breder and his students, included visual art, music, film, dance, theater, and poetry. Later, this concept of a liminal space was expanded into a larger collaboration with the liberal arts, including comparative literature, anthropology, psychology, and communication studies. Breder and his students explored spaces between media approaches that crossed the boundaries between artistic and scholarly practices, hybridizing and exploiting media, genres, and the social and political universes they represented. Over the years since, intermedia has become a rich field of artistic practice and scholarly inquiry, and there are now many degree programs in intermedia and intermedia studies. There are several departments dedicated to intermedia in universities and art schools as well as thousands of intermedia classes in traditional programs. There is also an International Society for Intermedial Studies. Some of these programs are not located in the arts, but in such fields as information science, computer studies, and even the social sciences.

The third history of intermedia

This leads to the third history of intermedia. This history locates intermedia in a social, technological, and historical context, and it reveals some possible reasons to explain why and how intermedia emerged at this time in human history.

In this sense, intermedia is a consequence of post-industrial society and the knowledge economy to which it gave rise. In discussing the morphology of economic growth, Australian economist Colin Clark (1940: 337–373) classified economies as primary, secondary, and tertiary. Primary economies extract wealth from nature, secondary economies transform extracted material through manufacturing, and tertiary economies engage in services. Two more economists undertook pioneering work in the economic and political economics of information, Canadian Harold Innis (1950, 1951) and American Fritz Machlup (1962, 1979). Others— such as Marshall McLuhan (1962, 1964, 1967a, 1967b; also McLuhan and Watson 1970)—contributed to the ideas and theories that would set the information society in focus.

Sociologist Daniel Bell (1976: lxxxv) built on the work of these thinkers to describe three kinds of society. Pre-industrial society extracts resources, industrial society fabricates goods, and post-industrial society processes information. Artist Nam June Paik (1976) contributed to the theory of the media in the post-industrial society. Today, such thinkers such as Manuel Castells (1996a, 1996b, 1996c) and Saskia Sassen (1991, 1994, 1996, 1998) have developed this inquiry further. Ken Friedman examined the relationship between these issues and intermedia in a lengthy series of articles (1998a, 1998c, 1998d, 1998e, 1998f, Friedman 2002, Friedman 2003a, Friedman 2003b, Friedman 2003c, Friedman 2004, Friedman 2005a, Friedman 2005b).

Technological change—and sociocultural reactions to that change— brought about what is now labeled the information society. This term is shorthand for a rich and complex stream of issues that affect working life, culture, and most facets of human interaction and behavior in the developed (or post-industrial) nations.

These influences have had many effects. One effect has been the blurring of the boundaries between different kinds of media. In the telecommunication, information technology, and entertainment industries, the phenomenon of digital convergence is driving this blurring of borders. In the arts, this involves both digital convergence and the human response to a world being shaped by convergent media. In a philosophical sense, the translation of media to digital form shifts the balance between media. This paradoxically leads to a new emphasis on media that cannot take digital

form such as a live chamber concert or a stage performance. We can record these and digitize the recordings, but we cannot digitize the live experience. These multivalent trends become visible in the way that new media—and intermedia—affect old media. They also affect the world in which all mediated human interaction takes place.

The fourth history of intermedia

This is a history that taking a communications perspective seeks to extend back in time and forward into the future. A medium, simply put, is a tool for delivering information. Merriam-Webster's defines a medium as, among other thing,

> …2 : a means of effecting or conveying something: as a (1) : a substance regarded as the means of transmission of a force or effect (2) : a surrounding or enveloping substance …. **b** *pl usu media* (1) : a channel or system of communication, information or entertainment—compare—mass medium (2) : a publication or broadcast that carries advertising (3) : a mode of artistic expression or communication (4) : something (as a magnetic disk) on which information may be stored. … (Merriam-Webster 1993: 738; see also SOED 1993: 1731).

The first media were vehicles for communication. The oldest natural media are voice and language. Written media developed reasonably soon afterward in evolutionary terms. They emerged first as painted symbols on walls, much later as abstract marks on rocks or sticks, later still as alphabets or ideograms on clay tablets and papyrus. The fact that there are many media has always meant the possibility of intermedia. Intermedia has been with us since the dawn of time, with or without the explicit designation. The history of intermedia began with the birth of human communication.

In 1984, A. J. N. Judge undertook a large-scale survey of all possible media for a study on information and understanding (Judge 1984). In 1998, for a European Union project undertaken in collaboration with Judge, Friedman (1998c, 1998f) built on the earlier media matrices to extend the survey with a research request sent to over 20,000 scholars, artists, critics, and theorists around the world. The final inventory was a list of roughly 1,600 possible communications media from the abacus and abbreviations to the zarzuela and 'zines.

The inventory involves an approach exploring the kinds of possibilities that Herbert Blumer labels sensitizing concepts, first steps that open an

idea for exploration (Blumer 1969: 2–21, 140–150; see also Baugh 1990; van den Hoonard 1997). This is a heuristic procedure, and the inventory was gathered without regard to possible challenges to the ontological and epistemological status of any specific proposed medium. Rather, all proposals were gathered for later development and consideration.

This method represents a quasi-systematic application of Lenat's (1983: 352–354) approach to heuristics, in which heuristic methods enable the development of new domains of knowledge. Within these domains, new heuristics are needed together with new representations. While Lenat's work addresses the problem of knowledge acquisition in information systems, Friedman's approach was a generative process. It is admittedly naive, and the inventory raised problems that could not be readily resolved other than by positing definitions.

Nevertheless, the inventory and the matrices that flow from it in a generative process raised useful and challenging issues. These concern the nature, status, and possibilities of each medium—and, in some cases, the question of how it may function as a medium. These issues involve the past, present, and future of intermedia. The history of the past has yet to be explored in full. This fourth history is fascinating, and it leads to a future history that has yet to be imagined. It is a history can be explored by examining three directions that intermedia may take.

Three directions for intermedia

The intermedia concept was visible in three artistic directions of the late 1950s and early 1960s. The first was a technical direction typified by multi-channel, multi-modal presentations that rarely seemed to take coherent shape. The second was a simple philosophical direction typified by event scores and concept art. The third was a fuzzy, boisterous direction typified by happenings and later traditions in performance art.

The first direction emphasized engagement with technology. This was an era when artists working with media—including multimedia—often presented separate and disparate art forms at the same time. This was often a fruitless approach.

In contrast, some artists explored the boundaries of technology and art to examine the larger social meaning of information technology in a post-industrial society. These artists often made good use of intermedia theory. In a powerful sense, these artists began to explore the generally unrealized dimensions of digital computer code and information flows. These would begin to render all media fluid when digital control began to break down boundaries between separate forms of input, transmission, and output.

This was visible in the electronic music of John Cage and Richard Maxfield, or the early television experiments of Nam June Paik and Wolf Vostell. It blossomed in the art and technology programs of the 1960s, elegantly exemplified by artists such as Jean Dupuy or Newton and Helen Harrison, and in the video art of the 1970s.

The second direction emphasized simplicity. This was a tradition of conceptual exploration. Often anchored in Zen Buddhism or philosophy, this stream was typified by the event structures of George Brecht, the early concept art of Henry Flynt, and the neo-haiku theater of Mieko Shiomi and Yoko Ono. In the 1960s, it entered a second phase with George Maciunas's publishing program for Fluxus, the radical reductive films of Paul Sharits and the expanded use of events and scores for objects, installations, and performances by Dick Higgins, Ben Vautier, Robert Watts, Milan Knizak, Robert Filliou, Ken Friedman, and others.

The third direction emerged from the ambiguous and often-boisterous tradition of happenings pioneered by Allan Kaprow, Al Hansen, Claes Oldenburg, Milan Knizak, and others, including Dick Higgins and Wolf Vostell among them.

These streams were never as separate as some maintained, and they never constituted the single forum that others described. Rather, in overlapping and forming each other, they led to the flowering of new art forms that typified the 1960s and 1970s. Conceptual art, artists books, performance art, installation, video, and many other artistic media and traditions emerged from them.

While it remained possible to separate art forms for scholarship, historical reflection, or theoretical distinction, Higgins's vision of intermedia was that our time often calls for art forms that draw on the roots of several media, growing into new hybrids.

The conceptual importance of intermedia is its profound yet often paradoxical relationship to new media. Intermedia is important because it emphasizes conceptual clarity and categorical ambiguity. The intermedia concept is powerful because it stretches across the boundaries of all media, many of them old. Intermedia provide impetus to new media while offering a balance to the overly technological bent that new media can sometimes engender.

Intermedia links many forms of media conceptually and require us to consider them in terms of human effects. This creates a sympathetic yet challenging position from which to interrogate and conceptualize new media. It strengthens the development of new media by encouraging us to think in large cultural terms. Intermedia are not an art of technical applications, but an art of subtle ideas.

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From simple conceptual ventures that enter the liminal space between ancient, classical media to the most sophisticated techno-social hybrids, the concept of intermedia opens significant territories. Even so, nearly any intermedia space that we can enter lies in one of the three directions that such artists as Dick Higgins, John Cage, George Brecht, or Jean Dupuy first explored in the 1960s.

Intermedia, multimedia, new media

An important characteristic that distinguishes intermedia from multimedia is the melding of aspects of different media into one form. In addition to recovering the concept of intermedia, it may also be useful to examine the earliest concepts of multimedia. These were often closer to Higgins's idea of intermedia than many of the multimedia concepts that have held sway in intervening years. Examining these issues will bring us forward in time to the new, emergent possibilities of multimedia in a world of digital convergence.

Much multimedia work has focused on using computer technology to deliver combinations of images and sound. The earlier concept was more useful, pointing to multimedia as a variety of tools for delivering information, education, and entertainment in useful and useable forms.

The early idea of multimedia were flexible and involved many kinds of technology from the simplest to the most advanced (for examples, see: Albright 1972; Block 1974; Bory 1968; Bush 1945; Cage 1969; Crane and Stofflett 1984; Di Felice 1980; Friedman and Gugelberger 1976; Glusberg 1971; Judge 1984; Kahn 1999; Masters and Houston 1968; Packer and Jordan 2001; Paik 1964; Paik and Moffett 1995; Porter 1971; Ravicz 1974; Theall 1992; Tofts and McKeich 1998; Tofts 1999; Tofts, Jonson, and Cavallaro 2003; Zurbrugg, 1993, 2004).

One striking feature of early multimedia experiments was a rich variety of hardware and software. The central issue was engaging a variety of media to address any number of senses. Multimedia ventures included: sound technology with phonograph, telephone, tape recorder, radio, public announcement systems, specially created sound devices, experimental instruments for contemporary music and standard musical instruments; visual technology with drawing, printing, printmaking, lithography, silk-screen, photography, silent motion pictures, and video along with archaic techniques ranging from printing blocks and stones to modern equivalents such as rubber stamps and postage stamps; language, poetry, and narrative through writing, print, and speech as well as early computer formats on paper or screen.

Other media engaged other senses. Projects involved taste in the form of foods and food-like inventions. Artists worked with smell using perfumes, aromatic materials, and olfactory broadcasts using scented fogs and sprays. Massage, tactile sculpture, personal-surround environments, full-body environments, tactile displays, furniture, clothing, and other haptic devices engaged the sense of touch. Active environments that moved around the participant and passive environments that required the participant to move through the environment as well as dance and choreography engaged the sense of motion and body-awareness.

The era was rich in many kinds of experiments. These can be seen in Fluxus (Becker and Vostell 1968; Brecht and Filliou 1967; Corner, Knowles, Patterson, and Schmit 1965; Hendricks 1982, 1983a, 1983b, 1989; Klintberg 1966; Milman 1992; Phillpot and Hendricks 1988; Spoerri 1966), Experiments in Art and Technology (E.A.T) (Klüver 1980, 1983; Tuchman 1971), and such individual artists as Bern Porter (1971).

In addition, many established media were also multimedia forms that embraced several senses at once, including motion pictures, opera, video, television broadcast, and more. Until recently, however, the term multimedia has been almost exclusively associated with advanced information technology systems. Brockhampton (1994: 363) defines multimedia as a "computer system that combines audio and video components to create an interactive application that uses text, sound and graphics (still, animated and video sequences). For example, a multimedia database of musical instruments may allow a user not only to search and retrieve text, about a particular instrument but also to see pictures of it and hear it play a piece of music."

Even though this view of multimedia is widespread, the original definition is far more powerful. It is more powerful because it emphasizes judgment and skill rather than technology; it is more flexible; and it serves users in appropriate ways rather than addressing every problem with expensive systems and ever-increasing support costs. This is a powerful advantage in an era of shrinking budgets. The power of multimedia is not determined by hardware. It is determined by the ability to use different applications and effects in appropriate forms for specific purposes.

Defining multimedia as "using, involving, or encompassing several media" (Merriam-Webster's 1993: 764) involves social, scientific, and cultural issues as much as it involves technology. Our analysis will argue for multiple interpretations of multimedia and its uses, an interpretation that approaches the border to Higgins's concept of intermedia. Both approaches enlivened the early, robust art and communication experiments of the late 1950s and the early 1960s.

Multimedia then and now

Multimedia has existed for centuries. The concept of multimedia is an intellectual construct distinct from the specific focus on technology characterizing discussions of multimedia today. There are many more kinds of multimedia technology than DVD entertainment programs, game simulations, or infotainment sites on the World Wide Web. Some of these technologies have existed for centuries.

Consider, for example, drama and pageant. Drama as we known it today goes back to ancient Greece. Pageantry has an even more unusual history. In the Middle Ages and the Renaissance, pageantry moved beyond court ceremonial and church ritual to become an event that surrounded, engaged, and embraced the audience with appeals to every sense imaginable (Di Felice 1980, 1984). The emblemata of the Middle Ages were another example of a multimedium. Emblemata were printed images reproduced with wise sayings or religious quotes. They were generally made with woodcuts. Emblemata brought images and text to an illiterate population. They permitted viewers to see a visual representation of symbolic content along with instructive or religious text presented in memorable verse form. This helped the illiterate audience to grasp and remember a text that few could read (Alciati 2004 [1531], Friedman and Gugelberger 1976). Multimedia have always involved enriched and multiplied uses of single media.

A medium, simply put, is a tool for delivering information. Merriam-Webster's defines a medium as, among other things,

```
…2: a means of effecting or conveying something: as a (1): a
substance regarded as the means of transmission of a force or
effect (2): a surrounding or enveloping substance …. b pl usu
media (1): a channel or system of communication, information
or entertainment—compare—mass medium (2): a publication or
broadcast that carries advertising (3): a mode of artistic
expression or communication (4): something (as a magnetic
disk) on which information may be stored. … (Merriam-Webster's
1996: 772).
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The first media were vehicles of communication. The oldest natural media are voice and language. Written media developed soon afterward in evolutionary terms. They emerged first as painted symbols on walls, much later as abstract marks on rocks or sticks, later still as alphabets or ideograms on clay tablets and papyrus. Pictorial media are the oldest media in common use. Paintings, drawings, lithographs, maps, and the like

survive still. Pictorial media today are primarily used for entertainment, along with communication and information. They often add entertainment value to educational or informative products. Text media such as letters or manuscripts remain the oldest standard medium in active use for communication, education, and information. Books and newspapers are the next oldest in active use for communication and education while entertainment and infotainment have, for most people, been taken over by pictorial and pictorial-sonic media such as film, television, and video. Information from news to political campaigns is now delivered as infotainment for vast audiences who read little and watch much. It also serves illiterate audiences who do not read at all.

The most widely used media of the twentieth century are vocal and visual. The telegraph is now a highly specialized but little used medium. The telephone is perhaps the most used public medium. Both were developed in the nineteenth century. The far more recent telefax grew out of these. Photography was also born in the nineteenth century. Motion pictures came only a few decades later when mechanical ingenuity applied to photography made film possible. Television and motion pictures are the contemporary mass media of infotainment, along with their descendants, video, DVD, and internet streaming. Recent technological developments have made it so that all these media are converging into ubiquitous mobile telephony units, such as the iPhone capable of displaying a range of effects that most people think of as multimedia.

While this view of multimedia is correct as far as it goes, it is mistaken in broad principle. Multimedia remain what they have always been. Multimedia are any of the dozens of possible media that can be combined in hundreds of ways to communicate, to teach, to inform, and to entertain. The idea of multimedia as a relatively standardized combination of special effects used primarily by producers of games and entertainment constrains the larger possibilities of the field to a flat, one-dimensional understanding. This negates the potential power of the multimedia concept. In practical terms, thinking of multimedia in this one-dimensional way limits us to the kinds of multimedia defined by the designers of games and infotainment.

This misunderstanding hampers the production of multimedia for a host of other possibilities. The demand for special effects occasioned by this misunderstanding drives budget costs up and use value down on many multimedia projects that can be realized more effectively with simple techniques than with complicated technologies. The failure to understand the genuine character and potential of the multimedia era is a failure to realize the fullest and best potential of an exciting tool.

Understanding multimedia requires looking beyond special effects enabled by new technology. Marshall McLuhan's famous probes into the

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meaning of media explored dozens of different media and their meaning (McLuhan 1962, 1964; 1967; McLuhan and Watson 1970). For McLuhan, a "medium—while it may be a new technology—is any extension of our bodies, minds or beings" (Gordon 1997: 43). This emphasis was made clear in the subtitle of McLuhan's (1964) most famous book, *Understanding Media: the Extensions of Man.*

This distinguishes the useful concept of multimedia in a unified or holistic program from the notion of multimedia as multiple media performed simultaneously. This concept was summed up in Higgins's term, intermedia. In Higgins's concept, the term intermedia referred to art forms that draw on the roots of several media, growing into new hybrids. Like film or opera, intermedia can be seen whenever several individual media grow into forms that are effective and convincing media in their own right. This is also a helpful definition for multimedia.

The qualities that link the intermedia concept to one conception of multimedia separate the technological approach to multimedia from a deeper, and more philosophical approach.

By the middle of the 1960s, the term 'multimedia' was being applied to any form of artistic experiment that involved several media used at the same time. The stereotypical conception of multimedia was the kind of activity labeled a "multimedia happening" that one could see in art schools and museums around the world. It is represented by motion picture clichés of the 1960s as a kind of post-beatnik séance with someone reading poetry while musicians play drums and saxophones over the rumbling of audiovisual equipment as dancers move around sculptured and random objects against a background of film projections or a light show.

This image was reinforced in the public imagination by the light shows that accompanied rock concerts at such venues as the Fillmore Auditorium or the Avalon Ballroom in San Francisco or Timothy Leary's psychedelic evenings in New York. The comparison is unfair, since these light shows were, in fact, sophisticated multimedia presentations created by teams of artists who worked carefully to achieve artistic effects far superior to the incomprehensible collation of sounds and images seen in the stereotyped representations of multimedia presentations sometimes depicted in television and film. The era was typified by both kinds of multimedia events.

Nevertheless, there is a distinction between multimedia and intermedia. The generation and birth of new art forms does not always happen with multimedia. In multimedia, by definition, many things happen at once. George Maciunas's expanded arts charts and diagrams explored these issues in visual form (Hendricks 1982: 270–271, 1989: 329–332, 350; Schmidt-Burkhardt 2003).

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In Maciunas's terms, most multimedia presentations were "neo-Baroque." They remain separated. In contrast, intermedia tended toward the unified sensibility that Maciunas labeled "neo-haiku." Even when they emerge from several forms, they flow into one stream. Many kinds of action and many things taking place at the same time typify multimedia pieces. This often involved scattered and confused collations that pull the spectator in different directions. Intermedia tend to involve focus and clarity of thought.

This distinction is captured in the difference between happenings and events. Happenings were largely multimedia forms, even though many happenings were more sophisticated than most multimedia events. Happenings generally involved lots of action on an explosive field. Low in coherence and intentional value, the happening did not last long as a medium for art, performance, or theater. Nevertheless, it the influence of the happening continues to echo in these fields, and in such related fields as music and television.

While Fluxus and happenings were often linked in histories, exhibitions, and some theories, they related to each other in dialectic of opposing tendencies. They were twinned polarities, two faces of the same coin. It is no coincidence that half the happening artists became painters and sculptors, Claes Oldenburg, for example, or Jim Dine, and Red Grooms. The other half was active in Fluxus. These were such artists as Al Hansen, Dick Higgins, Wolf Vostell, and Milan Knizak.

Allan Kaprow's work offers an interesting point of reflection. Kaprow moved from art history and painting into happenings. Unlike the others, he neither retreated to painting nor worked in the Fluxus context. Instead, his work became increasingly intimate in its focus, taking on the psychological tone and event-oriented edge characteristic of much Fluxus work.

Al Hansen was another unique figure (Hansen 1965; Hoffmann 1996). Of all the early 'happeners', only Hansen maintained the original happenings ethos. Although he was closely allied to the Fluxus artists, his rollicking, chaotic work typified the neo-Baroque tone of the earliest happenings.

Considering multimedia

From our perspective, considering multimedia involves three separate and related challenges. First is the challenge of using media—any media and all kinds of media—in combination to deliver information, communication, education, or entertainment. Second is the challenge of using appropriate

techniques and technology to translate, store, transmit, and deliver those media. Third is the challenge of transcending the stereotyped usage of the term 'multimedia', with all that it has come to imply.

The recent usage of the term multimedia has become common for an understandable reason. That reason is the location of the multimedia phenomenon in the hands of any number of high technology companies and organizations who use their ability to combine computers, DVD, Internet sites or other related technologies in the second sense of the word to deliver multimedia content as we have defined it in the first sense of the word. Before considering the future of multimedia, it is worth examining a few historical examples of convincing multimedia.

Multimedia began in the earliest stages of prehistory. The difference between describing today's technology-driven forms of multimedia and early forms is that they generally have not been described under the rubric of multimedia. The symbolic value of pageantry, the use of symbolism and drama to heighten the effect of a message has always had a role in information management. Because of this well-known principle, the ability of today's technology to dress a message in multiple forms and enhance delivery through several channels has affected the growth of multimedia.

Shannon and Weaver's (1949) mathematical formula established a well understood theory of information and the role of media in communicating information from one point to another. Earlier models of multimedia were less precise, but the very ambiguity of earlier multimedia examples gave them a tactile richness that enhanced communication through multiple channels. In many cases, this has been helpful. Dramatizing action, embellishing words with images, rendering images interactive all have their purpose.

Opera is an example of an early multimedium. Stage drama is another. Today, a good example of a common multimedia application is the realization of drama in film. A perfect example of this is Kenneth Branagh's (1989) rendition of Shakespeare's [1599, 1623] (1961, 1991) classic *Henry V*. This also demonstrates the evolution of one multimedia artwork through four centuries.

The first performance of *Henry V* took place in Shakespeare's London four centuries ago. There was no way in those days to convincingly render the vast scenes that the playwright set before his audience. Shakespeare's prologue to *Henry V* describes the problem of rendering the action of the play on stage:

```
… but pardon, gentles all,

The flat unraised spirits that hath dar'd
On this unworthy scaffold to bring forth
So great an object: can this cockpit hold
The vasty fields of France? Or may we cram
Within this wooden O the very casques
That did affright the air at Agincourt?
```
(*Henry V*, Prologue: 8–14)

Shakespeare's technology did not permit the proper rendition of battle scenes. Stage battles were limited to duels among a few players or the "brawl ridiculous" (*Henry V*, IV: Chorus, 51) that failed to capture the reality of the battlefield.

Plays rely on the imagination for envisioning action much as books or poetry do. Shakespeare appealed to his audience, inviting them to fill in missing scenes and embellish sketched action with their own "imaginary forces" (*Henry V*, Prologue: 18). "Work, work your thoughts," the chorus admonishes viewers, asking them to "eke out our performance with your mind" (*Henry V*, III: Chorus, 25, 35). Theater audiences from Shakespeare's day to our own have been obliged to grip each "story; in little room confining mighty men, mangling by starts the full course of their glory" (*Henry V*, V, II: Chorus: 2–4).

In realizing the grand design of Shakespeare's historical drama, Branagh's film was closer to Shakespeare's vision than a stage-bound realization. The director captured the reality of late medieval battle. In doing so, he elevated a magnificent play into a grand multimedia performance using drama, action, choreography, geography, and music to portray an historical event in fruitful rendition.

Audiences are now so used to film as an established medium that they do not conceive it as a multimedia form. This is as it should be. When multimedia is truly effective, the viewer should not so much be aware of the media as be aware of the spectacle revealed. At some point, the elements in a successful film may flow together so smoothly that what begins on the technical scale as multimedia, merges with the spectator's horizons into a form of intermedia. Abel Gance's use of multiple panorama formats (e.g. polyvision) in his biopic Napoleon is an example of this (Hutchinson).

McLuhan's observation that "the medium is the message" helps to describe the unconscious perception of media and the failure to consciously perceive them. An effective medium is so much an extension of the witness that the medium recedes into the background while content

Figure 2   Three roles for one *Henry V*. Kenneth Branagh directs and acts in his screenplay's film adaptation of the Battle of Agincourt in Shakespeare's drama. © Getty Images.

is the foreground. McLuhan argued that the way we perceive, the way we communicate, and the way we interact with our communication media affects the way we think. This mirrors similar views in the social psychology of George Herbert Mead and in Wilhelm Dilthey's hermeneutics of the life world.

This vision of media proposes that the way human beings give voice to the world through media shape perception, paralleling the well-known Sapir-Whorf hypothesis that language affects the way human beings perceive the world (Sapir 1973; Whorf 1969).

When perception is embedded in the flow of daily experience, the ways in which we perceive are not subject to conscious inspection. To see how we see, we must step back from the subject and consider the act of seeing. To hear how we speak, we must step back from what we say and attend to the act of speaking. In other words, we need to become more cognizant of how embodiment colors our knowledge of being in the world.

Our use of multimedia is so prevalent that most of us fail to realize that we are involved in producing and perceiving multimedia. Only the latest and best-advertised multimedia projects capture our attention. As a result, the other forms of multimedia, including the simplest and most effective, disappear from view as multimedia forms precisely because they are simple, effective, and so widely used that their nature as multimedia becomes invisible.

Toward an archeology of intermedia, multimedia, and media

Recovering the histories and multiple forms of intermedia and multimedia serves an important purpose in developing richer approaches to new media in the future. This work is also being undertaken in fields such as economic history, studies in science and technology, communication theory, and other fields. This is a history that has yet to be written is from an interdisciplinary history of intermedia and multimedia crossing the boundaries of art, technology, and communication, linking them for deeper understanding. The past half-century has seen several important studies on media written by scholars in these fields. Of particular relevance are media archaeological approaches combine excavation metaphors with a Foucaldian non-linear viewpoint of history (See Zielinski 2006 regarding the exploration of how unique practices illuminate discourse, Huhtamo and Parikka different applications of an archeological approach to the history of media technologies, 2011, Parikka, 2012 for the symbiosis between the natural and the artificial). Stuedahl (2001: 1) has also captured

the concept nicely where she discusses "constructing new communication forms with resources from the past."

Continued research and exhibitions of works by already mentioned Fluxus and Experiments in Art and Technology (E.A.T.) participants are excellent opportunities to deepen our knowledge that can not only yield new understanding regarding shifts in epistemic frontiers but also illuminate truly revolutionary art and science collaborations. For example, already in 1968 Jean Dupuy's artwork *Cone Pyramid* (*Heart Beats Dust*) registers concern regarding self-quantification and embodiment. The work was originally shown at The Machine as Seen at the End of the Mechanical Age, Museum of Modern Art, New York, NY, November 27, 1968—August 24, 1969.

Variations of the installation depict red dust matter vibrating to the sound of human heartbeats shown in Figure 3. The number of observers interacting with the work through a stethoscope varies from one to six as is shown in Figure 4.

As we argue in this essay, such a comprehensive study of intermedia and multimedia would require four specific research streams. The first is a history of intermedia and multimedia in the arts and communication from prehistory to modern times. The second is a history of the theories and conceptual development of intermedia and multimedia in the twentieth century. The third is a taxonomy and description of communication and art media, including dead and obsolete media. The fourth is a conceptual research program examining the possible future of new media and new uses of intermedia and multimedia.

Fragmented and partial efforts in all these fields exist already. A systematic review and summary of current literature would provide a solid foundation for future work. This would involve the first three streams, and it would make a serious contribution toward realizing them. The fourth program is more complex, linking applied research and development to theory. This program will require the involvement of new emerging disciplines and techniques as well as scholars and practitioners working in parallel with the other three programs. Here Díaz (1997: 287) has proposed the Digital Archaeology as a new form of creative practice that uses virtual environments and technology as instruments that can afford us "new ways of understanding research data" in context.

Managing knowledge, transmitting information, and creating art depend in great part on the tools and media we use. This program begins with the simple but challenging premise that the concepts of intermedia and multimedia have been lost or vastly diminished since their inception in the early 1960s. It follows from this premise that a reconsidering
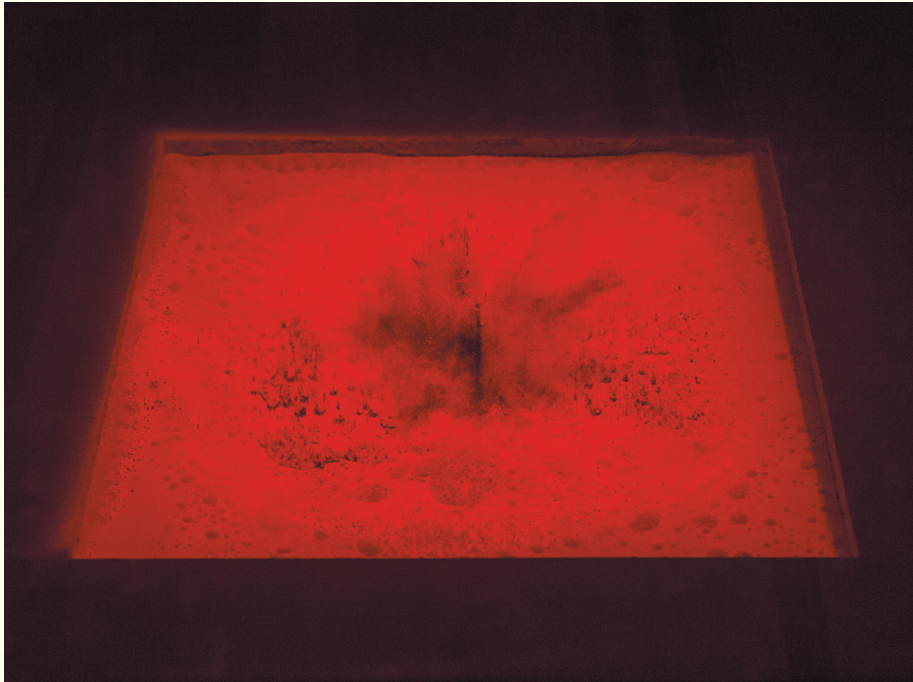
Figure 3   Detail of Jean Dupuy's 1968 *Cone Pyramid* (*Heart Beats Dust*).

Figure 4   *Chorus for Six Hearts* (*Chœur pour six cœurs*), Jean Dupuy, 1969.

intermedia and multimedia together will lead to new concepts, developments, and practical outcomes.

The concept of intermedia has never been fully understood. The concept of multimedia has been reduced from a broad, rich framework for integrated communication to a series of sometimes-fruitless technical innovations. By reclaiming the multiple methods of communication and demonstrating the ways in which well-understood and even primitive communication tools can be allied with contemporary technologies, we can open avenues toward a dense, multi-channeled communication practice.

Internet, World Wide Web, multimedia, and applications such as intranet technology affect the way we live and work. Most of these conceptions involve a limited variety of tools associated with high technology. A broader framework must consider the hundreds of intersections of old technologies and new. A robust research program involves considering intermedia and multimedia in terms of the widest possible variety of tools for delivering information, education, and entertainment in useful and useable forms.

Dick Higgins's 1966 *Intermedial Object #1* has continued to surface in different incarnations over the years. It was last seen in Geneva in a 1997 exhibition (Bovier and Cherix 1997: 65–66). The picture of Higgins's original score somehow seems more solid and stable than the humble and somewhat ambiguous object pictured on the subsequent page. The object was built in the early 1970s. The Geneva realization of *Intermedial Object #1* marries the solid craftsmanship of home workshop carpentry with the good-natured zeal of early installation art. The image has the delightful appearance of a child's toy lantern, 7 points up on the x-axis of Higgins's humor scale.

The archeology of this object offers an opening to an unexplored continent. The history of intermedia and multimedia are not simply valuable because they disclose an intriguing and little-known past. Retrieving this history also opens a renewed vision of the open future.

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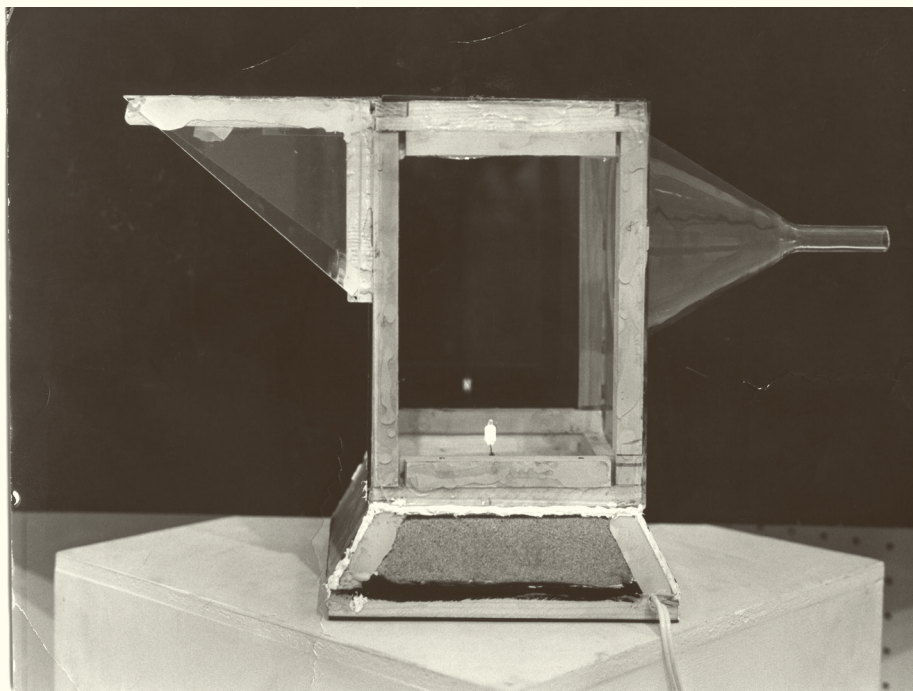
Figure 5 *Intermedial Object #1* by Dick Higgins. © Archives Ecart, Genève.

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