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INTRODUCTION

In this month's LEA, our central feature is an article co-authored by Motti Benari of Israel along with five colleagues in which the authors describe their fascinating project, CULTOS, which is based on the intertextual thread, a "new cultural unit."

In the article, they present ways of expanding the use of hypertextual and intertextual methods, which can aid in a number of fields, including academic research.

In Leonardo Reviews, we present reviews of the books *Neo-Baroque Aesthetics and Contemporary Entertainment* and *Ghouls, Gimmicks, and Gold: Horror Films and the American Movie Business, 1953-1968*, an unlikely but revealing subject for academic critique.

In our news section, we bring you up to date, as always, on the latest developments in the Leonardo/ISAST community, including initiatives to pursue experimental publishing projects, publication of abstracts of academic theses, and a news item that illustrates the urgent need for artists to be aware of potential legal infringement on their civil liberties. All in one issue ...

FEATURES

THE INTERTEXTUAL THREAD: A NEW CULTURAL UNIT IN HYPERTEXT

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ABSTRACT

This article presents the "intertextual thread" as a new cultural unit, focusing on the way in which it may become a flexible, standard hypertextual format for creating and organizing multi-textual webs. The intertextual thread is a structure that incorporates texts together with rich data on the relations between the texts. The future use of threads may be valuable for many purposes, such as academic research, education and cultural preservation.

1. INTRODUCTION

1.1 PREFACE

In recent years we have been witnessing a remarkable ongoing technological development; at the same time, the coming of age of cultural studies has encouraged the crossing of traditional borders between disciplines and fields of research (e.g. "high" and "low" culture, cross-cultural studies). These developments have been instrumental to the flourishing of hypertextuality [1], which opens new and exciting possibilities for knowledge organization and processing, especially in the field of intertextuality. So far, however, hypertexts have been rather disappointing in this regard, allowing mostly for an unstructured and (potentially) endless navigation among data units. We might have expected more efficient authoring tools (by means of software) and some standardized structures that would exploit the full technological potential in the field of inter- and hyper-textuality. This, we believe, is one of the major achievements of our project. We have developed a theoretical data-model and the proper tools to offer a new cultural unit that we call an "intertextual thread." This unit is a hypertextual structure that incorporates texts (imported by the author of the thread as digitized multi-media files), together with rich data on the relations between the texts (selected and imported by the author of the thread from a graded data-model). This article focuses on these new cultural units and the way in which they may become a flexible standard format for creating and organizing multi-textual webs.

1.2 HYPERTEXT AND INTERTEXT

In order to provide a preliminary notion of what we mean by the concept of "intertextuality," let us consider a concrete example. In spring 2004, the Metropolitan museum in New York held a comprehensive exhibition dedicated to the influence of Spanish paintings on French and American artists. In the exhibition's catalogue [2], among the vast range of paintings, two specimens - one by Diego Velázquez (*The Jester Pablo de Valladolid*, 1632-35) and one by Édouard Manet (*The Tragic Actor*, or *Rouvière as Hamlet*, 1865-66) were shown next to each other in order to demonstrate the great influence Velázquez's paintings had over Manet.

There are many obvious formal similarities between the two paintings, for example the overall composition, spatial organization, use of colors and lightening. There are also important similarities of content between them: each of the two paintings depicts a historical figure and in both cases, that figure is acting, representing a fictional character. Also, both paintings challenge pictorial conventions of their time. Looking

at the paintings also reveals, against the background of these similarities, significant points of difference between them, such as the hand gestures of the depicted figures, their facial expressions and their relations to the viewer. The comparison between the two paintings thus reveals a great variety of formal and thematic relations, which can relate to the whole painting or just to a segment of it.

Aside from these multiple relations between the paintings, each stands in many relations to other paintings (including, of course, those that belong to the same artist's oeuvre), artworks from other media, reality materials (such as the historical identity of the depicted figures or facts that relate to the artist's biography), cultural discourses and conventions, interpretive discussions, etc. [3] To be more specific, *The Tragic Actor* relates, for instance, directly to Shakespeare's *Hamlet* and thereby also indirectly to other artworks relating to the play, such as Goethe's *Wilhelm Meister* (1796) or pre-Raphaelite paintings depicting Ophelia (more or less contemporaneous with Manet's painting). Today, a viewer can also connect the painting with later artworks, such as cinematic versions of *Hamlet* (Laurence Olivier's *Hamlet*, 1948; Kenneth Branagh's *Hamlet*, 1996), or modern "rewritings" of it (like Tom Stoppard's *Rosencrantz and Guildenstern Are Dead*, 1966). Similarly, Velázquez's painting relates to a vast range of paintings and other artworks referring to people of the royal court: clowns, midgets, etc.

Is it possible to formulate such an intricacy of relations in a way that will demonstrate its multi-level complexity and, if so, how? Moreover, how can we express the uniqueness of each relation, while presenting simultaneously the network of all relations? And can this network of relations preserve its dynamic nature, while new connections are constantly being created and re-created?

The answer to these questions, we believe, lies in the structure of the intertextual thread with its multi-layered organization, which enables both the presentation of a global layout and a thorough study of each of its components. Thus, a relation in an intertextual thread is not a simple one-dimensional link, as is the rule in HTML formations, but a loaded data body. The main subject of our article is a detailed description of the intertextual thread and a discussion of its relative merits, but before embarking upon this topic, we would like to try and place our project in the broader context of the hypertext idea as envisioned in the second half of the twentieth century.

1.3 THE IDEA OF HYPERTEXT

In 1945 Vannevar Bush, who is widely acknowledged as the main precursor of the hypertext, proposed a system he called Memex, which was meant to supply a solution for the problem of the explosion of information. He aimed for the possibility of documenting and preserving the whole investigative process, and the work with various bibliographic materials involved in it. Memex - the electro-magnetic device envisioned by Bush - was supposed to enable the researcher to "save" his bibliography in the interlinked form in a way that imitated, in his opinion, the functioning of the human mind: as soon as one of the interlinked documents is summoned unto the surface, the whole chain (composed of linked documents) is summoned along with it.

Bush's disciples continued to develop systems capable of maintaining large multiply-authored investigative nets, where no document can appear in an autonomous form, disconnected from its textual environment. The most famous among those was Theodor Nelson's Xanadu (which was never completed), described as follows:

"The Xanadu system - more properly, the Xanadu network storage engine - is a file-server program for linked compound documents. It is designed to run on a network and manage to update and delivery of document fragments on demand (not just full documents) from anywhere on the network. . . . With respect to any document or fragment, a user may request all other documents linked *from* it, all other documents linking to it, and all other documents presently containing the portions of it" [4] .

A similar vision was expressed, 17 years later, by George P. Landow and Paul Delany, with regard to the hypertext's impact on literary theory:

"A comprehensive hypermedia environment for literary study would be based on scholars' workstations with appropriate communications and peripherals. The textual foundation (or 'textbase') of this environment would be a large corpus of literary texts in machine-readable form. Access to this corpus would be controlled by a customized hypermedia program that would both operate on the corpus directly, and control a variety of other resources" [5] .

In other words, the original vision was of an investigative environment, composed of sophisticatedly interconnected documents and capable of an unlimited expansion by multiple authors. Adding a document to such a web means a compulsory interpolation of that document into a highly complex system of relations. As a matter of fact, most of the presumed pedagogical implications of hypertext are based on the Nelson-Landow model of the investigative web (see for example Landow's Victorian Web [<http://www.victorianweb.org>], which may be considered a "small" prototype of such a web).

The Internet may seem a complete fulfillment of the Nelson-Landow vision, but in fact it often serves only as an additional medium for (self-)publishing traditionally formatted research documents. As a result, the Internet is overloaded with documents published in the most traditional ways and therefore functions mainly as a huge database, rather than as a real hypertextual web. In the domain of literary studies, at least, we were unable to find any web that could serve as a good example of the realization of the Nelson-Landow vision (projects like online encyclopedia Wikipedia [http://en.wikipedia.org/wiki/Main_Page] may be considered as its closest realization to date).

Moreover, while the original vision, as described above, was preoccupied with the structure of hypertextual nets composed of interlinked documents, there was not enough (if any) attention paid to the structure of the link itself. Generally, links were conceptualized as mere "vehicles," used for "transportation" from one document (or a segment of it) to another [6] . Literary scholars, who use electronic hypertext for presenting and articulating intertextuality, should have been more unsatisfied than anyone else with the limitations of the existing hypertextual format. For an illustration of the problems

involved, let us quote from an article by David S. Miall, in which the author criticizes certain ways of hypertext theorizing:

"Landow's interlinking model, moreover, can address only the most superficial relations between texts. If Milton echoes Virgil in a line of **Paradise Lost**, the meaning of that connection cannot be captured by clicking on a link to the relevant passage in the **Aeneid**. . . . A hypertext system is a valuable tool for alerting the student of Milton to the kind of work that needs to be done; but none of the more significant aspects of Milton's text, or any literary text, lies within the representational capacity of hypertext" [7].

We claim that the CULTOS software successfully solves the problems of both the lack of textual polylogue and the one-dimensionality of links, and in so doing may constitute an excellent basis for the intertextual web, which would closely resemble (or even improve in certain respects) the Nelson-Landow vision.

2. NEW TOOLS FOR A NEW NOTION

2.1 THE CULTOS PROJECT

The CULTOS (Cultural Units of Learning - Tools and Services) project is an international European endeavor co-funded by the European Commission under the IST Program [8]. The project was initiated by Ziva Ben-Porat from Tel Aviv University as a preliminary stage of her broad cultural vision of LEIT (Library of Explicated Intertextual Threads). Its immediate objectives were primarily technological: "to develop new knowledge-aware multimedia authoring and presentation tools for non-technical experts, for cross-media integration of cultural multimedia artifacts" (Quoted from our website: <http://www.cultos.org/index.html>). In this article, we focus on the major non-technological achievements of the CULTOS Project. Therefore, we describe the technological achievements only in brief, and enlarge on the general cultural ideas promoted by the project and its contribution to the study of intertextuality.

Technological Achievements [9]

Specification and implementation of the properties of autonomous portable meta-data objects (Enhanced Multimedia Meta Objects - EMMOs). As the main "unit of value," EMMOs "encapsulate" meaningful relationships between multimedia objects and map them into navigable hypermedia structures.

Adaptation and development of end-user tools. System tools and integration tools that support autonomous, portable meta-data objects:

1. An authoring tool to be used by a "thread-builder," i.e. for creating and designing the new cultural units by integrating data from a given ontology with multimedia files uploaded through an autonomous multimedia import tool.

2. A transformer for creating a presentation environment in which the new cultural units can be presented to a "thread viewer."

3. Server-side support tools.

4. Improved tool for constructing ontologies - we used software of one of our technological partners to construct our ontology [10]. As a result of our cooperative work, this software was further developed and improved.

Content (Non-Technological) Achievements [11]

Developing the idea of the Intertextual Thread as a new cultural unit, usable for research, education and other cultural goals.

Developing an ontology, i.e. a data model in the field of intertextuality, which can be used for the description of relationships between texts. This data model aims to include all possible relationships, and is proposed as a standard for literary research and neighboring domains.

Identifying as many intertextual relations as possible (traditionally acknowledged relations like parody, or less acknowledged ones, defined by us); then mapping all these relations onto the model.

Developing showcases of Intertextual Threads.

The first point, which is the most directly pertinent to the subject of this paper, will be elaborated at length in the following sections; the other three points will be dealt with more summarily.

A thread incorporates three types of data:

1. Texts. We use the term "text" to denote any semiotic object:

- Artistic texts (or segments of texts) from all possible media (e.g. literature, music, visual art, theatre, motion-picture), introduced as an attached media file or represented by a label.
- Non-artistic texts (or segments) of any kind (e.g. analytical, documentary, explanatory) introduced as an attached media file or represented by a label.
- Fictional or non-fictional world elements (e.g. agents, events, places), provided their semiotic significance is under consideration, represented by a label.
- Abstract knowledge frames (e.g. genres, schools, themes) that can be related to concrete texts, represented by a label.

2. "Supplementary Data" (additional information about the texts). Thread builders can add data concerning the text's nature, qualities and other features (e.g. bibliographical details). They can do that by linking the text to leading concepts (its super categories, e.g. a written text, mosaic, print, video clip) and to extending concepts (other categories that can supply information) and by choosing appropriate entries for attributes that become available as soon as the leading and extending concepts are selected.

3. Intertextual data. A text and its supplementary data form an entity. Thread builders can associate any two entities by defining the intertextual relations between them. Defining intertextual relations is the main goal of creating a thread - portraying the diversity and the complexity of the relationships between texts and/or texts' segments and components (e.g.

characters, stylistic patterns, ideology). In accordance with our wide definition of the term "text," our definition of "intertextual relations" is similarly broad, possibly including, in addition to allusive relations between artistic texts, relations in the nature of a "criticism" or a "commentary," relations between a concrete text and abstract knowledge frames that are relevant to its understanding and relations between artistic texts and historical frames of reference (data/explanatory texts, abstract discourse frames, and concrete reality items - events, people, places, objects - perceived as carrying a semiotic significance).

The Intertextual Thread as a New Cultural Unit

As mentioned above, the broad definitions we adopt of both the "inter" and the "text" parts of the term "inter-textuality" make the intertextual thread a tool for presenting much more than "intertextual relations" in their traditional (and limited) sense - "allusions" by an artistic text to a former artistic text. A thread may be used for illustrating a variety of other kinds of relations, such as between a text and its adaptation to another medium, a text and its commentary, a text and a theme it actualizes, a text and a cultural discourse to which it belongs, or between segments and components within the same text.

However, while the very broad interpretation we give to the term "intertextuality" seemingly aligns our approach with "radical" or "post-structuralist" approaches to the field [12], our ontology also has some important "traditional" features, mainly the privileging of careful differentiations between types of relations (in which we follow semiotic-structuralist approaches [13]), and the preservation of traditional category boundaries (e.g. between artistic/non-artistic or fictional/historical texts).

Thus, we claim that the thread is both general and structured enough to be viewed as a new cultural unit, alongside other established cultural units, such as a paper, a book or a Power Point presentation. The future use of threads may be valuable for many purposes and we tend to group these into three categories:

Academic Research - Intertextual threads based on a well-structured ontology make possible a new format of presenting academic research. This format has some unique advantages (as well as some limitations) in comparison to papers. Thus, threads are not meant to substitute for papers but to provide further options, either as a preferable alternative or as a complementary tool [14].

Education - Threads may be effectively used as digital supplements in conventional "tutored" education on various levels, as well as in self-education, assuming they will be accessible on-line or published on CD-ROMS. Generally speaking, threads may be used in all disciplines dealing with textual analysis, but are particularly useful in those that frequently deal with relations between texts, i.e. intertextuality. A thread may be used as a schematic representation and visualization of the content of a lesson/lecture; due to its flexible modular structure, the same thread may easily lend itself to a refocusing for different subjects and educational purposes and may allow the teacher a wide range of choices with regard to the amount of information and the level of complexity that should be involved in the learning process. And since a

thread contains all the data needed for its understanding (e.g. the analyzed texts, the defined and explicated relations between them and an access to the underlying ontology), it may function as a "self-sufficient" learning system.

Cultural Preservation - Cultural memory and heritage are nowadays major cultural issues, and many resources are allocated to their preservation. We believe that the use of the cultural unit of the intertextual thread within the framework of a hypertextual library (termed LEIT - Library of Explicated Intertextual Threads) can constitute an effective tool for dealing with some of the problems involved, especially by providing a counter-force against the weakening of cultural memory [15] .

The Intertextual Thread vs. Other Modes of Knowledge

Organization on the Internet

Currently, the most overspread and theoretically established form of knowledge organization on the Web is hypertextual structure; therefore, a discussion of the thread in this context is called for. As was clarified above, the theoretical and structural basis of the thread is necessarily hypertextual; however, it has certain advantages over the standard forms of hypertext found on the Internet.

o Highly Informative Links

CULTOS' s linking system has a salient advantage over typical HTML links, because it enables a supply of rich input on the relations previously defined in the thread (see Figure 1 at <http://lea.mit.edu> [16]).

Such additional information makes distinctions between the relations easy and efficient. CULTOS software not only makes these relations visible to the user in a clear and organized

fashion, but uses a visual schematic mapping which makes their presentation even more noticeable. Labels of texts and of relations are interwoven into an illustrative web-like picture of the whole thread (see Figure 2 at <http://lea.mit.edu>). [Both figures show parts of a mini-thread that relates to a paragraph from

Julio Cortazar' s "Hopscotch." It was created by Liza Chudnovsky and included in her paper, "Where the Book Meets the Hypertext: Towards Creating Synergetic Literary Objects," presented in the Inscriptions in the Sand 04 Conference, organized by Eastern Mediterranean University, 3-4 June, 2004.]

In this general graphic presentation of the thread, the viewer can already identify to some extent (through the different labels) the distinctiveness of each relation. Furthermore, the phrasing of the labels specifies which of the linked texts is the (chronological) source and which is the target. Each of the relations can, by request, provide access to a deeper layer of information. By clicking the label, the viewer can get an exact definition of the relation and a set of redefined attributes providing further data, which often turn the link into a detailed and sophisticated comparison of similarities and dissimilarities between the texts involved.

o Better Fitness for Multiple Authoring

Although the hypertext easily accommodates links and documents added by multiple authors, it is not very comfortable for cooperative analysis of the same textual corpus. CULTOS software easily makes possible the cooperation of an unlimited number of researchers in the creation of the same thread and even of relations between the same entities. Moreover, since the program requires the signing of relations by their creators, multiple authoring does not result in anonymity and confusion, as is often the case in current multiple authored hypertexts.

o The Possibility of Creating Relations between Marked Text Segments

In HTML, there is no standard way to connect two marked textual segments without extracting the target segment from its "mother-text;" typically, the "focusing" is done by a meta-textual explanation [17]. The method of linkage used in a thread, on the other hand, offers a better solution for this problem by making it possible to create relations between several complete texts as well as between any of their marked segments. This enables the creation of better-structured hypertexts without relinquishing their immanent openness.

o Automatic and Accurate Mapping

Standard HTML editors do not include the function of automatic mapping of the hypertext's contents (creating a graphic display of the site). Typically, such mapping is performed "manually;" the traditional list of contents is the most widespread way to map a site in order to simplify navigation. However, a leveled hierarchical list cannot represent all the links contained in a hypertext. CULTOS software not only automatically maps all elements included in a certain thread but also (as mentioned above) includes a thread-map of all types of relations that exist between all the thread's entities. This device undoubtedly simplifies navigation and enables the user to perform focused searches in the thread.

o Maximally Open but Structured Net

We consider the CULTOS software to be a proper tool for creating maximally open yet structured and searchable nets (e.g. digital libraries of threads). By "openness" we mean the possibility of endless amplification by all users of the system from all over the world [18]. This feature is common to the threads' library and to the Web taken as a whole. However, in contrast to the Web, a digital library constructed from intertextual threads would impose boundaries not only on the level of the single text, but also on the level of the whole thread. We argue that such an additional degree of organization and unification is highly advantageous for a system as potentially open as a hypertextual net.

Such a digital library is also supposed to be fully searchable. As a matter of fact, the possibility of searching a database effectively enables the users to benefit from the right of free choice (e.g. selective interactivity), which the theoreticians of hypertextuality have promised them, but which is in practice often rather illusory (in small and restricted hypertextual nets) or unachievable (in huge and unrestricted nets).

In sum, the idea and practice of building intertextual threads

is a mode of knowledge organization that matches the idea and practice of the hypertext and aims to utilize its potential in new ways, partly inspired by the Nelson-Landow vision, for intertextual research and analyses.

3. WHY USE A THREAD?

3.1 THE THREAD AS AN ACADEMIC RESEARCH TOOL

The CULTOS project creates a new kind of hypertextuality, in which the connection between texts is not a one-dimensional link but a multi-layered data storage, showing by request the nature of the relationship between the relevant texts. It can be used for publishing a research as a lecture, instead of - or in combination with - a PowerPoint presentation. It can also be submitted to an online magazine, instead of - or in combination with - a paper. Having already compared the thread with other modes of hypertextual knowledge-organization, let us now compare it with a major non-hypertextual mode: what are the relative advantages (and disadvantages) of using a thread over a paper? We distinguish, in this context, between the thread-author and the thread-viewer (end user). Most advantages, we believe, are for the viewer (but indirectly for the author as well, since everyone wants to have an audience).

The Thread-viewer vs. the Traditional Paper-reader

Flexibility

The greatest difference between reading a paper and viewing a thread lies in the higher degree of flexibility the addressee enjoys in the latter. A paper has a linear structure and should be read in its entirety from beginning to end; an intertextual thread, on the other hand, encourages users to choose their preferred order of viewing, and easily allows them to focus on a particular section of the thread while ignoring the rest of it, since single sections of a thread (from the level of a single relation between two texts) are, as a rule, much more logically autonomous than the sections of a paper. The multi-layered structure of the thread encourages viewing in stages: the viewers decide for themselves to what extent they want to dwell on each thread. A thread has a label, an abstract and a graphic layout. The viewer can use any of these to get a first impression of the sorts of texts and relations that are involved, or of the general idea behind the thread; can linger on any particular section of the thread, overlooking the rest of it; can ignore encapsulated mini-threads, or navigate into each of them. S/he is then able to focus on some of the texts, or on the relations that s/he finds particularly interesting. Interior search engines should increase this flexibility by enabling sophisticated quests based on the attributes input. Viewers should be able to look, for example, for:

All the texts parodying *Hamlet*, while maintaining similar interrelations between the characters.

All the cases in which a character in a text is perceived as alluding to a character in an earlier text, while a transformation of gender takes place.

All cases in which a text is perceived by society as prophesizing a historical event.

All artistic texts that reinforce "anti-globalization" discourse.

Subjectivity

A thread is basically as subjective as a paper, yet there might be a greater temptation to resort to threads as some sort of an objective truth because of their logical classificatory nature. In order to minimize such a risk, the author of each relation in a thread has to sign it. The signature helps us to remember that each "given" relation has at least some interpretive aspect and, at the same time, enables the integration of the author's identity and prestige as an additional factor in judging the validity of the data. Furthermore, in order to render the subjective dimension of the thread more transparent, we have included two complementary attributes for each relation: The degree of the relation's explicitness - explicit, implicit, or "subconscious," as in some advertisements that aim at creating an intertextual effect without arousing any awareness to it.

The validity of the relation - the author expresses the extent of his/her readiness to substantiate the claim presented by the relation: certain, probable, possible.

The Thread-Author vs. The Traditional Paper-Author

Lack of Sequence

The traditional paper author puts a lot of effort into editing the paper in what s/he considers to be the most effective linear order, because s/he has control over the sequence of its reading. The thread author, however, gives up this sort of control. The only mechanisms s/he can use to control the viewing of the thread are:

To divide a complex thread into several mini-threads, each reflecting a simpler or more clearly articulated idea. In a limited (and exceptional) case, a mini-thread may consist of no more than two texts.

To add an abstract - a description of the idea animating the thread (and any of its mini-threads), which may also function as a recommendation for a certain viewing sequence.

To use the graphic layout of the thread in order to call attention to some of its organizing principles (e.g. pinning the principal texts to the center).

Still, these mechanisms are much less effective than controlling the reading sequence. Thus a general position or argument can be better presented through a paper. A thread can be easily broken into smaller units, an act resulting in a weakening of the overall picture; and even when not broken into smaller units, a thread tends to be perceived as a series of interpretive claims and judgments, while the unifying idea behind them may not be so clear to the viewer. Evidently, if the author has a new general hypothesis to offer, a thread would not be the ideal place for it. On the other hand, if the author wants to offer specific comparative observations, to analyze influences, or to describe various actualizations of the same idea in different texts, the construction of a thread may prove a highly efficient methodological tool.

No Size Limitations

The traditional paper has obvious size limitations. Although

online publications pretty much cancel the cost factor, they do not cancel the cognitive - and institutional - factors behind these limitations. As a rule, a paper should not be longer than 35-40 pages, since it should be possible to read it in "one sitting" (or one concentrated span of attention), and it should not be shorter than 10 pages, otherwise it would be considered as underdeveloped. A single notion or insight that comes into an author's mind may not be sufficient for a paper; it can be added as a footnote to another paper, but only in a condensed way and depending on how significant is its contribution to the paper's main topic of discourse. A thread, on the other hand, has no real size limitation. Basically, its weak sequentiality (described above) dismisses the main factor behind size limitation; a thread can never be too long if the cost of discontinuing is so much minimized.

Clarity vs. Individuation

When we talk about precision as a quality of a presentation, we may tend to confuse two different meanings:

Individuation. The refinement of the referent-meaning's uniqueness - striving for a sort of exclusive depiction that would help the readers to distinguish as clearly as possible the idea under discussion from any possible alternative idea. Clarity. The transparency of the communication - striving for a common ground with the readers, so that their comprehension will be as similar as possible to the author's intention.

The use of the term "precision" for both meanings is misleading, unless we explain to which sort of precision we refer. The difference between a paper and a thread is, in a way, parallel to the difference between these two types of precision. While the paper is a much better vehicle for achieving individuation (emphasizing the uniqueness by an extensive discussion and elaboration, figurative language, or other rhetorical means), the thread is better suited for providing clarity. The process of classification constrains the author to clear-cut decisions and exact definitions and much less can be left in "gray areas," that is, there is much less room for ambiguity and vagueness on the relations' level of the thread.

Analytical vs. Holistic Thinking

The process of classification tends to transform intuitive holistic understanding into a set of simple and straightforward relations. A complex relation can be illustrated in a paper through descriptive formulations, exemplifying instances or impressionistic language. In an intertextual thread, such a relation will have to be divided into several simpler relations. This process has some disadvantages: the breaking of complex ideas into their basic components is not so easy; it requires training and experience and is not a typical part of the literary scholar's task. Yet when successfully done, such a process leads to a better awareness (of both author and readers) of the nature of the complex relation.

4. SUMMARY: FUTURE IMPLEMENTATION

Beyond its uses in the fields of literature, the arts and cultural studies discussed so far, the new mode of data organization developed by the CULTOS project - threads combining texts of all types and a description and analysis of their

interrelations, all presented in a user-friendly multi-layered structure - may prove relevant and useful for many other domains. The full potential of the tools and the concept of new cultural units, as described in this paper, is not yet clear. In order for it to become standardized, aggressive marketing is needed (as in the case of PPT software, which can be seen at <http://www.iki.fi/~jalkanen/PPT.html>) as well as a great deal of practice and patience. Numerous organizations have already shown considerable interest in using the new cultural units of intertextual threads for several tasks in different fields: the Salzburg Research Institute (Austria) and Tel Aviv University (two of the leading partners in CULTOS) for advancing the original LEIT vision of digital libraries based on intertextual threads; Salzburg Research for a project about systematization of knowledge in areas such as medicine and economics; a group of psychologists from Technische Universität Berlin (Germany) for developing a standard database unit for legal evaluations concerning children's custody (in cases of divorce); and Digital Art Center in Holon (Israel) for developing a sophisticated method of indexing its digital archive of video art, new media and net art. Such projects will probably require some adjustments in the ontology, such as the use of different terminology, decreasing or increasing the number of relations, adding new concepts, etc.

Our vision includes other domains as well. Basically, we believe that a very wide spectrum of fields, from military intelligence analysis to artistic expression, can profit from the intertextual thread as a new and effective mode of knowledge organization in the realm of seemingly endless hypertextual navigation.

REFERENCES AND NOTES

1. The term hypertext, as it is used in this paper, denotes a text composed of blocks of text and the electronic links that join them, in any media (see Paul Delany and George P. Landow, "Hypertext, Hypermedia and Literary Studies: The State of the Art," in **Hypermedia and Literary Studies**, eds. Paul Delany and George P. Landow, Cambridge, MA: The MIT Press (1991) p. 4.
2. Gary Tinterow and Geneviève Lacambre, eds., **Manet/Velázquez: The French Taste for Spanish Painting**, New Haven, CT: Yale University Press, in association with the Metropolitan Museum of Art (2003).
3. At this point, some readers may protest that not all of these relations are, strictly speaking, "intertextual." We believe they are, because of our wide definition of the notion of "text;" this issue will be discussed later in the paper, in section 2.2.
4. Theodor Nelson, **Computer LIB: Dream Machines**, Redmond, WA: Tempus Books (1987 [1974]) p. 146; emphasis in the original.
5. Paul Delany and George P. Landow, "Hypertext, Hypermedia and Literary Studies: The State of the Art," in **Hypermedia and Literary Studies**, eds. Paul Delany and George P. Landow, Cambridge, MA: The MIT Press (1991) p. 39.
6. Recently, Nelson has proposed a solution for the problem of

links' invisibility, which, according to him, interfered with the creation of well-structured nets (see his Cosmic Book software) <http://www.xanadu.com/cosmicbook> .

7. David S. Miall, "Trivializing or Liberating? The Limitations of Hypertext Theorizing," in **Mosaic**, Vol. 32, No. 2, pp. 167-168 (1999).

8. EC: sixth call, IST (Information Society Technologies) <http://www.cordis.lu/ist/> . A two-year project concluded 31 October 2003.

9. The technological partners participating in this project are: Salzburg Research (Salzburg, Austria); Universitat Viena - Department of Computer Science and Business (Vienna, Austria); Intelligent Views (Darmstadt, Germany); and Mercatis Information Systems (Neu-Ulm, Germany).

10. The software is K-builder, by Intelligent Views, and is based on object-oriented programming.

11. The content partners participating in this project are: Tel Aviv University - The Porter Institute for Poetics and Semiotics (Tel Aviv, Israel); University of Tartu - Department of Literature and Folklore (Tartu, Estonia); University of London - Institute of Romance Studies (London, U.K.); University of Southampton (Southampton, U.K.); Technische Universitat Berlin - Semiotic department (Berlin, Germany).

12. Exemplified by Jacques Derrida, in **Of Grammatology**, translated by Gayatri C. Spivak, Baltimore, MD: Johns Hopkins University Press (1976) and Roland Barthes, "The Death of the Author," in **Image-Music-Text**, edited and translated by Stephen Heath, New York, NY: Hill and Wang, pp. 142-148 (1977).

13. Such as the one presented in Gérard Genette, **Palimpsests: Literature in the Second Degree**, translated by Channa Newman and Claude Doubinsky, Lincoln, NB: University of Nebraska Press (1997 [1982]).

14. We will elaborate on this category in section 3 of this article ("Why Use a Thread?").

15. For further discussion of this, see Ziva Ben-Porat, "Cultural Memory, Cultural History, and Cultural Canons in the Third Millennium," in **Arcadia**, Vol. 38, No. 2, pp. 339-342 (2003).

16. Figures 1 and 2 show parts of a mini-thread that relates to a paragraph from Julio Cortazar's **Hopscotch**. It was created by Liza Chudnovsky and included in her paper, "Where the Book Meets the Hypertext: Towards Creating Synergetic Literary Objects," presented at the Inscriptions in the Sand 04 Conference, organized by Eastern Mediterranean University, 3-4 June, 2004.

17. As mentioned in [6], Nelson has attempted to solve this problem (of the links' invisibility) in his Cosmic Book software.

18. We do not exclude the possibility that less qualified users (such as students of all levels of competency) will be able to publish their threads in such library-like nets, side by side with researchers and educators.

CONTRIBUTORS' BIOGRAPHY

Ziva Ben-Porat (former professor of poetics and comparative literature) is the director of the Porter Institute for Poetics and Semiotics at Tel Aviv University. Her publications include *Lyrical Poetry and the Lyrics of Pop* (1989; in Hebrew), *Autumn in Hebrew Poetry* (1991; in Hebrew) and as editor for *Rewriting* (2003; a special issue of *Journal of Romance Studies*). She has also written many articles, including "The Poetics of Literary Allusion," in *Poetics and Theory of Literature 1* (1976); "Method in Madness: Notes on the Structure of Parody, Based on Mad's T.V. Satires," in *Poetics Today 1* (1979); "Represented Reality and Literary Models: European Autumn on Israeli Soil," in *Poetics Today 7* (1986); "Poetics of the Homeric Simile and Theory of [Poetic] Simile," in *Poetics Today 13* (1993); "'Sad Autumn' and Cultural Representations: A Comparative Study of Japanese and Israeli 'Autumn'," in *In Honor of Elrud Ibsch*, eds. Dick Schram and Gerard Steen (2001); and "Saramago's Gospel and the poetics of prototypical rewriting," in *Journal of Romance Studies 3* (2003).

Motti Benari is currently working at the Salzburg Research Forschungsgesellschaft. His Ph.D. deals with cognitive aspects of metaphorical phenomena. Dr. Efrat Biberman teaches aesthetics in the department of philosophy at Tel Aviv University. Her Ph.D. deals with narrativity in the visual field from a psychoanalytic perspective. Tammy Amiel-Hauzer teaches in the department of poetics and comparative literature at Tel Aviv University and in the Open University. She is currently working on her Ph.D., which is a study of Levinas and literature, and is editing a reader of feminist theories for the Open University.

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MANUSCRIPT RECEIVED 8 FEBRUARY 2004

LEONARDO REVIEWS 2004.09

This month in Leonardo Reviews, we offer 18 new reviews posted at <http://leonardoreviews.mit.edu>. Featured below is another result of our collaboration with *Image and Narrative*, and we are pleased to offer another review of Angela Ndalianis' new book, *Neo-Baroque Aesthetics and Contemporary Entertainment*. Ranging elsewhere over topics as varied as design, cinema, architecture, the politics of visual culture, music and much

else, Leonardo Reviews offers a digest of emerging trends that we hope are the key issues that the Leonardo community has at the forefront of its research and practice.

Also featured this month is a review by newest panel member John Barber - **Ghouls, Gimmicks, and Gold: Horror Films and the American Movie Business, 1953-1968**, by Kevin Heffernan, reminds us that popular appetites for particular genres and interpretations of technology are social constructions rather than the formal destiny of specific media. As such, his book is a timely intervention (it seems from Barber's review) and may affect what many of us think about ethics and media - not as a social and moral topic, but as the "character" of a technological form, which is itself a social and ethical construction.

Michael Punt
Editor-in-Chief
Leonardo Reviews

Leonardo Reviews posted at <http://leonardoreviews.mit.edu>
September 2004

Activity-Centered Design: An Ecological Approach to Designing Smart Tools and Usable Systems, by Geri Gay and Helene Hembrooke
Reviewed by Rob Harle

Artful History: A Restoration Comedy, by Jason Simon and Mark Dion
Reviewed by Roy R. Behrens

The Cinema Effect, by Sean Cubitt
Reviewed by Yvonne Spielmann

Design Research: Methods and Perspectives, edited by Brenda Laurel
Reviewed by Maia Engeli

Frank Lloyd Wright and the Johnson Wax Buildings, by Jonathan Lipman
Reviewed by Roy R. Behrens

Ghouls, Gimmicks, and Gold: Horror Films and the American Movie Business, 1953-1968, by Kevin Heffernan
Review by John F. Barber

God's Man: A Novel in Woodcuts, by Lynd Ward
Reviewed by Roy R. Behrens

History After Apartheid: Visual Culture and Public Memory in a Democratic South Africa, by Annie E. Coombes
Reviewed by Andrea Dahlberg

La Commune (Paris 1871), by Peter Watkins
Reviewed by Roy R. Behrens

Les défis du cybermonde, by Hervé Fischer, Editor
Reviewed by Stefaan Van Ryssen

Neo-Baroque Aesthetics and Contemporary Entertainment, by Angela Ndalianis

Reviewed by Jan Baetens

Purity And Provocation: Dogma 95, by Mette Hjort and Scott McKenzie, Editors

Reviewed by Michael R. (Mike) Mosher

Red Edge, by Frode Gjerstad and Lasse Marhaug

Reviewed by Michael R. (Mike) Mosher

Rhythm Science, by Paul D. Miller (aka DJ Spooky that Subliminal Kid)

Reviewed by Michael R. (Mike) Mosher

The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900-1933, by Emily Thompson

Reviewed by Trace Reddell

Tranzition, by Richard Pinhas

Reviewed by Trace Reddell

Understanding Me: Lectures and Interviews, by Marshall McLuhan

Reviewed by Michael R. (Mike) Mosher

You Can Hear me, by Ehmes (Pat Mantovi)

Reviewed by Stefaan Van Ryssen

NEO-BAROQUE AESTHETICS AND CONTEMPORARY ENTERTAINMENT

by Angela Ndaljianis, MIT Press, Cambridge, MA, 2004. 336 pp., illus. Trade, £22.95. ISBN: 0-262-14084-5.

Reviewed by Jan Baetens

Jan.Baetens@arts.kuleuven.ac.be

With **Neo-Baroque Aesthetics and Contemporary Entertainment**, Angela Ndaljianis has written an important book. Although the relationships between neo-baroque and postmodern culture (here represented by the entertainment industry) have been stressed by many scholars (Calabrese [1992] still being the best-known of them), Ndaljianis succeeds in broadening the discussion in various significant ways. But how does the author "outperform" (to quote one of her favorite expressions) the achievements of the existing scholarship on the neo-baroque/postmodern issue?

On the one hand, one might have the impression (which is false) that Ndaljianis' book offers nothing more than a systematic, complete, up-to-date, popular culture-oriented view and reworking of the baroque's posterity in today's mass culture: she documents thoroughly issues such as "polycentrism and seriality", "intertextuality and labyrinths", "hypertexts and mappings", "virtuosity, special effects, and architectures of the senses", "special-effects magic and the spiritual presence of the technological", without saying anything that Calabrese and others have not already said. Yet on the other hand, Ndaljianis also introduces a set of very new insights and approaches, which transform dramatically the very terms of the discussion, and this is what makes **Neo-Baroque Aesthetics and Contemporary Entertainment** a real landmark publication.

Ndalianis, who accepts the use of baroque and classic as transhistorical categories and who accepts equally the current definitions of both concepts (following Wölfflin and others, she thus opposes both as open versus closed, or dynamic versus static, etc.), emphatically rejects any binary analysis of their opposition. First, the author theorizes the relationship between the two poles of classic and baroque in terms of continuity, instead of split: the neo-baroque era in which we are living is neither the result of a refusal of the classic, nor the outcome of a degenerative process. Neo-baroque's "chaos" is not the contrary of classicism's "order"; the first is, on the contrary, to be analyzed as a complexification of the latter. This reconsideration of the relationships between the two major tendencies in our culture is a crucial shift that Ndalianis transfers also to other dichotomies, such as modernism versus postmodernism, in which she manages to break with the too easy identification of postmodernism and neo-baroque. Neo-baroque is, for her, part of the larger whole of postmodernism, not a simple synonym for it.

Second, and this is a very logical step in the author's argumentation, Ndalianis' refusal to oppose classic and baroque in an absolute way helps her to re-establish the fundamental historicity of each form taken by both tendencies. In a more concrete manner, Ndalianis, while permanently foregrounding what links contemporary entertainment to seventeenth-century baroque, illustrates no less systematically the differences between those two cultures. Taking her inspiration from Bolter and Grusin's remediation theory (Bolter and Grusin, 1999), Ndalianis demonstrates convincingly that given the differences at economic, social, political, ideological and scientific level, baroque culture and neo-baroque culture cannot be the same, despite all the forms, techniques and goals they undoubtedly share (baroque's catholicism, for instance, is something very different from neo-baroque's new age sympathies).

Yet the renewing force of Ndalianis' book is not limited to the discussions on the meaning, use and scope of the notions of (neo-) baroque and classic. *Neo-Baroque Aesthetics and Contemporary Entertainment* makes an important contribution to the field of cultural semiotics as well as to the theory of contemporary culture as visual culture. In this sense, it is not exaggerated to claim that the stances defended by the author complete the theoretical attempts to define "visual culture" in the wake of W.J.T. Mitchell's famous visual turn (Mitchell, 1994). Taking here as a starting point the cultural semiotics of Lotman (1990), Ndalianis tries to give a more concrete interpretation of his very abstract boundary theory of culture. Culture, for Lotman, is based on a double mechanism of inclusion and exclusion (before anything else, the semiotic mind shapes a universe by tracing a limit between an inside and an outside) that Ndalianis interprets in terms of culture as "spatial formation" (one may hear correctly an echo of Foucault's discursive formations) and finds illustrated in the tension between classic and baroque, the latter being fundamentally a culture oriented towards the lack of or breaking of limits (for instance the limits between inside/outside, real/fictitious, spectacle/spectator, etc.).

A fourth major achievement (besides the overcoming of the classic/baroque dichotomy, the re-historicization of these transhistorical categories, and the valorization of the semiotic framework in cultural theory) is the healthy polemical tone of many pages of the book. How refreshing to read that one can

embrace postmodernism and popular culture (and thus reject any nostalgia of a mythical high-art and unadulterated modernism), while at the same time attacking the cultural pessimism of what is called here the postmodern "Holy Trinity" (Baudrillard, Jameson, Lyotard). The very positive interpretation of notions such as seriality, copy, repetition, etc., that are for Ndalianis signs of vitality and instruments of (re)invention, provide a good example of the author's independent thinking. Another good example is the polemics with the defenders of the "classic Hollywood paradigm" in film studies such as those of Kristin Thompson (1999), whose work tends toward a negation of the neo-baroque in contemporary mainstream cinema.

Of course, **Neo-Baroque Aesthetics and Contemporary Entertainment** is not a perfect book. One may regret that quantitative information (and even information overload!) sometimes takes the place of qualitative analysis. Ndalianis overwhelms her reader with everything he or she wants to know about this or that aspect of seventeenth-century history or contemporary film production, but she fails sometimes in offering her reader what a good book of this sort cannot do without: close reading. Although all the information on, for instance, the technical or financial underpinnings of *trompe l'oeil* ceilings or Spiderman tie-ins is very useful as such (the book has encyclopedic qualities that every reader interested in the genealogy of the neo-baroque will really need when tackling the subject from a different viewpoint), some pages of the book do not always adequately stress what is really at stake behind some figures. There are fortunately many counterexamples of this, among which is Ndalianis' brilliant analysis of the opening sequence of **Star Wars**, with fine and subtle remarks on the modifications of Hollywood's off-screen paradigm (Ndalianis shows very well how, thanks to its new use of surround sound, **Star Wars** revolutionizes the classic relationship between on-screen and off-screen, bringing an end to this diegetic opposition in order to introduce a kind of blurring of the boundaries between the images onscreen and the space of the audience in the theater: a typically neo-baroque move.)

From time to time, Ndalianis also has the unfortunate habit of quoting rather than truly reading. One has, of course, to forgive the author for that, but this kind of second-hand quotation sometimes produces a lack of subtlety in her argumentation. To give just one example: in the discussion on literary baroque, I would have welcomed a more cautious presentation of Jorge Luis Borges (whom Ndalianis strangely calls Luis Borges), since Borges' work, often praised for its forsaking all South-American baroque at the level of its style, is definitely different than, for example, the very "wild" and definitely baroque writing of Severo Sarduy or Lezama Lima. Corollarily (but this is a problem with many Anglo-Saxon interpretations of the modernism/postmodernism debate), the coupling of Borges and Derrida, which can be defended at a strictly theoretical level if one considers that both writers take poststructuralist stances, is seriously challenged by the stylistic and rhetorical differences between them. But these are minor flaws, compared to the major qualities of a book that sheds much new light on very old problems.

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GHOULS, GIMMICKS, AND GOLD: HORROR FILMS AND THE AMERICAN MOVIE BUSINESS, 1953-1968

by Kevin Heffernan, Duke University Press, Durham, NC, 2004.
336 pp. Trade, \$22.95. ISBN: 0-8223-3215-9.

Reviewed by John F. Barber, Schools of Arts and Humanities, The University of Texas at Dallas
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For the interested student of cinema, there are many books focusing on horror films. Some provide biographical accounts, others analyze and critique the films and/or their production techniques, while still others document their aesthetic and cultural contributions.

Ghouls, Gimmicks, and Gold, a new book by Kevin Heffernan, is the first, however, to analyze and explain the numerous economic factors that changed how horror films were produced and distributed from 1953-1968, from the end of the studio era to the conglomeration of "New Hollywood."

Heffernan argues that major cultural and economic shifts in production and reception of horror films began in 1953 with technological innovations designed to attract more viewers and ended in 1968 with the codification of a rating system for films previously intended for a youth audience and the development of the adult horror film, epitomized by **Rosemary's Baby**. The efforts of movie producers to attract the attention and money of audiences, Heffernan argues, were largely responsible for the evolution of the horror film genre during this time period.

For example, the brief boom in "3-D" films from 1952-1954, rather than foregrounding bizarre and shocking three-dimensional movie visual and narrative effects, was designed to increase studio profits through the sale of new projection equipment to exhibitors.

The use of color and gore, first seen in **The Curse of Frankenstein** (1957), was similarly designed to increase profits through exaggerated and stylized responses to conventions

completely familiar to hard-boiled movie audiences. As Heffernan notes, audiences found their worlds becoming tougher and tougher, and it was important for any film to be even tougher in order to elicit the desired reaction.

New audiences were developing, however. The 1950s produced the first ever market of teenagers with discretionary income. This growing youth market was identified and wooed and efforts by film producers to sell their products to this market often directly affected the nature of the product itself. For example, the advertising campaigns developed to attract the attention of these young viewers, Heffernan says, sought more and more to exploit sensational, violent or horrific content and titles, even before scripts for the films were written or film exposed. In this sense, the carnival-barker style of such campaigns actually drove the production of the films in ways thought to best match the created audience's desire. The result was exploitation films notable for their wild hype and low production qualities - the "B" movies prominently featured in local theater double-features.

International co-production was extremely important for the evolution of horror films during the 1960s, especially as an attempt to realize increased economies from the production and distribution of downscale genre films that could be easily upscaled through the conspicuous utilization of new technology or other production techniques. It meant increased opportunities for the television syndication arms of U.S. movie studios, especially since there was an insatiable desire for content to fill the gaping maw of television. The switch to color, in response to the needs of television, forced further aesthetic changes on horror films, increasing their potential to be more specific, more realistic.

Finally, the growing use of more graphic violence, explicit sexuality, bleak social commentary and downbeat endings, exhibited in films like *The Night of the Living Dead* and *Rosemary's Baby*, both released in 1968, marked a turning point for the low-budget horror film when producers realized that such films could be exploited in both matinee and evening slots and thus sold to completely different audiences, youth as well as adult.

The result is that changes in the horror movie industry from 1953-1968 continue to form a model for exploitation of the movie marketplace. For example, saturation booking patterns for genre horror films then are associated with today's blockbuster releases. The upscaling of low-budget horror films through association with big stars and best-selling novels is another current-day technique developed during this period. So, too, is the concern with the international box office, the focus on making films for the youth market, the increasing importance of special effects, the continuing escalation of gore and violence, and "unprecedented interest in movies by the intelligentsia" (p. 224).

In the end, Heffernan concludes that much of the evolution of horror films stems from "the cultivation of the young as a consumer group in the postwar period" (p. 228). Originally conceived for and offered to a young audience, the horror films of the 1950s and 1960s continue to attract the interest of present-day baby boomers who parlay their zeal for the genre into concerns with canonicity and restoration, with recuperation of popular culture that seems to far outstrip any thought that

horror films represent texts and artifacts of misbegotten youth.

CLASSIFIED ADS

NANYANG TECHNOLOGICAL UNIVERSITY SCHOOL OF ART, DESIGN AND
MEDIA SEEKS CREATIVE GURUS

Professors, associate and assistant professors, visiting creative and scholarly professionals interested in teaching at a new school launching in 2005

Destined to become a truly comprehensive, international university by July 2005, NTU, Singapore is launching a brand new, first of its kind school of art, design and media (SADM), designed to offer richness, opportunities and diversity never seen before in a regional, tertiary education.

The new school will offer undergraduate and graduate education and research. Its curriculum will be focused on creativity, ideas, innovation, exploration and professional expertise. The school will put forward truly international thinking, exposure, visiting artists, scholars and presenters, student and faculty exchanges and global relations. SADM aims to shape exciting education that draws upon contrasts and richness derived from the very best of different cultures, ideas, creativity, arts, history and global thinking. Asia is the fastest expanding vibrant market in terms of evolving educational programs, co-production, production endeavors, technologies and opportunities for international exchanges.

Our goal is to transform Singapore into a global media city by educating artistic, creative and innovative talent empowered to advance the arts, design and media beyond the present and into original intellectual property development and production thereof. SADM will become the creative haven within which studies at all levels and artistic aspirations in innovative art and technology, design and media will be supported via cutting-edge research and production, all of them realized through global education inspiring individuality and self-discovery.

SADM invites enquiries and applications from qualified candidates who would treasure a rare and unique opportunity to contribute their own talents, experience and ideas towards shaping this new creative institution. New faculty appointments will be made at various levels of faculty - assistant professorship, associate professorship, professorship and visiting artist.

Successful applicants will contribute to the entire school's development, the undergraduate and graduate curriculum, teaching and research in one or more of the following areas:

o Animation: 2-D traditional, experimental and digital, 3-D computer animation, stop motion, original concept development and storytelling as well as imaginative scriptwriting for animation.

- o Digital Cinema: traditional and experimental filmmaking as well as acting and directing, scriptwriting and sound design.
- o Game and Interactive Design: digital & traditional forms of creative game and concept design, exploring interactive game storytelling, AI character design, plus motion capture performance within game as well as interactive art.
- o Visual Communication: graphic design as well as graphic arts, motion design and web design.
- o Object Design: product design, innovations in wearable technology and interactive furniture, character and set design for a range of media, design and art and technology.
- o Photo and Sequential Art: still visual storytelling and original concept & storyboard design projected via sequential arts, commercial as well as artistic photography.
- o Installation Design: exploring spatial design, interactive architectural spaces, VR/AR environments, interactive installation, theme park ride films.
- o Emotive Robotics: character robotics, acting, responsive objects, virtual as well as organic sculpture and futuristic toy and sculpture design.
- o Creative Writing: developing innovative concepts, imaginative, original writing and scriptwriting for animation, film, game and advertising.
- o Performing/Integrated Art: traditional and experimental theater, acting, directing, staging, choreography and character development, interactive performances and installation arts utilizing motion capture technologies.

Visiting faculty and creative professionals interested in workshops or term-long engagements in any of the above areas or disciplines, scholars in history of film, film analysis, history and evolution of international animation, design, art and technology, world mythology, creative scriptwriting for animation and film, criticism, politics and art, future media are welcome.

Curriculum and inventive pedagogy development, course management and personal creative work will come under the remit of such full-time or long-term visiting faculty members.

Applicants must possess strong creative production experience as well as some academic background. Applicants for senior level appointments should additionally have a track record showing academic leadership through research and course development and administration.

SADM is being positioned as an international, creative, original concept-driven and idea-focused educational environment, one that projects its innovative approaches through its pedagogy, exposure to world's thinking, arts, cultures and ideas, as well as via relationships with similar institutions around the world. Hence, we seek a spectrum of international candidates with global interests, exposure, experience, values, commitment and passion for projecting such values to students chosen for their creativity and desire to

become status quo mold breakers.

To apply, please submit an application form (which can be downloaded from <http://www.ntu.edu.sg/personnel/ApplyInforms.htm>) or detailed curriculum vitae which should include your areas of research interest, sample of professional and personal work, list detailing roles played on these projects or publications, list of awards from festivals and competitions, names, postal and e-mail addresses of three referees. Please also provide a one-page cover letter or statement defining your personal aspirations, reasons for wishing to join the new school and perceived contribution you would wish to make. Applications should be sent to:

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<http://www.ntu.edu.sg/personnel/ApplyInforms.htm>

ISAST NEWS

LEONARDO/ISAST CORPORATE MEMBERSHIP PROGRAM

Leonardo/ISAST has initiated a program to expand its community to work with companies that are involved with research in the intersection of art, science and technology.

\$1000 Corporate membership benefits include:

- Acknowledgment of the company by logo, ad or text, in the pages of *Leonardo* or *Leonardo Music Journal*
- The company's logo and Web link featured on the Leonardo On-Line website
- A subscription to the bimonthly journal *Leonardo*
- A subscription to the annual volume of LMJ with accompanying CD
- A choice of two current Leonardo Book Series volumes
- Online access to the above journals and to *Leonardo Electronic Almanac*
- Collaboration on publication of research results sponsored by the company

Leonardo/ISAST recognizes the interplay between artistic innovation and economic development. The ISAST Corporate membership program is intended to open up new avenues for the Leonardo Network members to work with the corporate community.

To find out more about the Corporate Membership program, contact Kathleen Quillian at isast@leonardo.info

LEONARDO EXPERIMENTAL PUBLISHING INITIATIVE

The Leonardo/ISAST board of directors, in conjunction with the editors of Leonardo publications, is considering a wide range of experiments in publishing for possible implementation over the next several years. The exciting range of possible changes includes more color reproductions in print, a Leonardo preprint server, production of supplemental CDs or DVDs, and a closer integration between *Leonardo* and *Leonardo Electronic Almanac* (LEA) that would facilitate publication of experimental work. We are especially interested in showcasing the work of younger artists and scholars that tends toward the new and the experimental.

Readers of *Leonardo* may already have noticed a number of layout and design changes during the 2004 volume of the journal. Thanks to the input of board member Greg Niemeyer and the cooperation of our publisher, MIT Press, we have begun to implement incremental changes in the look of the journal. With an initial goal of instituting changes that afford maximum impact at minimal cost and disruption, we are very pleased with the results to date, which include the use of full-page illustrations, a new look for the table of contents and a new section called "After Midnight," curated by Greg Niemeyer and highlighting a perspective on the arts from a different city with each issue. We have also instituted our Corporate Membership program, which allows us to print full-color covers on sponsored issues. We look forward to continuing to work with Greg to improve the look and feel of the printed journal, and we welcome comments from our readers.

The world of publishing is evolving rapidly as technology continues to revamp most aspects of our lives. How can we best use the venues that are already part of our Leonardo world - *Leonardo*, the *Leonardo Music Journal*, *Leonardo Electronic Almanac*, Leonardo On-Line, the Leonardo Book Series, OLATS News, www.olats.org - and what new paths should we go down?

Scholarly publishing inhabits a difficult landscape at this time, needing to situate itself at the forefront of technological changes and possibilities while at the same time struggling financially through this era of budget cuts and a tentative worldwide economy. We seek funding partners - whether foundations, corporations or educational institutions - wherever such partnerships resonate with the goals of all parties. Whether or not funding partners are found, we will continue our efforts to bring the best work in art-science-technology to the Leonardo community by the most innovative means possible.

- Pamela Grant-Ryan, pgr@leonardo.info
Leonardo Managing Editor; Project Manager, Experimental Publishing Initiative

ANNOUNCING LEONARDO ABSTRACTS SERVICE (LABS) OF THESIS ABSTRACTS IN THE ARTS/SCIENCE/TECHNOLOGY

LABS is a comprehensive database of Ph.D., Masters and MFA thesis abstracts in the emerging intersection between art, science and technology. Individuals receiving advanced degrees

in the arts (visual, sound, performance, text), computer sciences, the sciences and/or technology, which in some way investigate philosophical, historical, or critical applications of science or technology to the arts, are invited to submit an abstract of their thesis for publication consideration in this database.

The LABS project does not seek to duplicate existing thesis databases but rather to give visibility to interdisciplinary work that is often hard to retrieve from existing databases. The abstracts are available online at Pomona College, Claremont, California, so that interested persons can access them at no cost: <http://leonardolabs.pomona.edu> .

In this initial phase, only theses available in English are being considered, but LABS will shortly accept abstract submission for theses in other languages through a collaboration with Artnodes of Barcelona.

Chaired by professor Sheila Pinkel of Pomona College and comprising academics and artists, an international peer-review panel (PRP) reviews abstracts for inclusion in the database. In addition to publication in the database, a selection of abstracts selected by this panel for their special relevance will be published quarterly in *Leonardo Electronic Almanac* (LEA) and authors of abstracts most highly ranked by the panel will also be invited to submit an article for publication consideration in the journal *Leonardo*.

Authors of theses interested in having their thesis abstract considered for publication should fill out the Thesis Abstract Submittal form at <http://leonardolabs.pomona.edu>

The English-language peer-review panel for 2004-2005 consists of Pau Alsina, Jody Berland, Sean Cubitt, Frieder Nake, Sheila Pinkel and Stephen Petersen. Abstracts will be reviewed for inclusion quarterly. The database will only include approved and filed thesis abstracts. Theses filed in prior years may also be submitted for inclusion.

For more information about the LABS project, see <http://leonardolabs.pomona.edu>

LABS PEER REVIEW PANEL MEMBERS

Sheila Pinkel is an artist and professor of art at Pomona College, where she teaches photography, computer graphics, photo history and media studies. She has been an international editor of *Leonardo* since 1984.
Contact: spinkel@earthlink.net

Sean Cubitt is professor of screen and media studies at the University of Waikato, New Zealand. His most recent books are *Digital Aesthetics* (Sage, 1998), *Simulation and Social Theory* (Sage, 2001) and *The Cinema Effect* (MIT, 2004) and, as co-editor, *Aliens R Us: Postcolonial Science-Fiction with Ziauddin Sardar* (Pluto Press 2002) and *Against the Grain: The Third Text Reader* (Athlone/Continuum, 2002). He is currently completing a book, *EcoMedia*, for Rodopi, due in 2005. He has also curated video and new media exhibitions and authored videos, courseware and web poetry.

Homepage: <http://130.217.159.224/~seanc/>
Contact: seanc@waikato.ac.nz

Pau Alsina is a philosopher, professor of humanities and philology studies at the Universitat Oberta de Catalunya (UOC) (a virtual university based in Barcelona), researcher in digital art at the Internet Interdisciplinary Institute (IN3) and director of ArtNodes, a forum for the intersections of art, science and technology.
www.uoc.edu/artnodes
Contact: palsinag@uoc.edu

Stephen Petersen regularly teaches courses in the history of modern and contemporary art at both the University of Delaware and the University of Pennsylvania. His research activities focus on intersections of art, technology and mass culture in the mid-twentieth century. He received his doctorate from the University of Texas in 2001 and is currently in the midst of preparing a book manuscript based on his dissertation, "Space and the Space Age in Postwar European Art: Lucio Fontana, Yves Klein, and their Contemporaries." Contact: petersen@udel.edu

STEVE KURTZ AND THE CRITICAL ART ENSEMBLE

Earlier this year, responding to an investigation of the sudden death of Steve Kurtz's wife Hope Kurtz, the FBI discovered scientific laboratory equipment used for art projects in the home of Steve Kurtz, associate professor of art at the University of Buffalo in New York and a member of Critical Art Ensemble (CAE). Upon their discovery, the FBI invoked the Patriot Act to confiscate Kurtz's equipment and sought charges of bio-terrorism against Kurtz. Several of Kurtz's fellow professors were subpoenaed in the process. In response to the alarming FBI actions against Steve Kurtz and CAE, Leonardo/ISAST sent a letter in support of the artists and encouraging the FBI to drop all charges.

As stated in the letter signed by Beverly Reiser, chair of the Leonardo/ISAST International Advisory Board, "The authorities did have a responsibility to investigate Hope Kurtz's death and the unfamiliar laboratory equipment and living cultures that they found in Kurtz's house. However, authorities crossed the line between making a legitimate mistake and abusing their authority, when, after finding nothing of danger to the public, and no evidence that Kurtz had anything to do with his wife's death, they pressed to convene a grand jury anyway. What does this nightmarish scenario imply for artists? Will artists working at the intersection of art and science or technology live under the constant threat of grand jury investigation, confiscation of their material, potentially huge legal fees and unwarranted intrusion into their private moments?"

In the end, a federal grand jury in Buffalo charged Kurtz with "petty larceny," not bio-terrorism. Also indicted was Robert Ferrell, head of the Department of Genetics at the University of Pittsburgh's School of Public Health, who helped Kurtz to obtain \$256 worth of harmless bacteria for one of Kurtz's art projects.

"There was very obviously no criminal intent," said Kurtz attorney Cambria. "The intent was to educate and enlighten."

See <http://www.caedefensefund.org/> for further background.

** Worldwide Call for Submissions **

LEA Special Issue cfp: Geography of Pain

Guest Editors: Tom Ettinger and Diane Gromala (pain at astn.net)

<http://mitpress2.mit.edu/e-journals/LEA/LEA2004/authors.htm#pain>

As part of Leonardo's ongoing Art and Biology project, the Leonardo Electronic Almanac (ISSN No: 1071-4391) is seeking short texts (with imagery and project URLs) by artists and scientists, or artist/scientist teams, whose work addresses pain in all its forms. Projects of interest include aesthetic works that address subjective experiences, social conditions, and cultural constructions of pain. Projects on the art of healing are of interest as well, especially multidisciplinary approaches that integrate Eastern and Western traditions. We will also consider current health science, computer science, and engineering research relevant to these topics.

LEA encourages international artists / academics / researchers / students to submit their proposals for consideration. We particularly encourage authors outside North America and Europe to send proposals for articles/gallery/artists statements.

This LEA Special is part of a new collaborative initiative on pain management, founded by:

* Tom Ettinger, Yale University, and interim Executive Director, Art & Science Collaborations, Inc.
(<http://www.asci.org>)

* Diane Gromala, Georgia Institute of Technology
(<http://www.lcc.gatech.edu/~gromala>)

* Julian Gresser, Chairman, Alliances for Discovery
(<http://www.breakthroughdiscoveries.org>)

* Roger Malina, Chairman and Editor, Leonardo
(<http://mitpress.mit.edu/Leonardo>)

Interested authors should send:

- A brief description of proposed text (100 - 300 words)
- A brief author biography
- Any related URLs
- Contact details

In the subject heading of the email message, please use "Name of Artist/Project Title: LEA Pain Management - Date Submitted". Please cut and paste all text into body of email (without attachments).

Deadline for proposals: 15 October 2004

Manuscript Submission Guidelines: <http://mitpress2.mit.edu/e-journals/LEA/submit>

Please send proposals or queries to:
Tom Ettinger and Diane Gromala
pain@astn.net

and

Nisar Keshvani
LEA Editor-in-Chief
lea@mitpress.mit.edu
<http://lea.mit.edu>

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LEA WORLD WIDE WEB ACCESS

For over a decade, Leonardo Electronic Almanac (LEA) has thrived as an international peer-reviewed electronic journal and web archive, covering the interaction of the arts, sciences and technology. LEA emphasizes rapid publication of recent work and critical discussion on topics of current excitement. Many contributors are younger scholars and artists, and there is a slant towards shorter, less academic texts.

Contents include Leonardo Reviews, edited by Michael Punt, Leonardo Research Abstracts of recent Ph.D. and Masters theses, curated Galleries of current new media artwork, and special issues on topics ranging from Artists and Scientists in times of War, to Zero Gravity Art, to the History of New Media.

LEA is accessible using the following URL: <http://lea.mit.edu>

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