

A new communication space is growing from a merger of video, computer and telecommunication technologies, coalescing into a system - roughly called the network - searching for its own logic and a cultural, social and political identity. What this space will mean to society is not yet clear, its final content is uncertain, and how it will effect culture open to healthy speculation and necessary experimentation before its final specificity is defined.

*The Souillac Charter, A Framework for Collaboration,  
Souillac, France, 1997*

# GLOBAL THREADS

- a**n international virtual faculty of art and science
- w**ith renowned specialists in both fields exploring and presenting their views of reality
- o**ver the high bandwidth MARCEL network.



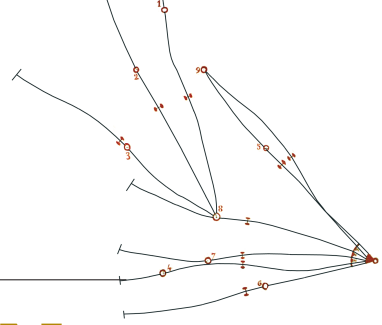
MARCEL : Multimedia Art Research Centres & Electronic Laboratories

Marcel Lecomte

# GLOBAL THREADS

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# INTRODUCTION

## VIRTUAL FACULTY FOR ART AND SCIENCE

A Virtual Faculty for Art and Science is an idea that has been under development for the past several years. It is the culmination of conferences and workshops in Prague, Copenhagen, Souillac, France and Bellagio, Italy and a series of informal conversations among scientists and artists from both sides of the Atlantic interested in using “the network” in new and exciting ways to explore the interface between the two, to approach knowledge from their differing optics and to look for cultural directions in the ensemble of information proposed.

### MARCEL

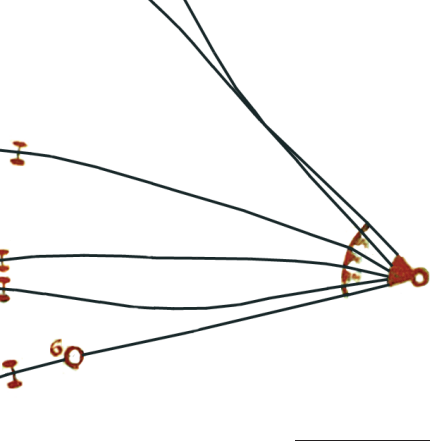
MARCEL is a permanent broadband international interactive network of art, science and technical institutions and laboratories dedicated to artistic, educational and cultural experimentation, exchange between art and science and collaboration between art and industry.

### GLOBAL THREADS:

Global Threads seeks to create distributed, physical-digital environments over the MARCEL network, that bring artists, scientists, and other creative thinkers together for creative explorations of alternative ways of knowing the world – models of reality. These environments will be platforms for evolving prototypes for those concerned with acquisition of knowledge and learning in the contemporary world.

Global Threads will initiate worldwide interaction through a series of events taking place over global networks. Global Threads is dedicated to developing the technology which permits human participation that transcends time, space and culture, and will provide examples of the integrative powers of the new technologies that can bring about the development of new models of learning and understanding.

Global Threads embraces multiple cultures and will welcome the participation of as many people as possible in both structured and non-structured ways. **Our collective human experience is our collective human knowledge.**



# GLOBAL THREADS

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## THE PROJECT

### THEME

While art and science can be seen as two ways of understanding our world, they are actually departure points along a fluid multi-dimensional continuum of knowledge. This includes not only art and science, but also broader connections to culture including religion, politics and economics.

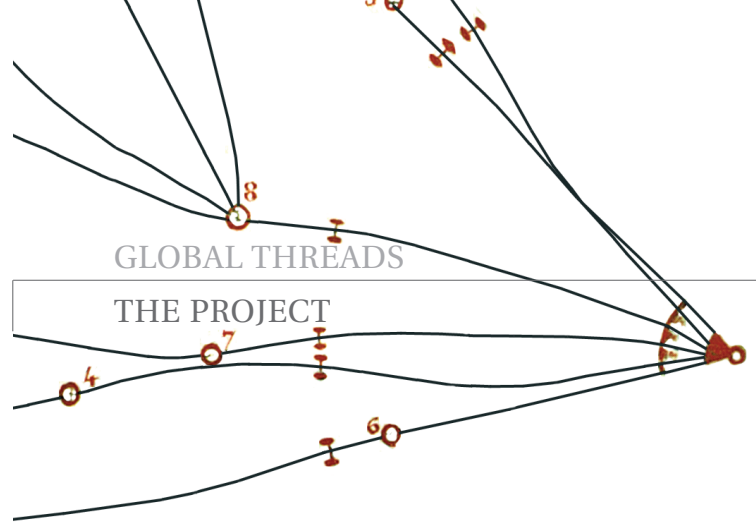
**Initially**, Global Threads will focus on the blurring of the boundary between art and science by presenting events over the course of a year that will feature artists and scientists grappling with the same theme. The selected artists and scientists will not be invited to participate together on the same virtual stage, but to present separately, from each of their points of view, the same topic. By giving a different angle to that topic and both an artistic and scientific approach to it, we expect to open new avenues of understanding of the topic and how it fits into the overall fabric of contemporary society – how these ideas are being absorbed into our culture. Each event will be choreographed by a distinguished thinker – the faculty member – working with a team of colleagues to assist in launching a particular thread. As the threads are revealed, we expect the participating audiences to weave these threads into fabrics that will enable them to better understand the new models being proposed by both.

Central to these events is the classic dichotomy between art and science that has long informed our thinking about the world and the universe, and our place in them. Global Threads not only seeks to explore the potential connections and synergy between art and science, but also to catalyse dialogue between artists and scientists and other creative individuals, and to innovate new and alternative models of knowing more relevant to contemporary intellectual and creative activity.

The connections between art and science over the past 30 years have been central to the development of digital technology. These relationships between art and science have been changed by the very same technologies that fostered them, and the convergence of previously disparate media. There is a compelling need to create new environments to support the development of deeper connections between art and science.

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## EVENTS

Global Threads will use global events designed by what we have elected to call an "event choreographer" to distinguish this effort from that of a media producer. This is a respected individual, the faculty member, who has demonstrated an ability to think creatively and independently. It will be the responsibility of the event choreographer to create a stimulating and significant event that addresses a particular theme or thread going well beyond a presentation of talking heads.

Events are meant as launching points and ideally will be organic and unpredictable. The goal is to engage participants in non-trivial ways in the development of themes. Each event will be supported by a threaded discussion that will be started by the event choreographer. To increase global participation, Global Threads will promote new discussion technologies and systems that will permit mixing of languages, images, sounds and text.

The event choreographer will provide pre-event and post-event suggestions to participants to expand opportunities for involvement. These might take the form of simple exercises, experiments, suggested readings, and similar activities. Global Threads events are expected to stimulate the development of additional events that will continue the evolution of each thread or theme.

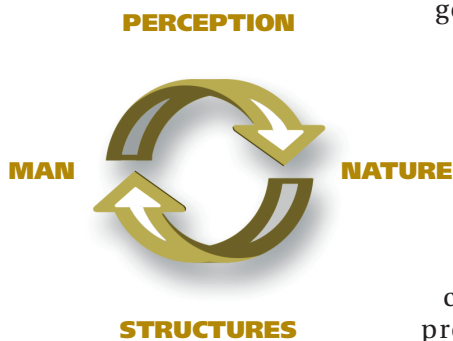
**Events** are meant to be dynamic and spontaneous, much like a good group conversation. Global Threads intends to bring back the voices of the past through the growing number of archives that are now available and produce seamless works that transcend time, space and culture.

Each event will be an expression of the choreographer's mode of reality, i.e., the understanding of how the world works and is known. To support this activity, Global Threads plans to use physical-digital network communications both as a vehicle and a medium. Each choreographer will have the vast resources of a high bandwidth network and distributed, dynamic real-time computing resources. In some cases, a choreographer may choose to make a traditional lecture, but the possibilities are much more varied.

Choreographers could involve interactive simulations with feedback from global participants, or an improvisational multi-modal (music, images, dance, etc.) performance with connections to physical sensing/monitoring devices. In all cases the presentation would in some way involve interaction between the choreographer, his/her team and the event participants. The communication models explored and innovated through these events would exist as examples of the connections between disciplines.



## THEMES AND THREADS



The first year will be an experimental year of several initial events organised by the MARCEL in the US and in the UK with a limited number of topics and presentations. In general, the Global Threads topics will be organised around a thematic breakdown based on four principal headings, *Man, Nature, Perception and Structures*. These four headings are presented here schematically as a cycle demonstrating how we, as different cultures, perceive nature, attempt to understand it by projecting structures onto it which in turn change the way we perceive it. The ever-changing cycle attempts to represent cultural and intellectual evolution and the various presentations will demonstrate contemporary understanding of each heading.

**MAN** is everything concerning the human being,

**NATURE** is everything existing outside the human being,

**PERCEPTION** is how human beings see the relationship between the two,

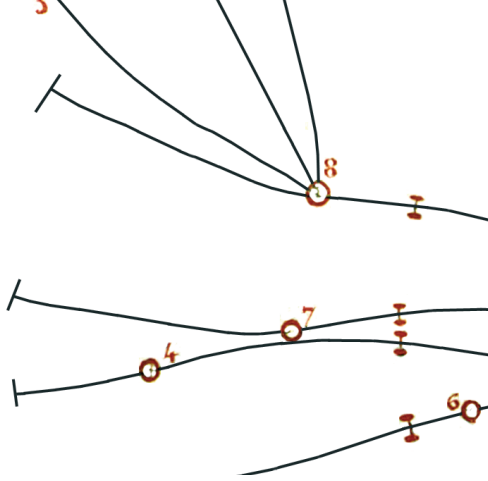
**STRUCTURES** is how human beings understand that relationship.

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## PARTICIPANTS > Audience

Global Threads will start with the connected members of the MARCEL network using the high bandwidth academic networks, Internet 2, in their respective countries permitting active participation in the event. The MARCEL members are principally institutions of higher learning in art, science and technology that have joined together in a cross-disciplinary pursue of cooperation and collaboration (full project with members is available at [www.mmmarcel.org](http://www.mmmarcel.org)).

The MARCEL network, at this point, consists of over 125 institutions in 20 countries of which more than 40 are already operating over the multicasting platform selected. MARCEL, which was launched in 2001, is currently growing at the rate of one new member organisation per week and has started counting participants outside the Atlantic community, beginning with Latin America, Australia and Taiwan and with discussions taking place with institutions in India, Japan and China.



## GLOBAL THREADS

### THE PROJECT

Other people and institutions will be able to participate in Global Thread events on different levels. Those having slower connections to the Internet, will be able to watch without actually participating in the question and answer sessions. The event choreographer will determine the extent and the nature of the interactive participation.

## NETWORK

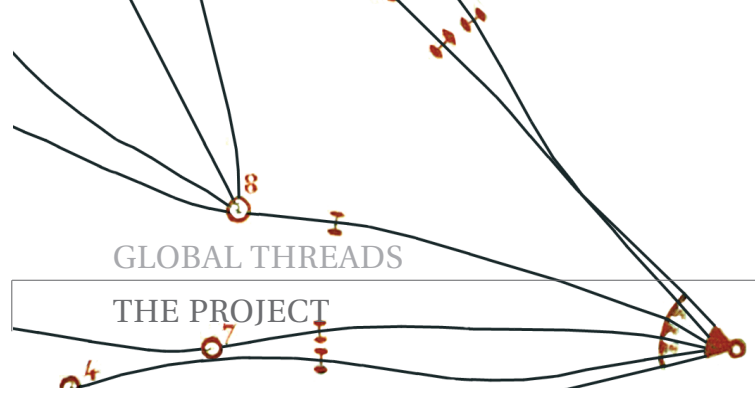
The Global Threads will be transmitted over a multicasting platform, Access Grid, which permits instant interactive contact with several sites and the possible use of multi-screens. This platform has already been used for the pilot projects discussed below.

The platform, initially developed by the Argonne National Laboratory, operates over the interconnected academic research high bandwidth networks. This platform is an extensible form of videoconferencing (in this case better termed 'advanced collaboration environment') and permits the broadcast of multiple video streams from each site, near natural-quality audio and other media. Access Grid is particularly suited to multi-site collaboration



between groups. The MARCEL network already uses Access Grid permitting multi-screen presentations with several levels of support information broadcast simultaneously.

The project aims to go beyond the single screen talking heads presentation most often seen in such efforts, to experiment with total immersion and environmental presentations as a way of fully exploiting the network potential. Communication potential can thus be enhanced to assure maximum effect in the transmission of ideas. This will be a principal goal of the GT project.



## ORGANISERS

The Global Threads project is organised in the US by MARCEL-USA, a non-profit 501.3c corporation based in Maine, Federal ID No. 16-1660394. In the UK the project is directed by MARCEL, Multimedia Art Research Centres and Electronic Laboratories, a registered UK Charity, Company No. 4785771 Registered Main Charity 1101627.

## INSTITUTIONS > Producers

A number of institutions have committed to the project and are collaborating to put it in place:

<b>C</b> enter for Art and Media Technology (ZKM),	Karlsruhe, Germany
<b>C</b> ERN, European Organisation for Nuclear Research,	Geneva, Switzerland
<b>C</b> IAANT, International Center for Art and New Technologies,	Prague, Czech Republic
<b>D</b> aniel Langlois Foundation for Art, Science and Technology,	Montreal, Canada
<b>K</b> ing's College, University of London	London, UK
<b>L</b> eonardo Magazine, ISAST & OLATS,	San Francisco, USA/Paris, Fr.
<b>L</b> ondon School of Economic & Political Science	London, UK
<b>M</b> ARCEL,	London, UK
<b>M</b> ARCEL-USA,	Orono, Maine, USA
<b>U</b> niversity of California at San Diego,	San Diego, Cal., USA
<b>U</b> niversity of Maine,	Orono, Maine, USA
<b>U</b> niversity of Manchester,	Greater Manchester, UK
<b>U</b> niversity of Sussex	Brighton, UK

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These institutions have committed time, effort and people to the development of the project and are participating in the fund raising program to make it happen.





# PEDAGOGICAL SUPPORT

## RESOURCE MATERIAL & DOCUMENTATION OF EVENTS

The faculty presentations will be reinforced through access to contemporary and historical documentation and archival material in art and science. Several institutions are working with the Global Threads project lending their support to the program by making their material available on-line to faculties and students of the member institutions.

Each event will be archived both to preserve an historical record for the benefit of future choreographers and to allow for future dissemination to the global community. The archiving possibilities are presently being discussed with the Daniel Langlois Foundation in Montreal and the Super Computer Center at the University of California at San Diego.

The pedagogical partners will provide additional pedagogical support through advice and materials to increase the overall quality of the on-line presentations and to add extra dimensions to each of the topics covered.

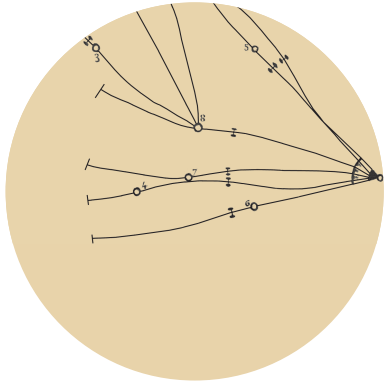
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## **LEONARDO / International Society for the Arts, Sciences and Technology**

Leonardo is the foremost professional organisation addressing the interaction of art, science and technology. Since 1967 it has produced a series of publications including the Leonardo Journal, Leonardo Music Journal and Compact Disk Series, the Leonardo Electronic Almanac (LEA) a peer reviewed electronic journal and the Leonardo Book Series, published in partnership with MIT Press, [www.leonardo.info](http://www.leonardo.info)

Leonardo has embarked on a 5-year Experimental Publishing Project which seeks to evolve the Leonardo publications using currently available technologies to address the needs of younger scholars and artists. Specific initiatives include on line access to all Leonardo archives, development of a pre-print server within LEA, the Leonardo LABS database of thesis abstracts in the art/science/technology field. In addition a collaboration has been established with the Daniel Langlois Documentation and Research Center which now hosts the French Leonardo web site, [www.olats.org](http://www.olats.org)



As part of this proposal the Leonardo Experimental Publishing Project would «cluster» a number of tools and materials to support the Global Threads faculty. These would include thematic bibliographies coupled to on-line on-demand theme packs of relevant literature, scanning and making accessible on line early issues of Leonardo as well as providing publishing support in various Leonardo venues to the Global Threads faculty. The Leonardo Global Crossings project will emphasis making accessible literature in other languages than English.

Leonardo functions through two non-profit organisations: Leonardo/ISAST a San Francisco based 501.3c and Leonardo/OLATS an Association 1901 in Paris, France. Leonardo/ISAST will lead in this proposal, specifically working on the on-line on-demand theme pack development. Leonardo/OLATS is responsible for the collaboration with the Langlois Documentation and Research Center and for non-English literature.

### **DANIEL LANGLOIS FOUNDATION**

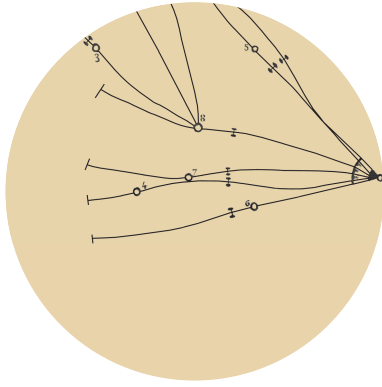
The Daniel Langlois Foundation for Art, Science and Technology operates a Centre for Research and Documentation (CR+D). The CR+D seeks to document history, artworks and practices associated with electronic, digital media arts and makes this information available to researchers in an innovative manner. The CR+D's documentation collection covers the major trends and practices that have emerged in electronic and media arts from the early sixties to today. The collection includes a vast array of documents from several sources. Holdings include archives from groups and individuals concerned with the history and practice of electronic, digital and media arts.

The CR+D's varied documentation includes traditional printed matter (books, catalogues), periodicals, CD-ROMs and other digital material, audio CDs, videotapes, films and slides. Also available are many background files on individuals and groups working in electronic and media arts.

The Foundation is responsible for managing the Electronic Art category of the MARCEL web site which coincides with the pedagogical needs of the Global Threads project. While providing exhaustive information in this field for the MARCEL membership, the CR+D will also supply in depth material about the artistic practices under this category.

### **ZKM**

The Center for Art and Media (ZKM) in Karlsruhe, Germany, holds a unique position in the world as the largest media art centre in Europe dedicated to research and production.



It responds to the rapid developments in information technology and today's changing social structures in its work, combining production and research, exhibitions and events, coordination and documentation. For the development of interdisciplinary projects and promotion of international collaborations, the Center for Art and Media has manifold resources at its disposal: the Museum for Contemporary Art, the Media Museum, the Institute for Visual Media, the Institute for Music and Acoustics and four new departments – the Institute for Basic Research, the Institute for Net Development, the Institute for Media and Economics and the Film Institute.

The Center for Art and Media probes new media in theory and practice, tests their potential with in-house developments, presents possible uses in exemplary form and promotes debates on the form our information society is taking, providing a forum for science, art, politics and finance.

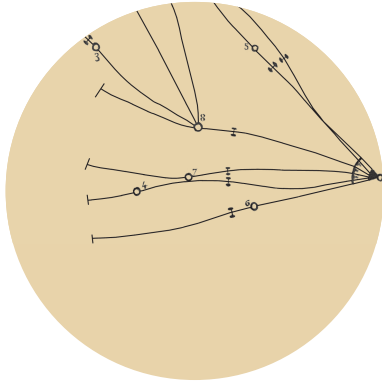
The ZKM efforts support the Global Thread's project in many ways, through its archival material, its very large collection of video art, its production platform and through its own extensive network of contacts and institutions.

## CERN

CERN, Europe's foremost physics research laboratory, will also make selections from its existing archives and audiovisual collection of conferences and presentations by resident and visiting scientists available to the Global Threads participants. The material will be repackaged by artists to make the scientific material more readily accessible on a regular basis over the high bandwidth academic networks. It will be communicated in an interactive way permitting a dialogue between artists and scientists as well as an exposure to complex scientific ideas. The same material will be available to a larger audience and more general public over lower bandwidth networks.

The central idea is that it is more interesting to acquire knowledge, to open people to complex ideas, to understand scientific concepts, once they are expressed in a clear language, well illustrated and demonstrated, all in an attractive imaginative manner. In this area the interaction of Art and Science comes into play and takes on an important sense in the mediation of scientific ideas, not through stereotypical images, but through a sensitive approach using different procedures and tools developed by multimedia artists as well as through artistic examples to underscore world views parallel to the scientific ideas.

Requests for funding for this aspect of the project are already before funding bodies in the US, UK and the EU.



## **Pedagogical Evaluation**

The development period for Global Threads will include an on-going pedagogical evaluation of its effectiveness. The goal of the pedagogical evaluation is to create a resource for the event choreographers and for the entire MARCEL network as a guide in structuring effective events as the project goes forward. The evaluation will include the following:

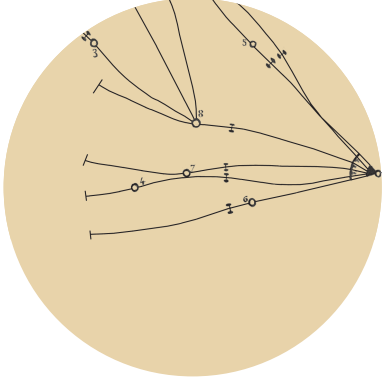
1. To collect and report participants' reactions to the events
2. To analyze how expectations align with actual outcomes both for the event choreographers and the participants
3. To design appropriate evaluation instruments for each event
4. To evaluate the pedagogical strengths and weaknesses of the event based on participants' feedback and make reports based on those findings
5. To meet periodically with appropriate MARCEL staff to review and make any necessary changes to the evaluation or reporting process.
6. To report findings to the Board as requested

It is expected that, as the project goes forward, these functions will evolve to meet the needs of the program.

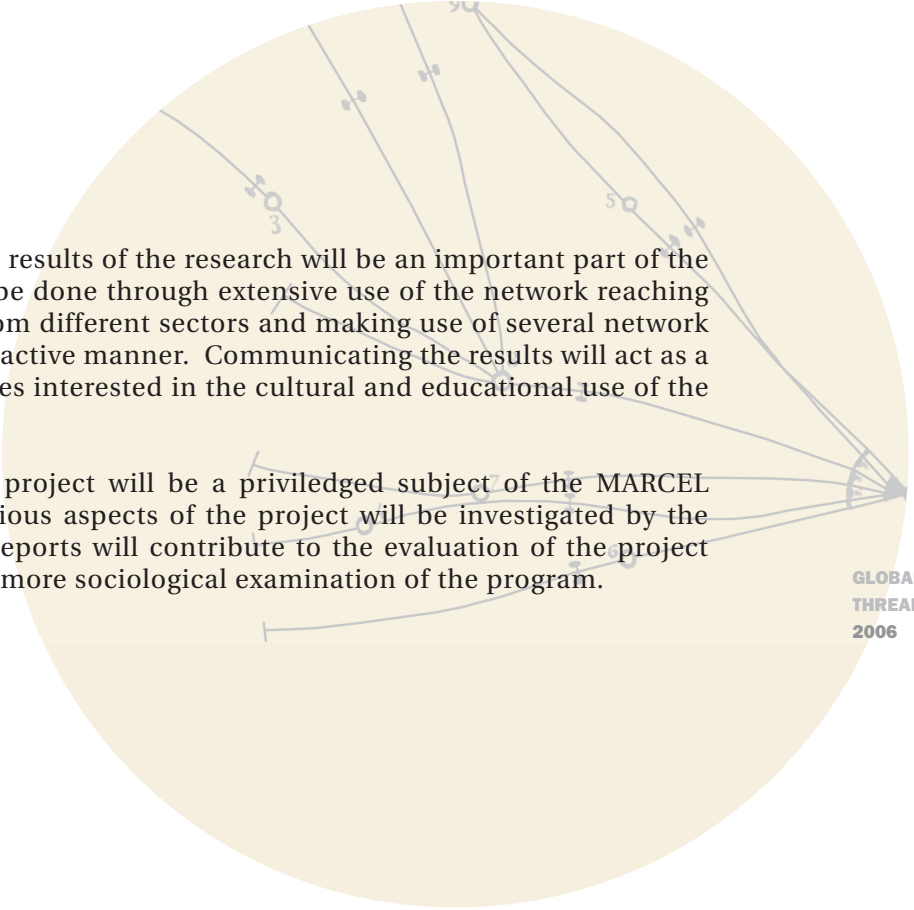
## **MARCEL Observatory**

The MARCEL Observatory, created by the London School of Economics and Political Science and MARCEL, has as its objective observing and analysing the activities of the MARCEL network and, by extension, the high bandwidth network in general, and to report on network innovation in technological development and social usage, in archiving, online education and in the evolving situation in artists' rights.

The Observatory began on October 1, 2005 and is presently staffed by one PhD researcher reporting on technical and sociological innovation resulting from artists' use of the network. The eventual goal is to provide for second, third and fourth researchers in the areas of archiving, online education and authors' rights to report on all aspects of innovation emerging from that experimentation and activity and to make that information available to the MARCEL membership and a professional public.



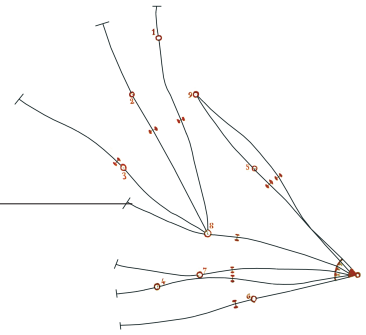
Dissemination of the results of the research will be an important part of the Observatory. It will be done through extensive use of the network reaching diverse audiences from different sectors and making use of several network technologies in a proactive manner. Communicating the results will act as a bridge to communities interested in the cultural and educational use of the network.



The Global Threads project will be a privileged subject of the MARCEL Observatory and various aspects of the project will be investigated by the Observatory whose reports will contribute to the evaluation of the project and provide another more sociological examination of the program.

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# STARTING UP



## FACULTY > First Year

The first-year faculty for the Global Threads project comes mainly from the Bellagio Conference on Art and Science (see below). Initial discussions following that conference have produced the first board outlines of some of the topics to be included and the people involved. The first pairings of an artist and a scientist and their topic are presented here with those people already committed to the project and the first experimental year:



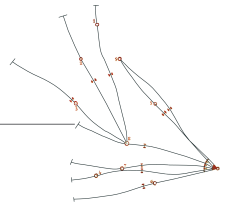
**Benoit Mandelbrot**, mathematician, Sterling Professor of Mathematic Sciences, Yale University, inventor of fractal geometry, Boston Mass., USA

**Jean-Claude Risset**, composer, professor, Stanford University, director of researcher at the French National Centre for Scientific Research, Marseilles, France, winner of the CNRS Gold Medal, founding member of IRCAM, Georges-Pompidou Centre, Paris, France

Topic: **Structures in Nature**. How the new geometry describes nature in a more precise way and how in parallel the same structures exist in the work of contemporary artists researching new frameworks for their creation.

These were the subjects of the first pilots and will continue to be part of the first year's program.

## STARTING UP



**Tor Norretranders**, Denmark's leading science writer, author of "The User Illusion, Cutting Consciousness Down to Size", host of numerous television programmes on science and art and science topics. Copenhagen, Denmark

**James Turrell**, Artist, whose work involves explorations in light and space impacting the eye, body, and mind with the force of a spiritual awakening, and allows us to see ourselves "seeing." Recipient of awards such as Guggenheim and MacArthur Fellowships. Arizona, USA.

Topic: **Perception**. The mechanics of perception determine how we see the world in front of us in ways not always obvious. Much has been learned about the operation of our perception in recent years and the way our mind often fools us into thinking we are seeing something that really isn't there.

**Margaret A. Boden**, Professor Emeritus of Philosophy and Psychology at the University of Sussex, Fellow of the British Academy and the American Association for Artificial Intelligence. Brighton, UK

**Vaclav Havel**, Playwright, dissident, leader of the Velvet Revolution, former President of the Czech Republic. Prague, Czech Republic

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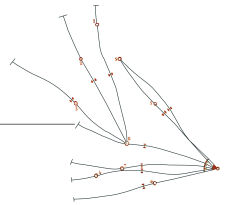
Topic: **Sources of Creativity**. What makes us creative? What are our sources of inspiration? Is creativity shared by all people and professions? Creativity has become one of the frontiers of intellectual exploration today as societies try to understand and promote it.

**Anton Zeilinger**, physicist, Institut für Experimentalphysik, University of Vienna, Member, Austrian Academy of Sciences, Fellow of the American Physical Society, Member of the Academia Scientiarum et Artium Europaea. Vienna, Austria

**Peter Weibel**, Director, ZKM, Zentrum für Kunst und Mediatechnologie, Karlsruhe, Germany, Artistic Director, Ars Electronica, Linz and Austrian Commissioner for the Venice Biennale in 1993. Karlsruhe, Germany

Topic: **Observer and Observation**. An approach to understanding reality through the role of observation in both art and science throughout the 20th century.

## STARTING UP



**Jon McCormack**, lecturer in Computer Science, Monash University, Melbourne, Australia. Research interests include generative modelling approaches to image and sound synthesis particularly using L-systems and graph grammars. Melbourne, Australia.

**Richard Brown**, artist, former research fellow, Royal College of Art, London and Honorary Senior Research Fellow, Victorian College of Arts, Melbourne, Australia, a NESTA fellow pursuing art base inquiry into mimetics, technology and consciousness research. Edinburg, Scotland

Topic: **Artificial Life, Artificial Reality**. Artificial Life and Artificial Reality are concerned with the task of creating computer based illusions of Life and Reality while also exploring the science, psychology and philosophy of how Life and Reality may actually function. A- Life and A-Reality enquiry may thus be seen as representing a synthesis of the duality between empiricism and subjectivity.

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Other faculty members committed to the project:

**Ralph Abraham**, Professor of Mathematics at the University of California at Santa Cruz since 1968, founded the Visual Mathematics Project in 1975 which became the Visual Math Institute in 1990, Santa Cruz, Cal., USA

**Ron Burnett**, President, Emily Carr Institute of Art and Design, Vancouver, Canada

**Patrick Clancy**, Chair of Photography & New Media, Kansas City Art Institute, Photography & New Media Department, Kansas City, Missouri, USA

**Seymour Papert**, Emeritus, Massachusetts Institute of Technology, founder, with Marvin Minsky, of the Artificial Intelligence Lab., developed the concept for computer language, LOGO, a founding member of the Media Laboratory at MIT, Blue Hill, Maine, USA

**Sidney Perkowitz**, Candler Professor of Solid Matter Physics at Emory University, Texas, author of "Empire of Light" and the recent, "Universal Foam: From Capuccino to the Cosmos"

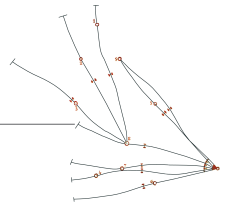
**Linda D. Henderson**, David Bruton, Jr. Centennial Professor at the University of Texas at Austin, and author of "Duchamp in Context" and "The Fourth Dimension and Non-Euclidean Geometry in Modern Art"

**Roger F. Malina**, astronomer and space scientist, French National Center for Scientific Research and the University of California, Berkeley, editor in chief, Leonardo Magazine

**Rejane Spitz**, electronic artist and Chair of the Art Department at the PUC RIO University, Rio de Janeiro, Brazil.



## STARTING UP



## TIMETABLE

The project has been designed to be self-sustaining within 5 years. A separate budget detailing revenues and expenses, is attached. Year 1 will be a preparatory year including 5 events and 10 speakers. During this year the interface will be created with the archives of the pedagogical partners and will continue throughout the project. Year 2 will be a production year, which will include 6 events and 12 speakers, with the additional pedagogical support in place. Years 3 and 4 will see the full 9 event program including 18 speakers. At the end of year 5 we expect the Global Threads project to have a minimum of 150 subscribing institutions covering its minimal costs.

By the end of the first year, we expect to have produced the first series of broadcasts, the beginning of a pedagogical program, a series of documents that help event choreographers assemble their events taken from the first year's experiences – an operations manual, the beginning of the interactive participatory network and the start of the Global Threads archives. This will be followed by much more ambitious second through fifth years in terms of the number of lectures proposed.

### **Year 1, Prototype Program, 2007-08**

- Creating program & experimenting
- Building the technical interface
- Developing partnerships
- Prototype construction
- Pedagogical development

### **Year 2, Preliminary Program, 2008-09**

- Enlarge the faculty
- Enlarge the network
- Pedagogical support in place
- Debugging

### **Year 3, Full program, 2009-10**

### **Year 4, Full program, 2010-11**

### **Year 5, Full program, 2011-12**

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A Virtual Faculty Project of Art and Science

Paris/ Manchester/ Maine/ Salford/  
Helsinki/ Karlsruhe/ Wimbledon

Sylvia Eckermann, Mathias Fuchs,  
Paul Sermon (Production Team: Salford)

Don Foresta (Marcel: Paris)

Mike Daw (Access Grid: Manchester)

Peter Cahill, Nicolas Billot, Julien Bloit,  
Olivier Lescurieux (IROAM: Paris)

Video © 2003  
Paul Sermon, fuchs-eckermann



20 October 2003

Live from IRCAM, Paris

Jean-Claude Risset (Composer, Marseille):  
"History and Interests  
of the Instrument-Computer Interaction"

Jean-Claude Risset (Composer, Marseille):  
"History and Interests  
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A Virtual Faculty Project of Art and Science

Paris/ Manchester/ Maine/ Salford/  
Helsinki/ Karlsruhe/ Wimbledon

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Don Foresta (Marcel: Paris)

Mike Daw (Access Grid: Manchester)

# THE PILOT

The first pilots were with Benoit Mandelbrot, the inventor of fractal geometry for the science side and Jean-Claude Risset, the composer whose experiments in computer related composition are internationally known, for the art side. They were produced in November 2002, December 2002 and October 2003 financed through a grant from the Arts Council of England. The pilots were a beginning in the research and development of the Global Threads format that will eventually be used for other speakers.



Based on the work done during this phase, further development has been started under ALTERNE, a project funded by the European Commission for the development of artistic tools for the high bandwidth network. That project, based at the Wimbledon School of Art, will combine Access Grid multicasting possibilities with the virtual space of gaming engines to provide a multi-dimensional space for the presentation of the Global Thread faculty events. That first phase was completed within the context of the ALTERNE program, a 30-month, € 1.6 million project, with its first results available at:

<http://www.alterne.info>

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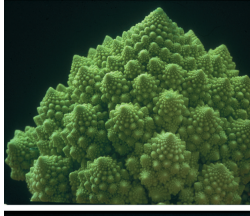
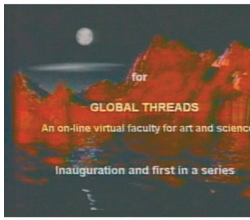
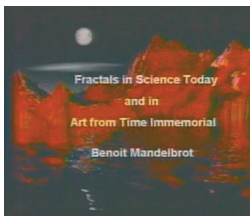
## PILOT PRODUCTION EVENTS & TEAMS

### Benoit Mandelbrot , November 8, 2002

The event with Benoit Mandelbrot was transmitted from the Public Television station in Portland, Oregon to the University of Maine where it was sent out over the MARCEL network in several formats, Access Grid, H320, H322 and video streaming over the web. The event was broadcast during a conference organised by the London Institute, the CERN and the Gulbenkian Museum in Lisbon for European Science Week. The full broadcast can be seen at the following address:

<http://www.souillac.org/projects/videostream.html>

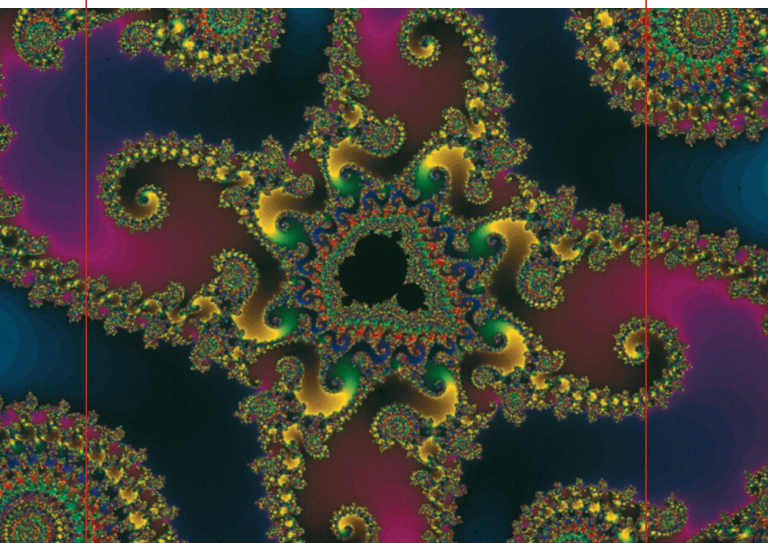


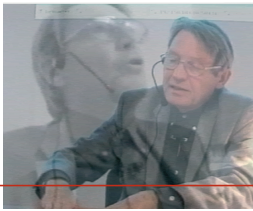
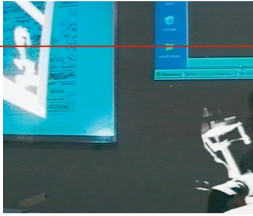
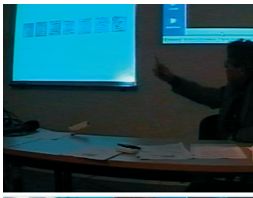


## THE PILOT

The production team consisted of the following artists, computer and network specialists for the pilot faculty member:

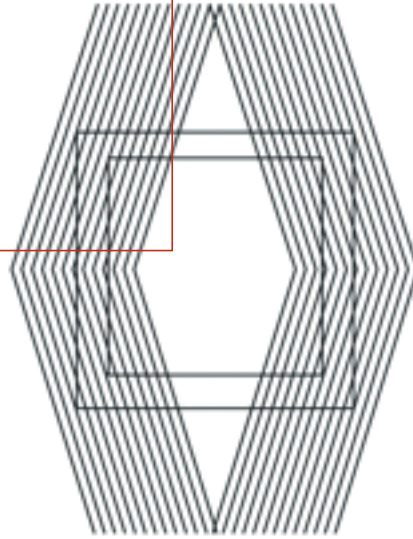
- 1. Mike Scott**, Director, New Media Internet Technology Laboratory, University of Maine, Orono, USA
- 2. Nigel Lesmoir-Gordon**, independent filmmaker, specialist in scientific documentaries, London, UK
- 3. Tim Jackson**, Professor in film and video, School of Image Art, Ryerson University, Toronto, Canada





## THE PILOT

**Jean-Claude Risset, December 2, 2002  
& October 21, 2003**



Two events were produced with Jean-Claude Risset, the first from the Université de Provence in Marseille on December 2, 2002 and the second, from IRCAM, Centre Georges-Pompidou in Paris on October 21, 2003. The same production team worked on both projects with the composer.

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- 1. Mathias Fuchs**, former Visiting Professor for Music and Media Studies at Sibelius Academy, Helsinki, Lecturer at Applied Arts University in Vienna, Senior Lecturer and Course Leader in Creative Technology, University of Salford, Manchester, UK
- 2. Sylvia Eckermann**, Digital Artist and Lecturer, Sibelius Academy, Helsinki, Finland
- 3. Paul Sermon**, Reader in Creative Technology, University of Salford, Research Centre for Art and Design, Manchester, UK

<http://www.souillac.org/projects/videostream-risset.html>

# THE HISTORY



## **SOUILLAC**

*Participants at Souillac II, July, 1998*

Souillac is a small town in the Périgord region of southern France where a series of meetings have taken place over the last several years to discuss interactivity, the nature of “the network” in a generic sense, its role in art and education with the intention of developing a cultural strategy for network expansion in those fields.

The first meeting took place in July 1997 when a group of international experts from art and industry agreed on the importance of fundamental artistic research in the development of telecommunication networks. The need for collaboration between artists, artistic establishments and the public and private sectors in building a permanent high bandwidth network for artistic experimentation was elaborated. At that time a first document, a charter for art and industry collaboration in the development of the network, was written up, presented at the International Telecommunication Union in Geneva and published in Leonardo magazine.

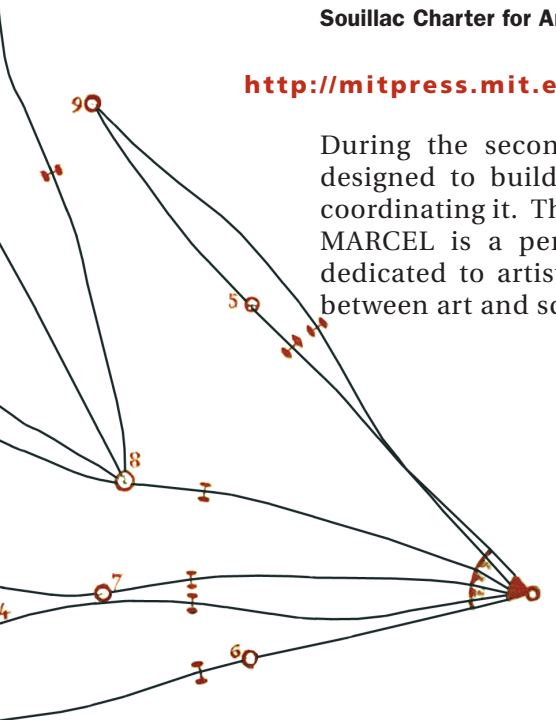
### **Souillac Charter for Art and Industry (Souillac I)**

<http://mitpress.mit.edu/e-journals/Leonardo/isast/articles/souillac/souillac.html>

During the second meeting in Souillac one year later, a program was designed to build a network as well as a portal site for organizing and coordinating it. That decision marked the beginning of the project MARCEL. MARCEL is a permanent broadband interactive network and web site dedicated to artistic, educational and cultural experimentation, exchange between art and science and collaboration between art and industry.

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Other projects were proposed as well at that time, the creation of an on-line art and science virtual faculty, a project addressing the question of author's rights on-line and the creation of a large-scale art exhibition demonstrating the impact of artists in the evolution of communication technology.

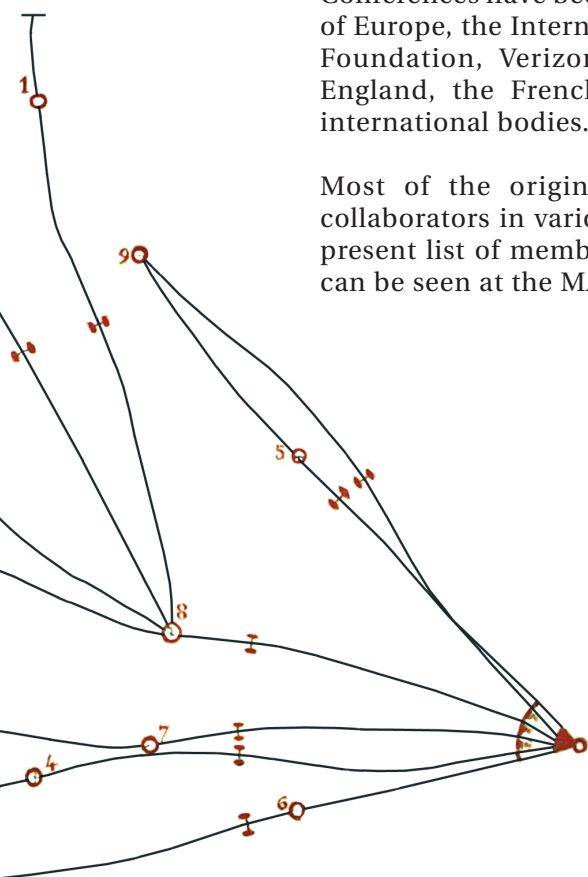
### The Souillac Report (Souillac II - Projects)

<http://mitpress.mit.edu/e-journals/Leonardo/isast/articles/souillac/malvy.html>

A third meeting was held in Souillac in the summer of 2000, elaborating further the various projects and setting up programs for realizing them, including Global Threads, the subject of this paper. Since then, each project has received initial support, and the network component, MARCEL and the portal site, have actually begun operating.

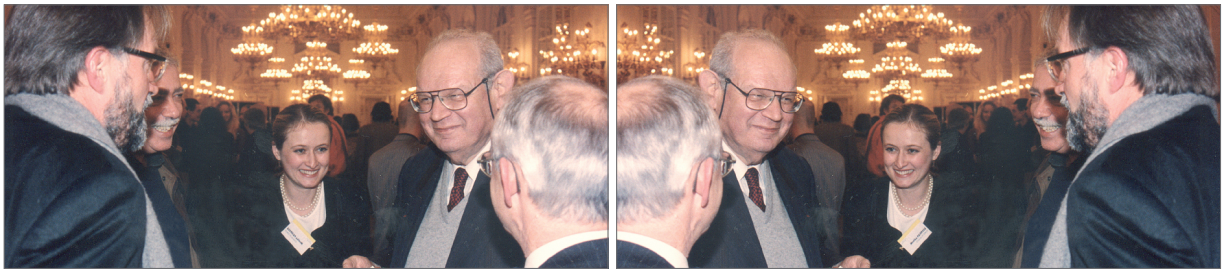
Dozens of participants from 10 countries in Europe and North America have taken part in the Souillac Conferences and the development of the projects proposed. These projects have been the product of extensive debate and on-going discussions among people closely involved in all aspects of network development and use. They are the result of a long collective experience based on technical and industrial development, artistic practice and educational and pedagogical planning and programming. The Souillac Conferences have been supported by the European Commission, the Council of Europe, the International Telecommunication Union, the Daniel Langlois Foundation, Verizon, the Telefonica Foundation, the Arts Council of England, the French Ministry of Culture and other governmental and international bodies.

Most of the original Souillac participants have stayed on as active collaborators in various projects while many others have joined since. The present list of members represents over 80 institutions in 17 countries and can be seen at the MARCEL site at [www.mmmarcel.org](http://www.mmmarcel.org).



**THE PRAGUE CONFERENCE**

**Space for Culture and Society > new ideas in science and art**



*Benoit Mandelbrot, Monika Pajerova, Don Foresta & Raymond Weber in the Presidential Palace*

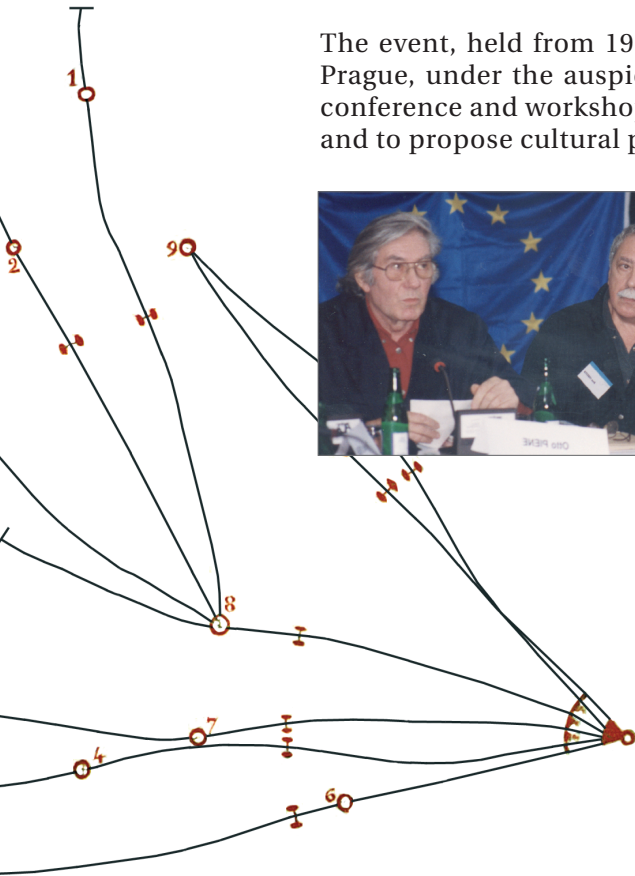
The five-day conference on new ideas in art and science was held for specialists from several countries in the fields of art, science, philosophy and sociology with the objective of discussing some of the major directions in art and science with practitioners in various fields, particularly those concerned with the fundamental transformations taking place in certain areas of knowledge and the effect of those changes on contemporary culture and society.

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The event, held from 19 to 23 November 1996 in the Presidential Palace of Prague, under the auspices of President Vaclav Havel, was a cross between conference and workshop in an attempt to grasp the meaning of the changes and to propose cultural policy directions promoting their positive evolution.



*John Wyver, Don Foresta & Otto Piene at the podium of the Prague Conference.*



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The conference covered:

**(i) Art and Science:** Our two modes of experimentation, deriving an order from things observed, have proposed in the modern era a New Renaissance: science, by inventing a new space, and art, by prefiguring that space and making it habitable and part of the human experience.

**(ii) Fractal Geometry & Chaos Theory:** The mathematical and scientific discoveries confronting us today, the continuation of the century's scientific revolution, play an important part in the new description of space and spatial organisation being proposed, with profound consequences for society.

**(iii) The New Technologies:** The technical products of the 20th century's scientific revolution have become the tools of the cultural transformation implicit in that revolution, building and defining a new mental space for Western civilisation.

**(iv) The socio-political and cultural implications:** The reorganisation of society and culture is heavily influenced by the role of communication and the media, and their interface with artistic creativity defines a potentially new cultural dynamic, particularly important for all countries in Europe as changing political, economic and technological circumstances force countries to redefine their societies and the needs and responsibilities of the individual citizen.

An important conclusion of the Conference was further encouragement of the interface and cooperation between art and science, the continuation of the dialogue begun and support to initiatives where that dialogue already exists, as an essential part of the research into the future of Western civilisation. The idea of a virtual faculty for Art and Science was broached at this conference.

<http://archives.cicv.fr//council/index.html>





### **BELLAGIO CONFERENCE ON ART & SCIENCE**

A meeting between artists and scientists was organized by Benoit Mandelbrot, Sterling Professor of Mathematical Science at Yale University and inventor of fractal geometry and Don Foresta, Senior Research Fellow at the Wimbledon School of Art, London and one of the authors of the Global Threads project, at the Rockefeller Foundation Conference Center in Bellagio in November 2001. The objective of the conference was to discuss and attempt to define the relationship between art and science and create an opening for further analysis, dialogue and collaboration.

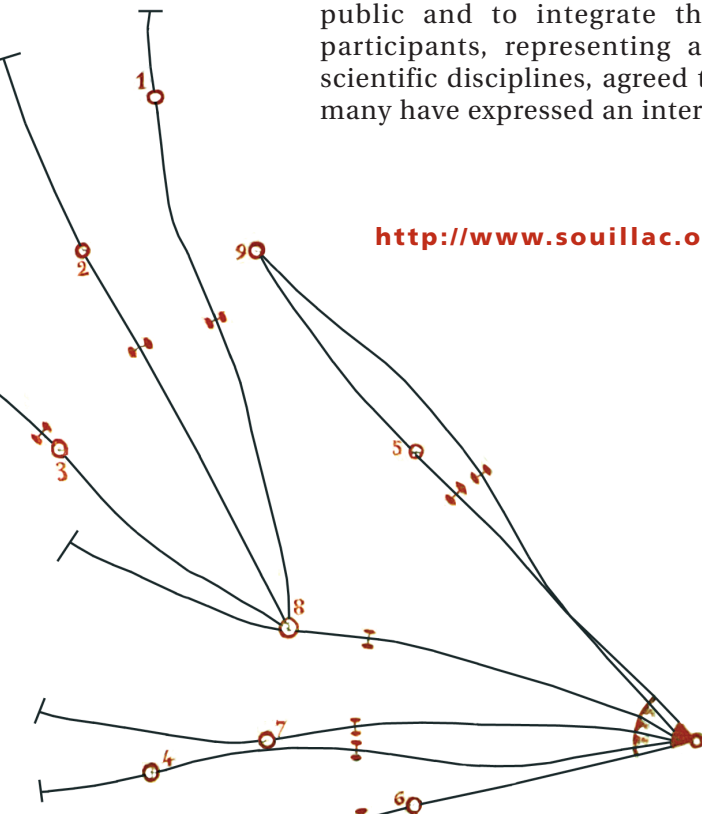
The conference exposed three avenues of interface between art and science:

- 1.** art and artists influenced by the discoveries of science, by scientific descriptions of nature, by the technologies evolving from scientific discoveries
- 2.** similar philosophical approaches among artists and scientists, the parallel world views and definitions of reality proposed by artists and scientists and propositions regarding how things work evolving from the collective efforts in both fields
- 3.** how creativity works for both artists and scientists and the similarities involved in the creative work process

Global Threads will address all three areas in its content and in the choice of faculty members.

The need for continuing dialogue was expressed at the conference, as well as the possibility of creating an on-line faculty to bring the debate to a larger public and to integrate the discussion into various curricula. The participants, representing at the highest levels of several artistic and scientific disciplines, agreed to continue the discussion in various fora and many have expressed an interest in being part of the on-line faculty as well.

<http://www.souillac.org/bellagio/annexa.html>



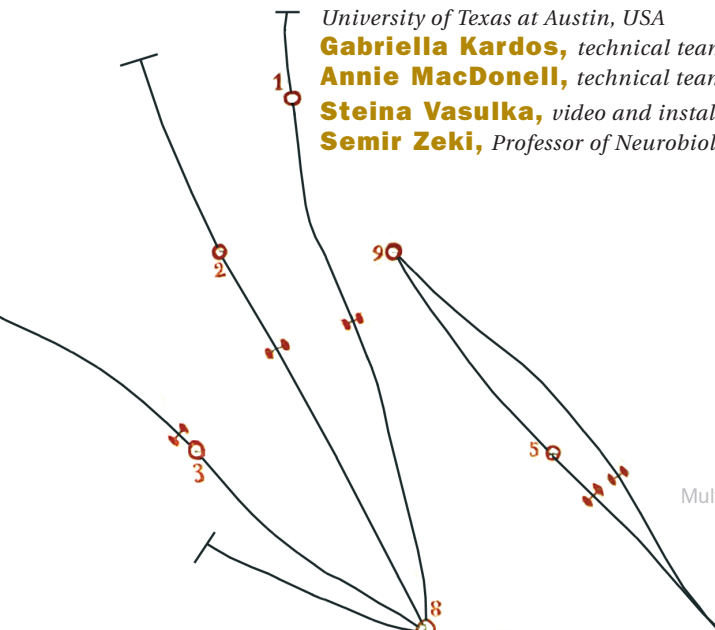


Back row, left to right:

- Naren Barfield**, Director of Research, Wimbledon School of Art, UK, rapporteur
- William Furlong**, former Director of Research, Wimbledon School of Art, London, UK
- Don Foresta**, Senior Research Fellow, Wimbledon School of Art, UK, organiser
- Peter Weibel**, Director, ZKM, Karlsruhe, Germany
- Anton Zeilinger**, Institute for Experimental Physics, University of Vienna, Austria
- Michael Berry**, H.H.Wills Physics Lab., University of Bristol, UK
- Margaret A. Boden**, Professor of Philosophy and Psychology, University of Sussex, UK
- Benoit Mandelbrot**, Sterling Professor of Mathematical Sciences, Yale University, USA, organizer
- Richard Brown**, artist, London, UK.
- Allan Walker**, Vice-Principal for Academic Affairs, Wimbledon School of Art, UK, rapporteur
- Tor Norretranders**, writer, lecturer, consultant, art/science, Copenhagen, Den.

Front row, left to right:

- Alex Geddis**, technical team, Canada
- Marlene Dumas**, South African born painter, Amsterdam, NL
- Barbro Johansson**, neurologist, Wallenberg Neuroscience Center, University Hospital, Lund, Sweden
- Felice Frankel**, photographer, Massachusetts Institute of Technology, Edgerton Center, USA
- Linda Dalrymple Henderson**, David Bruton, Jr. Centennial Professor in Art History, University of Texas at Austin, USA
- Gabriella Kardos**, technical team, UK
- Annie MacDonell**, technical team, Canada
- Steina Vasulka**, video and installation artist, Santa Fe, New Mexico, USA,
- Semir Zeki**, Professor of Neurobiology at University College, London, UK



# THE PEOPLE

## GLOBAL THREADS COORDINATING COMMITTEE

The Coordinating Committee formed from the Souillac meetings was responsible for the initial design of the Global Threads project and was included of the following people:

**Gudrun Bielz**, G.I.F.T., Wimbledon School of Art, London, UK

**Richard D. Brown**, former Research Fellow, Royal College of Art, London, UK, NESTA Fellow and Honorary Senior Research Fellow at the Victorian College of Arts

**Don Foresta**, Senior Research Fellow, Wimbledon School of Art, London, UK, international coordinator of the MARCEL project, professor at the Ecole Nationale Supérieure d'Arts, Cergy/Paris

**Gerald O'Grady**, formerly Director, Center for Media Study, SUNY at Buffalo and Fellow at W.E.B. Du Bois Institute for Afro-American Research and Department of Afro-American Studies, Harvard University, Researcher in Residence, Langlois Foundation

**George Markowsky**, Chair, Dept. of Computer Science & Dept. Of Mathematics, Univ. of Maine, Orono, Maine, USA

**Peter Rottmann**, Souillac Group, Orono, Maine, USA

**Vibeke Sorensen**, Chair, Div. of Animation & Digital Arts, School of Cinema-Television, University of Southern California, Los Angeles, California, USA

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## MARCEL-USA, BOARD OF DIRECTORS

**Peter Thibeault**, President, Delphi Global Services, Boston, Mass., USA

**Michael Scott**, Director, Internet Research Laboratory, Univ. of Maine, Orono, Maine, USA

**Owen Smith**, Director, New Media Program, Univ. of Maine, Orono, Maine, USA

**Bill Seretta**, President, Learning Networks, LLC, Portland, Maine, USA

**Gerard Tassel**, Principal, Tassel & Associates - Bangor, Maine USA, French Foreign Trade Councilor

**Don Foresta**, International Coordinator, MARCEL Project, Visiting Research Associate, London School of Economics & Political Science, London, UK

## Honorary Board

**Michael Doser**, Experimental Physics Division, CERN, European Organization for Nuclear

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## THE PEOPLE

**Bronac Ferran**, Interdisciplinary Arts Department, Arts Council England. London, UK

**Jean Gagnon**, General Director, Daniel Langlois Foundation for Art, Science & Technology, Montreal, Canada

**Linda Dalrymple Henderson**, David Bruton, Jr. Centennial Professor in Art History, University of Texas at Austin, Austin, Texas, USA

**Tor Norretranders**, Science Writer, Copenhagen, Denmark

**Gerard O'Grady**, formerly Director, Center for Media Study, SUNY at Buffalo and Fellow at W.E.B. Du Bois Institute for Afro-American Research and Department of Afro-American Studies, Harvard University, Researcher in Residence, Langlois Foundation, Boston, Mass.

**Woody Vasulka**, Artist, Santa Fe, New Mexico, USA

**Peter Weibel**, Director, ZKM, Karlsruhe, Germany

### MARCEL, BOARD OF TRUSTEES

**Jonathan Barton**, media/telecom consultant, advisor to EUTELSAT, UK & France

**Margaret A. Boden**, Professor of Philosophy and Psychology at the University of Sussex, Fellow of the British Academy and the American Association for Artificial Intelligence. Brighton, UK

**Colin Cina**, Prof. of Fine Arts, former head of Chelsea School of Art & Design, Chelsea-Millbank Special Projects, London Institute, London, UK

**Don Foresta**, International Coordinator, MARCEL Project, Visiting Research Associate, London School of Economics & Political Science, London, UK

**Jean-Claude Risset**, Composer and head of the Laboratoire de Mécanique et d'Acoustique, CNRS, Marseilles, France

### EXECUTIVE:

Executive Director, **Don Foresta**, London, UK

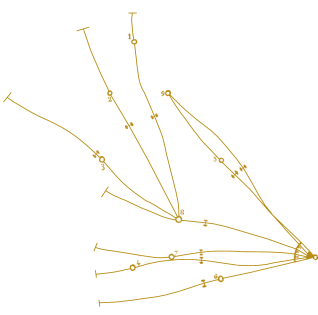
Associate Director, **Michael Scott**, Orono, Maine, USA

### CONTACTS:

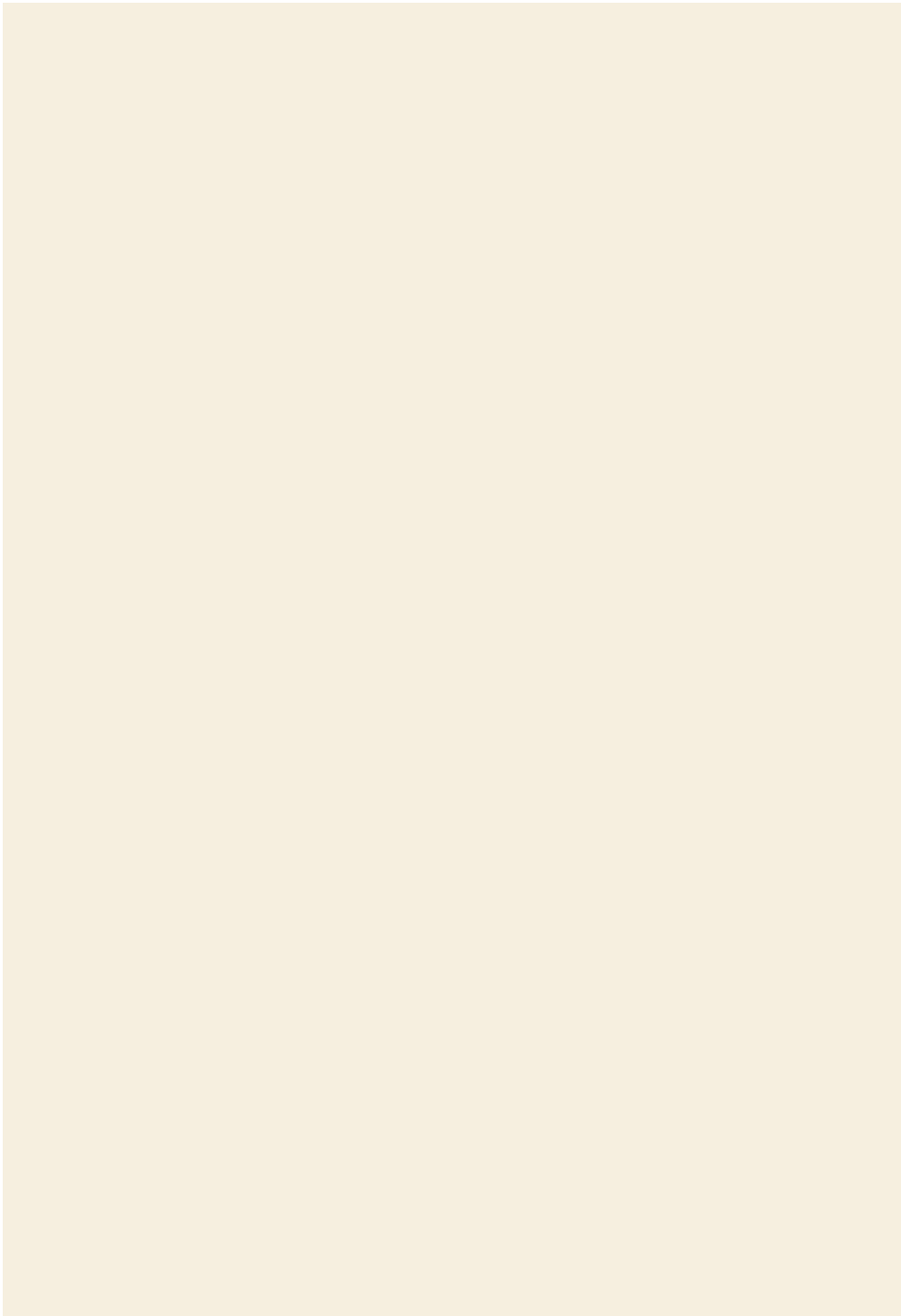
UK, **Don Foresta**, don@donforesta.net

US, **Michael Scott**, mscott@umit.maine.edu

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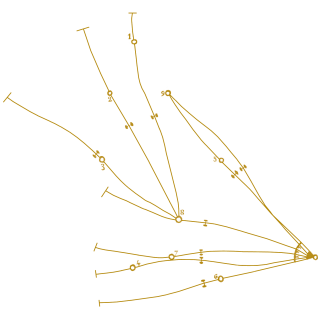


# FIVE-YEAR BUDGET

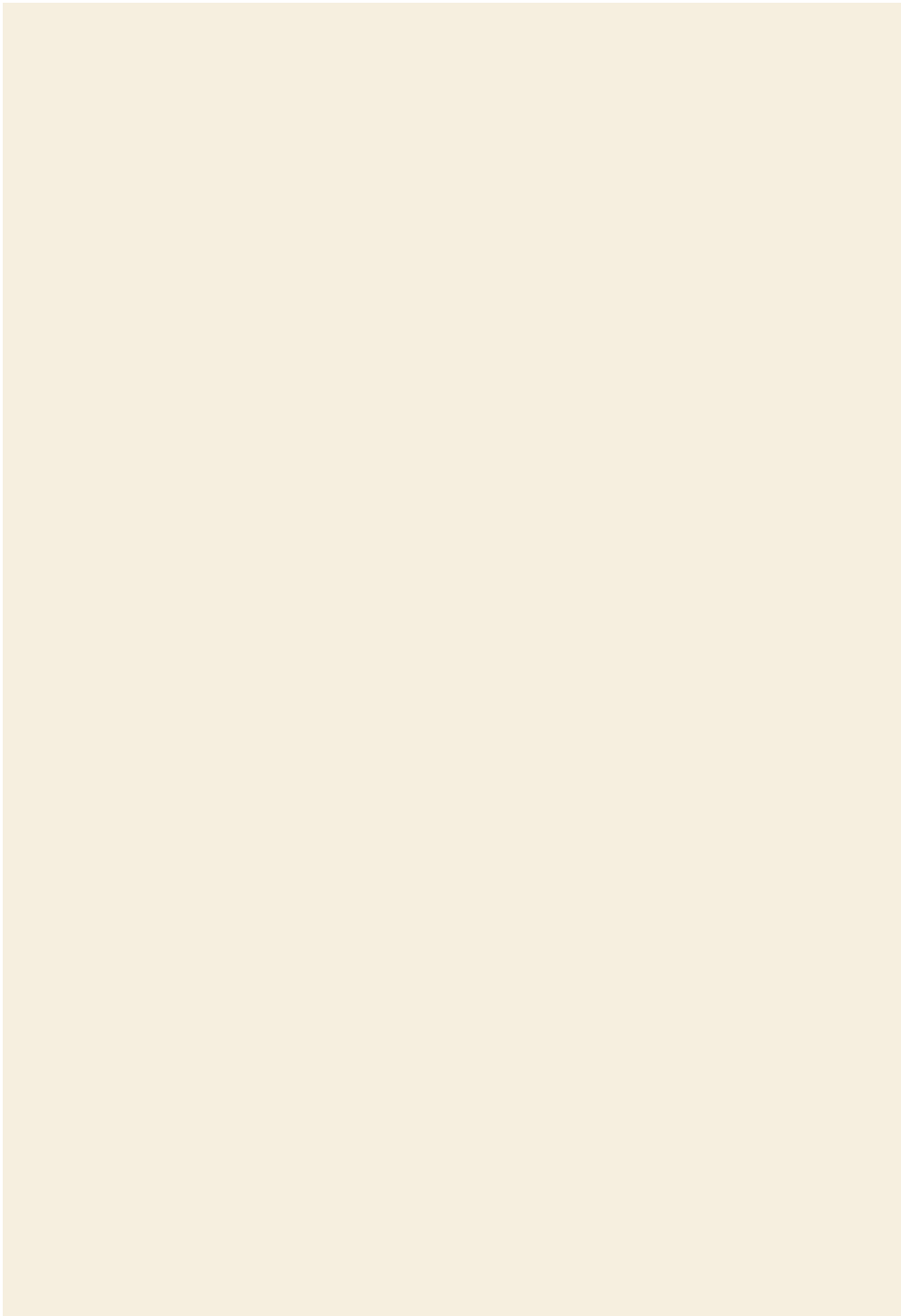


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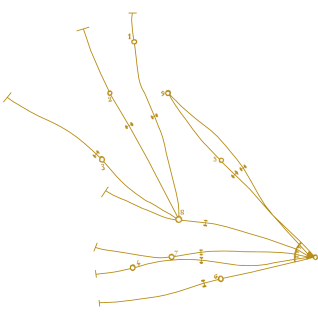


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BUDGET

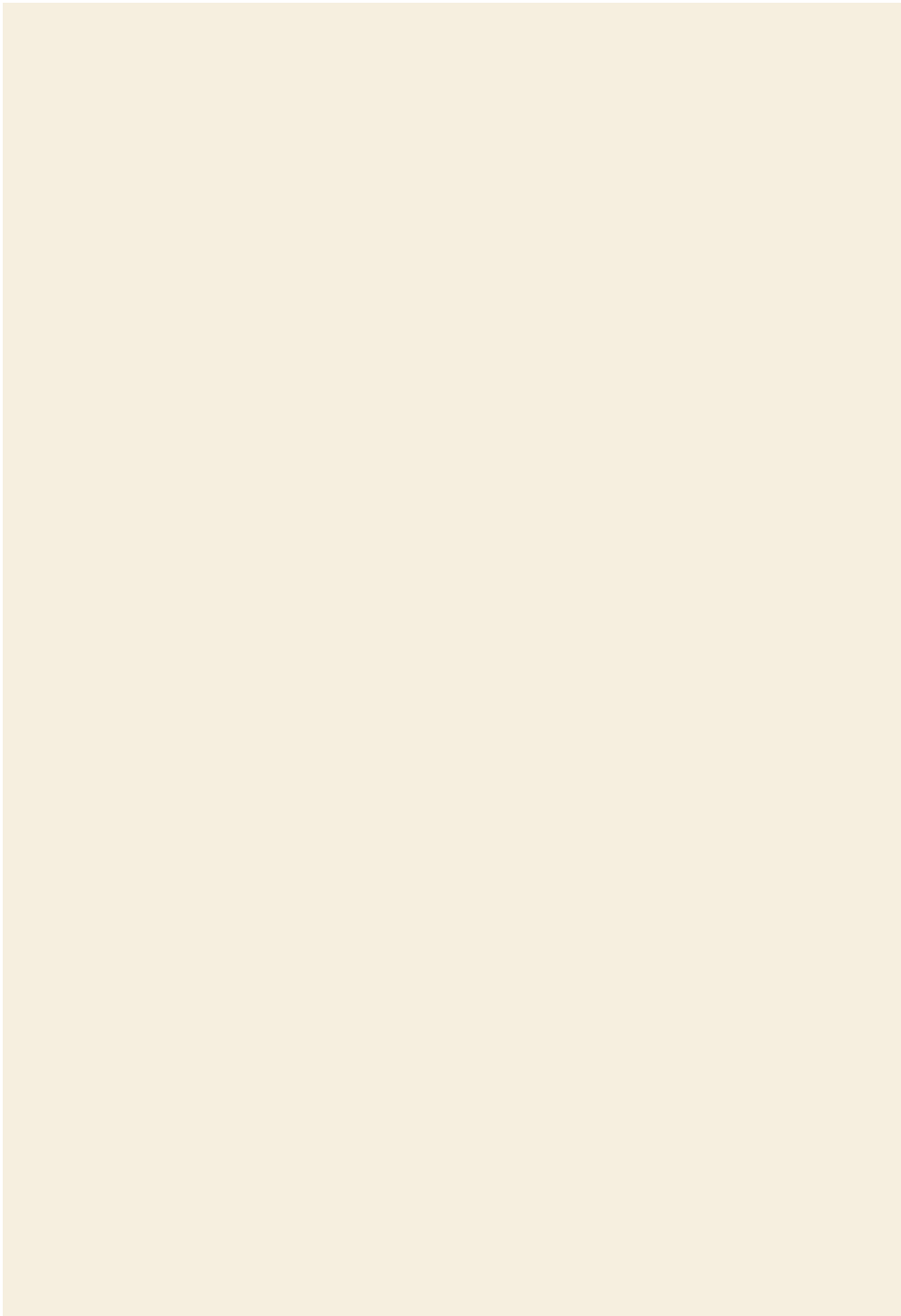


GLOBAL  
THREADS **ANNEX**  
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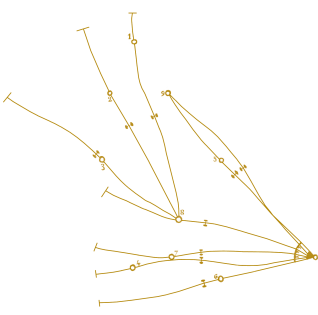


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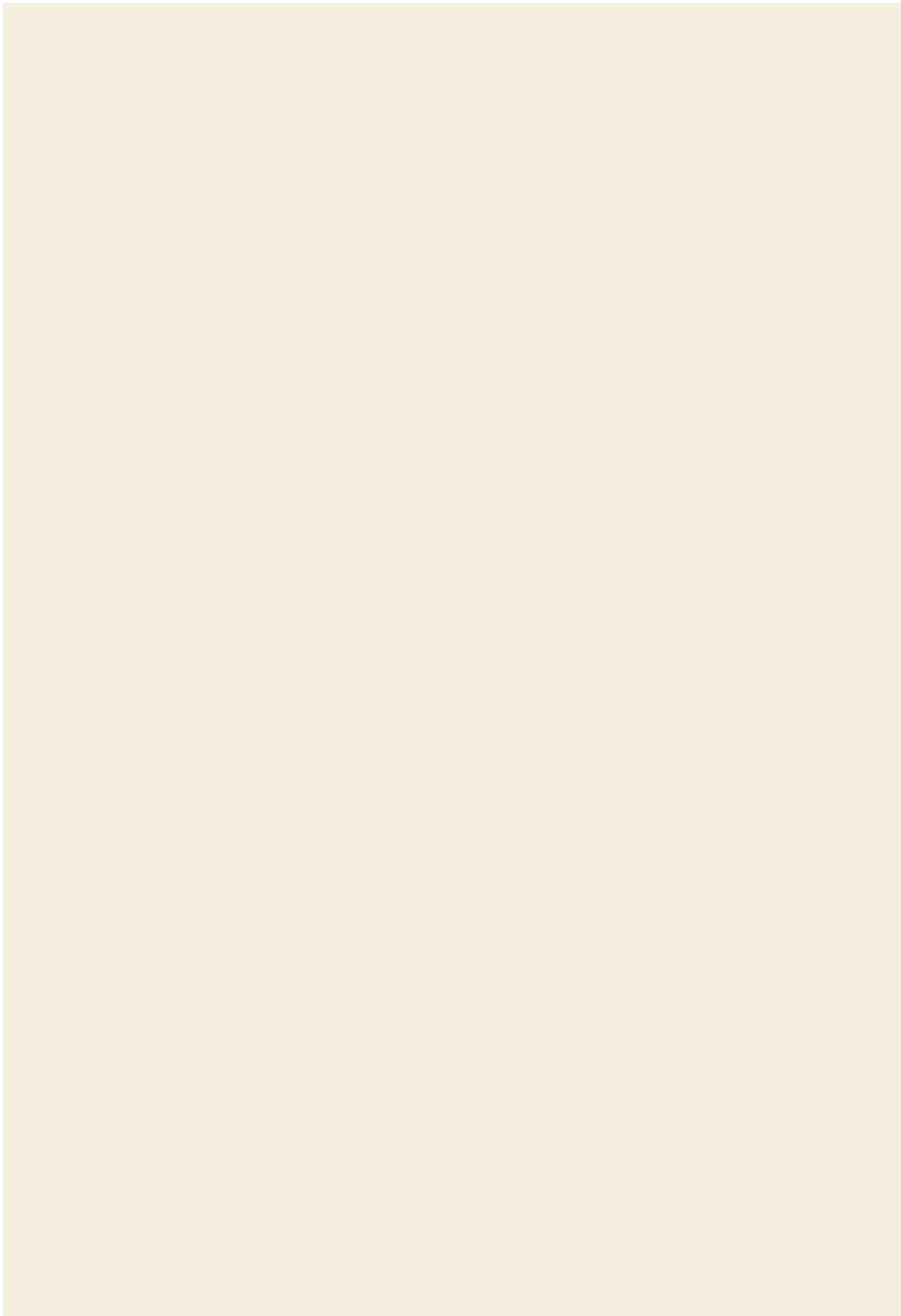


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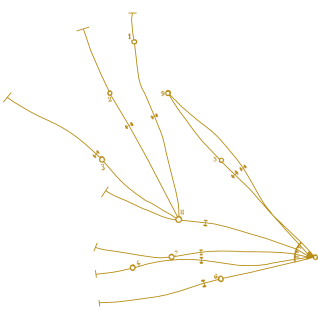
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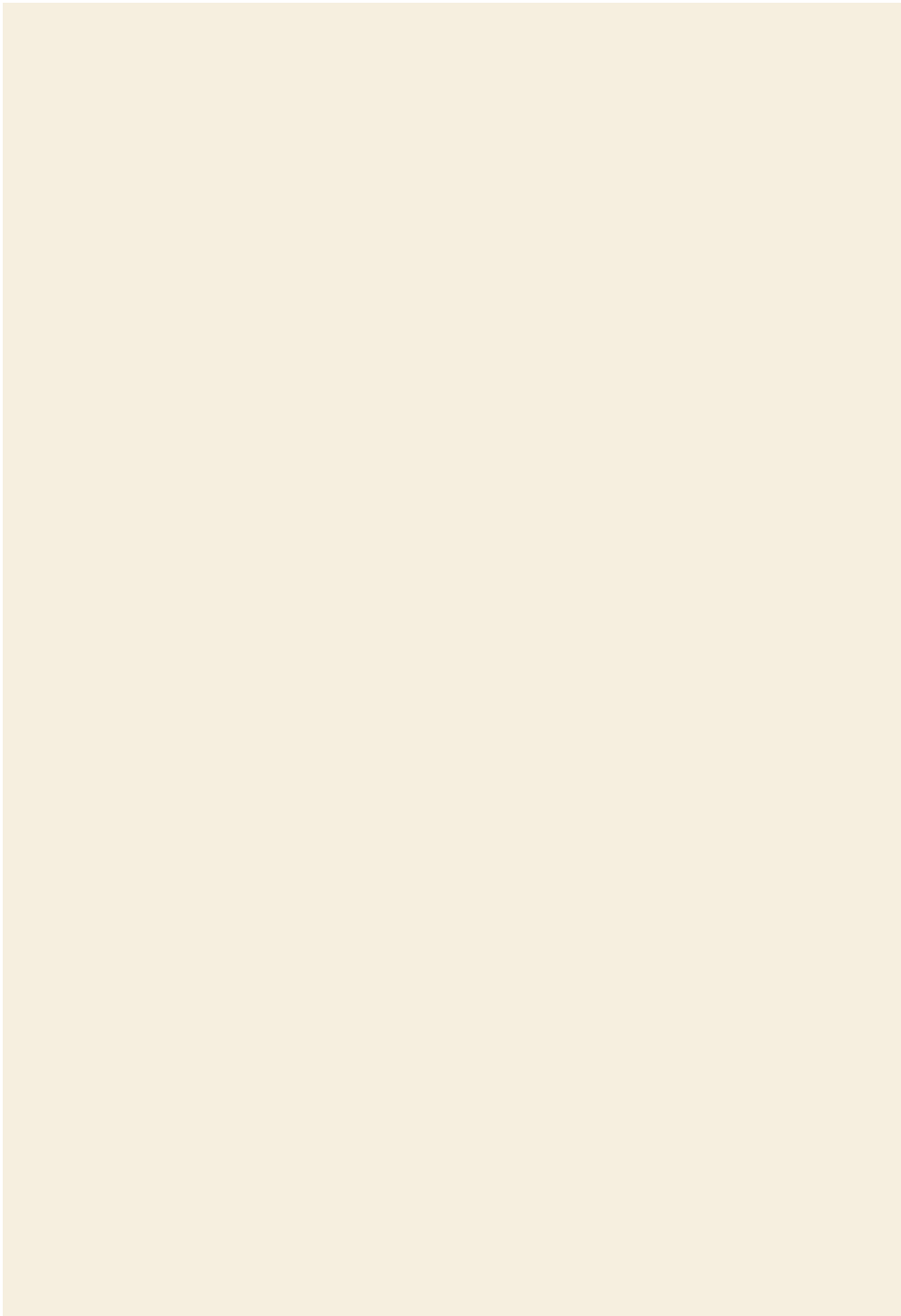
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FIVE-YEAR  
BUDGET



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