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INTRODUCTION

In LEA's August issue, we are pleased to present 'Network Leaps, Bounds and Misses' guest-edited by Fátima Lasay. Lasay is an artist, independent curator and educator of digital media and her research, creative and theoretical concerns include a cultural definition for technology-based art.

This issue emerges from ideas and research discussed at the 2003 "Old Pathways/New Travelers" meeting, in New Delhi, India. Lasay describes the issue's theme as a "meditation on the goals of that meeting."

The first article, by Tereza Wagner, discusses the UNESCO DigiArts portal, designed to "promote creativity in the field of digital arts," especially in the context of developing countries.

New Zealand educator/composer Ian Whalley discusses the role of the New Zealand Sonic Art CD series, which he curated, in the documentation of New Zealand electroacoustic music.

Peruvian scientist/media theorist José Carlos Mariátegui explores the various permutations of globalization in the context of Latin American media art.

Hasnul Jamal Saidon and Roopesh Sitharan, both artists based in Malaysia, describe an experimental online project based on a collaboration between students based in Japan and Malaysia, using it as a basis for discussing notions of "self, identity, nationality and cross-cultural encounters in today's age of global telecommunication."

In Leonardo Reviews, Yvonne Spielmann reviews *The Cinema Effect*, by Sean Cubitt, George Gessert reviews *The Molecular Gaze: Art in the Genetic Age* and Jan Baetens reviews Roy Ascott's *Telematic Embrace*.

EDITORIAL

NETWORK LEAPS, BOUNDS AND MISSES: CRITIQUING REGIONAL STRATEGIES FOR DIGITAL ARTS AND ELECTRONIC MUSIC IN ASIA AND THE PACIFIC

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Under the UNESCO Digi-Arts Knowledge Portal for technology-based arts and music, an international colloquium took place in December 2003 at the Sarai Centre for the Study of Developing Societies in Delhi, India. The meeting, entitled "Old Pathways/New Travelers: New Media, Electronic Music and Digital Art Practices in the Asia Pacific Region," sought to promote and

develop research, networking, mutual cooperation, training and knowledge in these fields within the region.

This issue of *Leonardo Electronic Almanac* springs as a meditation on the goals of that meeting, as a self-reflexive look into a proposed network that is founded on regional reification. Here we try to look within and without the Asia regional landscape and try to trace the paths of a network and its diversity, communality and identity.

In this issue, the fluidity between nexus, flux and negotiation in Ian Whalley's analysis of New Zealand electroacoustic music may also be seen as an alternative description of the dynamics of network competency, while Hasnul Jamal Saidon and Roopesh Sitharan present another layer of the regional network phenomena in a Malaysia-Japan Internet collaboration. The local, transregional and global attitudes towards technology and art discussed by José Carlos Mariátegui present us with shared significance in the Latin American experience of the "media space."

The Asian and Latin American development dynamic in a unified system of world trade may be useful in conducting broader dialogues on regionalism and globalization strategies at cultural levels. The national development goals of China, Korea and Taiwan, which balance domestic fortification and competent industrial and technological alliances, are believed by some to contribute to intensified South-South competition [1]. What are the implications, across the entire political spectrum, of deindustrialization in Cono Sur as a result of China's industrial expansion? Meanwhile, pan-Arab solutions to problems concerning technologies and industrial policies are under scrutiny. At the 2002 ministerial Arab ICT Summit at Burj al-Arab, UAE information and culture minister Shaikh Abdullah bin Zayed al-Nayan expressed skepticism towards the efficiency of Arab-level meetings and described better efficiency working at the level of the Gulf Cooperation Council [2]. As the Arab, Latin American and Asian experiences indicate, geographical reification seems to be crucial in prospecting development issues, but what is its potential in terms of working solutions?

Evidently state, regional and world affairs involve a dynamic balance. The role and place of new technologies and art in a social, cultural and economic landscape inscribed by ancient histories of contact ask us to rethink our traditions and conceptualizations of the local, global and universal. The ontological divide between nationalism, regionalization and globalization requires us to review our use and understanding of similarities, differences and diversity as contact technologies enable us to experience these cross-global tensions in mediated space. In identifying the demands of dynamic balance in this space, perhaps the region is at best a prognostic and organizational tool.

Such new connected consciousness also demands recognition of the social nature of information and raises the physical topology of information and communications technology to its social and cultural dimensions. What are the discrepancies in these topologies and the level of asymmetry among its nodes? Where should connections, within and outside regional networks, be established in response to dynamic tension? Where should traditions be broken?

If regionalization enables us to see the limitations of

geographical proximity, then it might also allow us to measure the value of and the distance towards cultural and conceptual affinity and diversity. A strong regional network recognizes its weaknesses, and empowers all its local constituents to strategic action.

REFERENCES

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2. See Max Ford, "Plugging into Change," in *Global Agenda*. <http://www.globalagendamagazine.com/2003/markford.asp>

BIOGRAPHY

Fátima Lasay is an artist, independent curator and educator of digital media. Her research, creative and theoretical concerns include a cultural definition for technology-based art. Fátima Lasay obtained her degree in Industrial Design (1991) and Master of Fine Arts (2002) at the University of the Philippines, where she also developed its digital media art elective courses in 1995. She has conducted workshops in Manila (Philippines), Sierre (Switzerland) and Yangon (Burma), and will be presenting her creative work and research this year in Melilla (Spain), Aarhus (Denmark), Yangon (Burma) and Singapore.



UNESCO'S PROGRAM IN THE PROMOTION AND SUPPORT OF DIGITAL ART AND ELECTRONIC MUSIC IN ASIA AND THE PACIFIC

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The UNESCO DigiArts portal (devoted to communication, networking and learning in the field of electronic music and media art) was created in 2002 to promote creativity in the field of digital arts. At a time when computers and their different applications are expected to transform our physical world into a virtual one, permitting a more direct and immediate access to our physical environment, a team of UNESCO specialists found it essential to start networking around the world and gathering information on the current activities in this field, especially in developing countries.

In this context, UNESCO's DigiArts portal

(<http://portal.unesco.org/digiarts>) has commissioned a variety of research and documents by media arts and electronic music professionals and artists, in order to permit the contextualization and documentation of this new form of creation in different geo-cultural regions.

The Conference held by UNESCO in SARAI, Centre for the Study of Developing Societies, Delhi, was part of this strategy. For the first time, specialists in media arts and electronic music came together in Asia to explore a common course of action, which will permit better communication and an exchange of programs, knowledge and ideas in addition to promoting residencies in different specialized institutions. To that end, the participants of the meeting have decided to create a new regional organization and a networking list (apnaidea) that will be devoted to media arts and electronic music in Asia and the Pacific. A draft proposal of the statutes of the new organization is being established in cooperation with the different members of the network. It will be studied at another meeting scheduled for September/November 2004, whose purpose will be the official creation of the organization. Several countries have expressed interest in hosting this meeting, but an official decision has not yet been made. UNESCO will be backing this new organization as much as possible with its DigiArts portal.

Research, conducted by Andrew Brown (Queensland University of Technology, Australia), whose aim was to map the major institutions and practitioners in the field of electronic music in Asia and the Pacific, proved that music technology activities in the Asia/Pacific region are quite focused on academic music programs. In many countries, these academic programs are still quite young. As expected, countries that have more established university programs in this field, such as Australia and New Zealand, have the largest quantities of practicing musicians.

In the field of media arts, Gunalan Nadarajan (an art historian and media art curator in Singapore) is conducting further research for DigiArts and the conclusions will most likely be similar to those found in the domain of music. The meeting in SARAI also revealed that there is an extremely low level of activity in the field of software creation in the region and that there is therefore an urgent need to promote training for artists and computer engineers capable of producing creative and cultural digital tools of this kind, which will serve to promote and produce Asian/Pacific cultural contents for the digital space in a region where a such a big percentage of all computer hardware is produced. Through apnaidea networking, the DigiArts portal will focus its efforts on building specific competency in this particular field.

RELATED URLs:

UNESCO' S DigiArts Portal: <http://portal.unesco.org/digiarts>
APNA:IDEA <http://mail.sarai.net/mailman/listinfo/apnaidea>
UNESCO Division of Arts and Cultural Enterprise Division of Arts and Cultural Enterprise:
<http://www.unesco.org/culture/creativity/>
UNESCO Prize for the Promotion of the Arts:
<http://www.unesco.org/culture/creativity/prize>

BIOGRAPHY

Tereza Wagner is program specialist of the UNESCO Division of Arts and Cultural Enterprise, coordinator of the UNESCO Prize for the Promotion of the Arts and deputy team leader of the Digi-Arts Portal. Her graduate and undergraduate degrees are from Paris V University, France, including a doctorate in anthropology of contemporary arts. Within UNESCO, she is in charge of the coordination of promotional and teaching programs related to contemporary arts and creativity (visual arts, literature, dance, music, theater, digital arts) as well as a program related to promoting arts education in the school environment.

RECENT NEW ZEALAND ELECTROACOUSTIC MUSIC: NEXUS, FLUX, NEGOTIATION

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ABSTRACT

New Zealand electroacoustic music was pioneered by Douglas Lilburn in the 1960s. Lilburn found a unique sonic voice based in the local environment and influenced a generation of younger composers. The New Zealand Sonic Art CD series, published since 1990, extends this electroacoustic tradition. The first two CDs pay homage to Lilburn and the European aesthetic while *New Zealand Sonic Art III* includes a wider range of work, reflecting changing patterns of cultural immigration to New Zealand, an emerging and distinct national identity, the influence of "local" culture, and the application of recent digital technology.

INTRODUCTION

New Zealand electroacoustic music began from the pioneering work of Douglas Lilburn (1915-2001). An established instrumental composer, Lilburn made a decision to abandon orchestral work after completing his *Third Symphony* in 1961 [1] . From that point on, he concentrated on electroacoustic music. His decision reflected a wider national artistic shift: a search for a New Zealand voice and a reaction against colonial art. Despite its European origins, Lilburn found that electroacoustic music lacked cultural baggage, because audio samples from the local environment could be fused with electronic sounds. This made it possible to create a unique New Zealand soundscape [2] . An early example of his approach is found in *Summer Voices* (1969) where he used a direct quote from a New Zealand Maori lullaby sung by local school children. He extended this idea, quoting directly from the natural environment, in his later works like *Three Inscapes* (1972) and *Soundscape with Lake and River* (1979).

Lilburn's aesthetic orientation was to be his most influential contribution. It encouraged a generation of his students, such as Denis Smalley, Ross Harris and John Rimmer to begin from a similar approach and common techniques [3]. Underpinning the aesthetic was Pierre Schaeffer's notion of musique concrète: a method of constructing sound works by editing together tape-recorded fragments of natural or man-made sound sources. Smalley was to later develop the notion of "spectromorphology" [4]. This aesthetic is based on using non-human and often environmental gestures as the basis for abstract soundworks based on gesture and changing texture.

By the mid 1990s, electroacoustic music was an established part of the "art music" genre in New Zealand, with the ODE Record Company releasing a set of six CDs by electroacoustic composers in 1994. The idiom was largely academically focused, experimental in nature and disengaged from popular music idioms and the wider community.

It is to Lilburn's credit, however, that electroacoustic music continued to receive significant airplay and concert hall exposure, along with new acoustic instrumental works. His influence also ensured that university-based student composers often included electroacoustic music courses in their programs and became fluent in acoustic and electroacoustic idioms.

NEW ZEALAND SONIC ART SERIES

To update the ODE Records CD series, the Music Department at the University of Waikato published two discs: *New Zealand Sonic Art 2000* [5] and *New Zealand Sonic Art Vol. II* [6]. The second disc was dedicated to Lilburn, who passed away in 2001. Responses to the call for works for these two CDs came mainly from academic composers of European/British heritage, their contributions being largely influenced by Lilburn or Smalley's aesthetic [7]. Many of the works submitted fit comfortably with an established and internationally recognized academic electroacoustic music style.

The intention of making the third CD in the series was to reflect a wider cultural and aesthetic palette. Many factors influenced this decision. The New Zealand population, particularly in the upper half of the North Island of the country where the majority of people live, had become far more ethnically diverse since the 1960s. There was an increasing indigenous Maori population, a rapidly growing Polynesian community and a rise in recent immigration from parts of Asia. A consequence was that the predominantly European cultural "gaze" typical of the 1960s continued to be diluted. Further, the "colonial cringe" that looked to Europe and England for cultural confirmation became less prominent. Confidence grew not only in local "European" culture, but also in a rapidly emerging cultural mix of Asian, Maori, Pacific Island and European inheritances [8]. Given the comparatively short history of European settlement in the country, the evolving culture was then less stable, more flexible and more open to negotiation than in many established countries and cultures.

A further influence on the call for works for the third CD was the development of other musical styles apart from an electroacoustic one, some of which were unique to New Zealand [9]. In the early 1990s there was a revival of traditional Maori instruments, illustrated by the pioneering work of Hirini Melbourne and Richard Nunns. Their first album, *Te Ku Te Whe*

[10], is one of the most original soundscapes to be produced, either nationally or internationally. Their contribution was to provide an alternative New Zealand voice to that established by Lilburn.

A second influence was the emergence of an experimental performance-based "soundculture," resulting from the use of found and invented instruments. In New Zealand, composers such as Phil Dadson pioneered this approach. His work with *From Scratch* [11], for example, incorporated Polynesian rhythms played on specially constructed and tuned percussion instruments made of PVC plastic pipes. A third factor was a growing interest in the music of Asian cultures by white New Zealand composers. Jack Body, for example, took a documentary approach to Indonesian soundscapes in his electroacoustic CD, **Suara** [12]. A fourth influence was the emergence of a digital sample- and synthesizer-based popular music culture. Commercially, record companies such as Kog Transmissions developed a number of artists for the international market [13]. A more experimental approach was illustrated by CDs such as **Dr. Kevorkian and the Suicide Machine,** by The Ironman [14]. Finally, intermedia artists had also begun to experiment with electronic music through mixed media events, beginning in the late 1980s. For example, Artspace in Auckland hosted the first Soundwatch festival in July 1989. By the late 1990s, there was also an increasing number of sonic publications from Artspace, such as **The Fourth Window** [15].

NEW ZEALAND SONIC ART III

The call for works for New Zealand Sonic Art III sought material generated from found and invented instruments, traditional instruments and environmental sounds. It hoped to capture some of the range of cultural approaches and experimental music taking place that had been represented on the first two CDs as well as to find commonalities and differences between a diverse range of practitioners and to explore issues of access and elitism, regionalism and internationalism, tools and output. It was also hoped that the disc, as a collection of soundworks, would reflect something of the emerging and evolving New Zealand identity.

From the many works submitted in response to the call, the following tracks were selected by a panel:

1. Hirini Melbourne and Richard Nunns, **Te Hau Kuri (Dog's Breath)**; 4:30
2. John Elmsly, **Soft Dawn over Whispering Island**; 10:32
3. Kit Powell, **Contrasts**; 6:36
4. Phil Dadson, **Zitherum Voice**, 8:00
5. Ian Whalley, **Kasumi**; 7:48
6. Norm Skipp, **The Void**; 6:00
7. Chris Cree Brown, **Aeolian Harp Sounds**; 7:48
8. Chris Knox, **Rake**; 2:56
9. William Harsono, **Subconscious**; 7:19
10. Michael Norris, **Aquarelle**, 10:20

A PERSPECTIVE

The introductory notes to the CD, penned by Martin Lodge, begin:

"Forty years ago, New Zealander Douglas Lilburn established an approach to electroacoustic composition rooted in the investigation of environmental sound. The intention was to

uncover the inner, spiritual values of natural sound and thereby develop an awareness of place..." [16].

Having curated and produced the CD, four areas seem worth noting: reconciling old and new approaches; culture and technology; technology as a facilitator of cultural similarity; and negotiating and reconciling traditional and international boundaries.

RECONCILING OLD AND NEW APPROACHES

Lilburn's legacy is evident in John Elmsly's *Soft Down Over Whispering Island*, where some of the samples are taken from the natural environment and then electronically manipulated. Similarly, Kit Powell draws on native bird sounds in *Contrasts: A Collage of Found Sounds and New Zealand Bird Calls.* Smalley's aesthetic of using an abstract approach to sound generation is found in Michael Norris's work *Aquarelle*, which sits comfortably with the international Anglo/French acousmatic style in approach and content.

These techniques, however, are not the sole province of electroacoustic music composers. "Rake", by ex-punk rocker Chris Knox, uses sound samples from rakes on metal, plastic, paper and glass as school students clean up a sports stadium after a big event. Like most electroacoustic works, it is constructed through editing rather than being recorded from a real-time performance. Knox notes that his method of working to create the piece by manipulating recorded sounds was "a very logical extension of what I had been doing on tape for the past twenty years" within the popular music aesthetic, but "without the constraints of the pop song structure" [17].

In contrast, Lilburn's approach could also be considered as a point of difference with works that use new instruments to create a live performance. Phil Dadson *Zitherum Voice*, for example, is generated from an improvised performance of an invented acoustic instrument where three piano wires connected to polystyrene resonators are strung onto a 3-meter long tubular frame. The instrument can be played with a variety of devices, such as, in this instance, a battery-powered hand-fan.

Despite the range of approaches to generating the source material, the point of reconciliation between old and new practice is in the use of similar digital tools to manipulate the works after the fact. Few of the works on the CD could exist without digital audio splicing or editing. Similar software/hardware platforms for audio recording have also been used by a number of practitioners, regardless of style.

CULTURE AND TECHNOLOGY

The application of new digital technology can inspire new artistic ideas in idioms that developed before this technology was available. Hirini Melbourne and Richard Nunns' *Te Hau Kuri* (Dog's Breath) is generated in the first instance from a number of short performed samples of traditional Maori instruments. These samples were taken into the studio and mixed, layered and panned using digital editing technology. The result sounds like a live performance, but the work could not be created by two players or by playing live. There are more tracks than players and the volume alterations, panning placements, sound compression and sound equalization manipulations are added through digital editing. The idea behind the work, a sonic

rendition of a legend from the late fourteenth century using replicas of instruments that may have existed at the time, is thus only able to be realized using contemporary technology.

The relationship is of course dialectic: acoustic performance and digital editing tools can be used in the creative process in ways that may not have been originally imagined. Chris Cree Brown's **Aeolian Harp Sounds**, for example, was generated in the first instance by an outdoor sculpture placed in the Christchurch Botanical Gardens. A large shell channels the wind as it blows through the structure. The "performance" was generated from strings that were in this instance randomly tuned. These sounds were then digitally recorded and further enhanced in the production process in the studio, with slight compression being used to level out the volume of sounds. Overall, the sound level is also lowered on the disc to give the impression of how the original might best be encountered in the original setting.

TECHNOLOGY AS A FACILITATOR OF CULTURAL SIMILARITY

An outcome of different practitioners' using similar digital audio hardware or synthesis tools as a means of generating new music is that they may converge on similar outcomes: without a diversified source of cultural input, the tools themselves might become the means of generating cultural product. For example, experience at European festivals suggests that it is increasingly difficult to tell which geographical region many works originate from.

On the CD, Norman Skipp's **The Void** was premiered as part of the "La Création du Monde" portion of *Synthèse 2001* in Bourges, France. Despite the philosophical basis of its generation, a "personal cultural resonance with the land of one's birth, and how that defines one's identity" [18], the resulting sound is very much a European one with little direct local identity in sound. At the same time, this sense of internationalism is also part of New Zealand electroacoustic music culture as is its European connection.

NEGOTIATING AND RECONCILING TRADITIONAL AND INTERNATIONAL BOUNDARIES

Two works provide examples of negotiating and reconciling regional and international influences. These illustrate how differing cultural resources and narrative traditions can be drawn together to create unique works.

My own work, **Kasumi**, takes its source material from short instrumental samples of seven New Zealand Maori instruments. In tandem, there is a Japanese text for the work from the *Manyōshū* by Otomo no Yakamochi, written on 23 February 753. Both the text and the instruments are recreated in their original incarnations in the work but are also extensively manipulated through digital processing techniques. The approach weaves three different cultures into one work, but creates a new hybrid from the sum of the parts. The danger of attempting "crossover" work is in using source material inappropriately. I was fortunate to have access and advice from an expert player of traditional Maori instruments (Richard Nunns) and a Japanese musician (Chikako Komaki), who could read the text and comment on its use.

Another work on the CD reconciles a modern European approach to electroacoustic manipulation with a Chinese text.

Subconscious, by William Harsono, a recent immigrant to New Zealand from Taiwan, is based on an original poem read in the composer's first language. This is woven into an electroacoustic score based on a moving three-dimensional sound world, and draws the listener into a meditative mood. The advantage of being able to borrow fluidly and fluently from both cultures is clearly illustrated.

CONCLUSION

Culturally, *New Zealand Sonic Art III* draws on a wide range of historical and geographical influences. The resulting juxtaposition of works represents something of what it means to be a New Zealander at present, including aspects of the culture that have not been reconciled and may never be.

Despite these contrasts, there are points where reconciliation is attempted sonically: the results are generally introspective and spacious, which also reflects something of the New Zealand character. It is evident that digital audio tools are providing a means to reconcile various sonic influences, or to extend old ideas into new areas. At the same time, the local cultural resources provide the means to make a distinct cultural product.

The amalgam of Polynesian, European and Asian heritage that is continually negotiated, in combination with the national geography and climate, make the country unique. Lilburn's notion of finding a New Zealand voice has not disappeared, but the world he sought to represent, and the resources that can be drawn on to portray it, have been considerably expanded since the 1960s.

RELATED URLS

Ian Whalley

http://www.waikato.ac.nz/humanities/music/staff/ian_whalley.shtml

New Zealand Sonic Art Project

<http://www.waikato.ac.nz/humanities/music/nzsonicart.shtml>

Organised Sound (Cambridge University Press)

http://titles.cambridge.org/journals/journal_editors.asp?mnemonic=OSO

ICMA

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Interactive Music Project

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2. See Chris Bourke, "Douglas Lilburn: An Interview," in *Music in New Zealand*, 29, 1996, p. 37.
3. Their recorded works include Denis Smalley, *Tides* (Ode

Record Company, CD MANU 1433, 1993); Ross Harris, *Inner World* (Ode Record Company, CD MANU 1434, 1993); and John Rimmer, *Fleeting Images* (Ode Record Company, CD MANU 1437, 1993).

4. Denis Smalley, "Spectomorphology: Explaining sound-shapes," in *Organised Sound* 2(2), 1997, pp. 107-26.

5. *New Zealand Sonic Art 2000* (Hamilton: University of Waikato, CD MDUW1200, 2000).

6. *New Zealand Sonic Art Vol. II* (Hamilton: University of Waikato, CD MDUW1201, 2001).

7. See Smalley [4] .

8. See William Dart, John Elmsly, Ian Whalley, "A View of Computer Music: Auckland, Waikato and the Asia/Pacific Connection," in *Organised Sound* 6(1) 2001, pp. 11-20.

9. Ian Whalley, "Editorial: Music Technology in Australasia and South East Asia," in *Organised Sound* 6(1), 2001, pp. 1-2. The issue gives a good summary of the influence of local cultures on music-making.

10. Hirini Melbourne and Richard Nunns, *Te Ku Te Whe* (Rattle Records, CD RAT-D004, 1994).

11. Gregory Ncholas, *Pacific 321 Zero* (NZFC Films, 1993).

12. Jack Body, *Suara* (Ode Record Company, CD MANU 1380, 1993).

13. See Russell Brown, "Dancing Kings," in *Unlimited*, December 2000, pp. 58-64.

14. The Ironman, *Dr. Kevorkian and the Suicide Machine* (CD Universal 98432, 2000).

15. See *The Fourth Window* (CD/CDROM, Artspace, 1999).

16. *New Zealand Sonic Art III* (Hamilton: University of Waikato. CD MDUW1202, 2002).

17. See [16] , Chris Knox liner notes, p. 12.

18. See [16] , Norman Skipp liner notes, p. 10.

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BIOGRAPHY

Ian Whalley lectures in the music department at the University of Waikato (Hamilton, New Zealand), where he is digital music studio director and director of the Interactive Music Project. As a composer, his work is influenced by sound gestures from the Asia/Pacific region, and their combination with electro-acoustic textural manipulation. He has received awards and grants from the British Council (UK), Kunitachi's CMMT (Japan), Meiji University Visiting Fellowship (Japan), Klangart '99 (Germany) and UNESCO (India). His research work focuses on generative and interactive systems in music, and artificial intelligence/agent-

based applications to non-linear music. He has published in forums such as *The Computer Music Journal*, *Organised Sound*, *Canzona*, *Convergence*, *Enculturation*, *Contexts* and for international events such as ICMC and ISEA. His editorial board service includes *Organised Sound* (Cambridge University Press) and he curates the New Zealand Sonic Art CD Series. Ian is currently a director-at-large for the International Computer Music Association.

LATIN AMERICAN MEDIA ART: LOCAL CREATION / GLOBAL ARTICULATION

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In geographical terms, we usually think of Latin America as a region. But it is not easy to generalize into one the creative processes of different countries in a determined region. Though this notion of generalization tends to be taken out from the process of so-called "globalization," it could be questioned in a very critical but useful way in order to analyze the differences among new media creation in Latin America. Since all of us are suffering from, in one way or another, as well as representing, the processes of globalization in different levels and from different perceptions, it seems interesting to consider the space for action as an intersection between global and local premises: a position that occupies a hybrid space, a platform of mixed realities, in an attempt to articulate the ideas within these two strong tendencies. This hybridism by which these identities are transported is reflected in today's ambivalent use of media art from the production and participation within a "global popular culture" to the construction of local attitudes.

It is not just a question of identifying Latin America's local reality with tradition or modernity; new identities are not only generated by global or local means but from the complex articulations that occur inside an unstable equilibrium in the form of different visions of the same discourse, emerging from a local contact that mediates its relation and response with the exterior (which does not necessarily mean the global).

From a simplistic perspective, globalization could be seen as a way to try to apply the same "prescription" that worked well in some countries to others; that is to say, an attempt to recreate the same discourse in another language and culture. In this sense, the analysis of the current development of media art on a global scale often has a sophisticated but empirically flat theoretical development, constructing polished conceptual arguments that gather little from (local) reality. Nothing is less original than this type of proposal. For this reason, the articulation of intermediate process and getting together different pieces from reality have a fundamental value in today's contemporary media art creation.

A central aspect that occurs to many people that live in highly populated centers, capitals or metropolises in Latin America is the approach and desire for a Western lifestyle, imitating it in the hope of becoming "others": an unstable equilibrium of total subjugation. It is interesting that many of those global cities inside this complex space seem united or much more "connected"

with each other than with the extremely quiet zones outside those cities, with no awareness of what happens there at a creative level. The scheme and condition of the premises and the relation with the centers that exist within the peripheries needs to be reframed, bringing into the discussion a concept that we can call the "periphery of the periphery": towns where in many cases the Internet has not yet arrived, where the digital is still in its infancy or not at all present, spaces in which if we want to "innovate," it must be by the use of "offline technologies," such as video. If we manage to develop or to define a strategy in terms of south-south interaction, this will open new possibilities for different forms of existing creation resisting the dominance of an imposed international post-modern language and generating new media spaces that would be part of a real "networked space": much closer, in cultural terms, to a geographical one.

Although one can focus on a subject by way of many representations, in the case of video and electronic art in Latin America, there have been many attempts to abstract the city and turn it into "another" space. There is no doubt that a metropolis such as Sao Paulo, Mexico City or Lima - which, in addition to experiencing decades of migratory displacement - is a portrait of the ideas of its inhabitants. As Nestor García Canclini comments: "As a result of this kind of situation, national cultures lose their influence in the social definition of identity and new modes of definition are accepted" [1]. In this sense, popular or local culture acts as a depository of official speech as well as of the popular narrative, creating a space where modernity and tradition converge by means of day-to-day practice.

This practice reveals in many cases the intrusion of power and the persistence of tradition in demonstrating the social tensions that generate conflict. Local empowerment is still the most important movement in the present world because it is the application of concepts taken from global and local spheres. The political, social and mediated strategies force us to see the perspective within the contemporary creation using these definitions. Based on this idea, we can work on three types of attitudes towards new media art proposals in such contexts: local, transregional and global.

II

The local level is a movement not only of empowerment and solidarity but also of independence and critical vision. By means of a universalistic panorama, the folk-nationalist or "traditional" local content tends to put an emphasis on the difference between the creation (simulation) and the real situation. In this way, a sort of "critical bridge" is formed in which both ways of looking - the folklorist interpretation on one side and the real situation on the other - are compared and placed in relation to each other. Media art oriented in a vernacular way tends in vain to compress all the diversity available in a country, typifying it as a single cultural reality. By way of such means, enormous differences will be ignored, especially the ones between urban and rural zones. As a reaction to this vision, traditional images are mixed with modern, global, post-industrial ones, showing them in satirical forms to demonstrate not one reality, but a compendium of "realities." This confrontation is not used in a negative sense, but to connect modern culture and tradition.

The second level, the transregional one, is a mixture between local and global concepts, but in geographically related terms. This is an "integration movement," in which elements coming from the media are reworked, leading to a reinterpretation of reality. In the topics of this level, there are some anti-global characteristics since it tends to use material from local media. The new image is a way of creating awareness and persuading the public to understand things from other perspectives.

An acceleration of reality and the comparison of patterns communicating forms that go towards a transregional media culture are persistent factors in the reevaluation of symbols towards an internationalism and against tradition, while still remaining critical to the local context. This cosmopolitan ethnography to which the contemporary creation makes reference offers a new definition from which we understand the challenge of a change: it is more important to pay special attention to the definition of the media information than to the media technology associated with it. In this respect, TV can still teach us many things that may be useful in providing an insight to the future of the Internet.

The global level is a movement of peripherization, meaning that despite the fact that the distances between the centers and peripheries are growing, these projects tend to place themselves among global strategies to stay in a "relative" center. Art has become a prefabricated question, where everything is the consequence of a great historical distortion and perhaps the real innovators will not be considered the "best." There is no more originality, just recycling. The intellectual exercise no longer has any value, because the people have become quick consumers, demanding a "hit" or something "cool." Interestingly, it is impossible to define authorship with a specific nationality, marking such works as being completely global.

As Gerardo Mosquera has pointed out: "It is necessary to cut the global pie not only with a variety of knives, but also with a variety of hands, and then share it accordingly. This is neither revolution nor political correctness: it is a need, for all we want is an endogamous culture" [2].

If we do not have a clear idea of the plural cultural conformation of a country, we will not be in a condition to contribute to a social change that some societies demand as a historical imperative in order to juxtapose theory with practice. For that reason, although the important "ones" may remain unnoticed, the system is fast and forces us to be very selective, but not deep; it is much easier today to leave a track in Lima than in New York.

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BIOGRAPHY

José-Carlos Mariátegui is a scientist and media theorist, and president of Alta Tecnología Andina (ATA), a non-profit organization dedicated to the development and research of artistic and scientific theories. He is the founder of the International Festival of Video and Electronic Art in Lima (1998-2003) and director of the Memorial Museum Mariátegui of the National Institute of Culture. He is resident at the CICV Centre de Recherche Pierre Schaeffer Montbéliard Belfort, Hérimoncourt (France), coordinator of the scientific thought and philosophy of science program at Cayetano Heredia University (Lima) and of numerous expositions and symposia in Peru. He teaches in the Ricardo Palma University museology program and his recent conferences include Coloquio Internacional de Historia del Arte, Medi@terra Festival, ISEA 2000, Emoçao art.ficial and Transmediale.03. He has curated several exhibitions, including the Interferences Festival (Belfort, 2000) and "Nueva/Vista: Videokunst aus Lateinamerika," ifa-Galleries (Bonn, Berlin, Stuttgart, 2002-2003). He is a member of several committees on virtual reality, interaction, visual computing and artificial life and a member of the ISEA Cultural Diversity Committee. He served as a juror of the 13 Videobrasil (2001), as a member of the ISEA 2002 International Programming Committee and of the International Advisory Board of Prix Ars Electronica 2004. He is a corresponding editor for **Leonardo Electronic Almanac** and **Fine Art Forum** and currently acts as a node of the E-Tester project (www.e-tester.net), a platform of critical theory and practice on contemporary creation.

His most recent publications include "Techno-Revolution: False Evolution?" (**Third Text**, London, 1999; Spanish-language version in *Márgenes Encuentro y Debate*, Año XIV, Lima, 2000); "Video-Arte-Eléctrico-en-Peru" (in **De la pantalla al arte transgénico**, edited by Jorge La Ferla, Universidad de Buenos Aires, 2000), "Visiones/contravisiones del video y arte electrónico en el Perú" (in **Perú: Resistencias**, Casa de América, Madrid, 2001), "Art as Evolution" (in **Medi@terra 2000 Neo[techno]logisms** Athens, 2001), "Gianni 'Tupac' Toti, un hommage à Gianni Toti" (in **Turbulences vidéo** France, 2002). "The Camera as an Interface: Closed-Circuit Video Projects in Peru" (in **Leonardo Electronic Almanac**, Vol. 10, No. 3, 2002.), "Peruvian Video/Electronic Art" (in **Leonardo**, Vol. 35, No. 4, 2002), and "Lebende und optische Maschinen - Eine Interpretation von zwei installationen" (in **Rosa Barba: Off Sites**, Walther König, Köln, 2003).

THE USE OF INTERNET FOR AN INTERNATIONAL COLLABORATIVE PROJECT

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ABSTRACT

This article is basically a report of a research project called *Upload:Download - Fukuoka: Kuala Lumpur Young Artists' Online Collaboration*. It is an experimental online project that represents an international collaboration between students based in Fukuoka, Japan and Kuala Lumpur, Malaysia. Essentially, the project aims to explore the creative potential of the Internet, especially amongst youth. It is also designed to instigate further inquiries into the notions of self, identity, nationality and cross-cultural encounters in today's age of global telecommunication. The project also functions as an experimental case study to investigate the underlying forces of mass and multimedia in forming today's realities.

INTRODUCTION

The era of the 1990s brought a radical change in the way we communicate with each other, where people separated by geographical distance are united in the virtual realm through the emergence of Internet technology. An award-winning dictionary of Internet terms, www.netlingo.com, defines Internet as "The most important technological innovation of our generation, the Internet is actually a network of networks" [1] .

The Internet is a global network that links computers worldwide and connects millions of people from various backgrounds. This huge network creates a fresh situation for individuals and society as a whole, prompting us to reflect upon its impact, potential and implications. The Internet revolution is not just about communications and technology - it touches the very fundamental ingredient of our social structure, as described by Eduardo Kac: "The complexity of the contemporary social scene permeated by electronic media, where the flux of information becomes the very fabric of reality, calls for a reevaluation of traditional aesthetics and opens the field for new developments" [2] .

Questions ranging from issues of the social and private sphere to those of gender and identity are posed in new ways through the Internet. Thus, with the interest in analyzing and exploring the potential and implication of virtual networked society, the project *UPload:DOWNload - Fukuoka: Kuala Lumpur Young Artists Online Collaboration* was born. Hasnul J. Saidon, along with Roopesh Sitharan, initiated the project during his residency program at Fukuoka Asian Art Museum Japan, from October to December 2003. Eight young artists from Malaysia and 11 young artists from Japan were engaged in the project via Internet.

PROJECT BRIEF

The project was divided into four sub-projects, involving different elements of multimedia at each level. The four sub-projects are:

1. interFACES (stills)

The artist had to upload a .jpg image of a self-portrait, which was then manipulated by a participating artist from another country into typical and stereotyped faces of the particular artist's country and vice versa.

Can facial features in regard to cultural stereotype be relevant for an increasingly networked generation? Can facial features be the epitome of cultural or national identity (or even pride) in the age of the Internet? Can there be a pure or an original "face" for a particular notion of identity and nationality, especially in the age of global telecommunication?

2. BranconTEXT (animation, gif sequence, PowerPoint slides)

Here the artists were required to record the brand of products used on a particular day. Later, the images/logo of the brands were arranged according to the sequence of usage. The logo and images of the brand were uploaded to the site and later downloaded by a participating artist from another country, who created a character from the logo and vice versa.

Are brands important in the daily life of the participating artists and how do they relate to the products that they use and consume? Are their consumption patterns similar or different? Is there any indication of globalized or homogenized taste and style? Or do the taste and style gravitate more towards local preferences? What are the implications of information technology towards their consumption patterns, tastes and styles?

3. CITY stream (video)

The artists were required to shoot a 5-10 second sequence of digital video of a selected location in the city that reflected the space that they constantly used or lived in, a space that they liked and enjoyed. The video was later uploaded to the site and downloaded by the participating artist from the counterpart country, who used it to create a 7-15 second video reflecting an ideal virtual city of their own and vice versa.

Are cities becoming globally homogenized or localized? Are they becoming increasingly commercialized? How do the participants in both cities relate and interact with their cities? How do they relate to other cities via the Internet? What is their notion of an ideal urban dwelling space, both physically and in virtual form? Do they have the same vision?

4. soulBITS (sound)

The artists were required to create or compose their own short digital music or sound composition, reflecting their own notions about spiritual happiness and well-being. The audio was uploaded to the site and downloaded by the participating artist from the counterpart country, who used it to create digital music with the same notion and vice versa.

Does spirituality have any relevance to the present age, especially amongst urban youths? How do the participants relate to spirituality? What are the differences and similarities? How does spirituality stand in the midst of mass consumerism, global telecommunications and cross-cultural encounters?

THE PROCESS

The whole project evolves within the process of downloading, manipulating and uploading content provided and used by both counterparts. Content is no longer "concrete," but a vital part of the communicational contexts that can be rejuvenated and manipulated, virtually by anybody. The online nature of the project was ideal in making global participation possible, and the idea of "manipulating" content provided by each other played a significant role.

In the interFACES project, the context of the work involving portraits of participants posted online proved an important point in working with such virtual and networked environments. The organic form of such content, without any identity or characteristics, is explained by Alan Sondheim: "The online aspect is crucial; the work permits global participation, and the idea of 'stripping' has a political context as well - one may be stripped of her or his political rights, belongings, etc." [3] .

Due to the process of sharing with other participants, the contents were unstable and constantly changing, fitting into the particular needs of the participating artists according to the level of manipulation they employed. The very nature of the content is organic and open to possibilities of change, providing the artist with a unique opportunity to customize the work. Digital content thus has the potential to become "indefinite content," open to revision, evolution, collaborative, manipulation and cross-disciplinary utilization via the Internet. As Eduardo Kac has stated, "These works are based on mutable structures and unstable links. For them to be meaningful, they rely on enabling the participant to make choices on-line, participate in the development of the work, and determine the experience one has as he or she navigates a given piece" [4] .

At the participatory level generated through the networked society summoned over the Internet, communicative encounters take place not through physical appearance but through the action and reaction that result from the participants' engagement in a shared mediated activity. As the reactions are experienced through the Internet, anybody around the globe with Internet access can see them, erasing boundaries between them and making the work accessible to anyone. This is a perfect example of global collaboration interdependently generating artworks and forming a global network. It is as described by artist Damien Funk, who says about the collaborative *Funkworks* project, "Collaboration supercharges their efforts and they continue to produce stunning illustrative work on a regular basis" [5] .

The use of the Internet to create art influences the artist's ideas, attitude and perception, resulting not only in possibilities for changes in the content, form and context of the artwork, but also demanding new skills and knowledge on the part of the artist. For instance, one must understand the process of uploading and downloading via Internet, the requirements of the digital medium, proficiency in handling the particular software required for media manipulation and management, etc. This demands a multi-disciplined and multi-tasking approach in meeting all the essential requirements to create artwork on the Internet. The global network has become the propeller of a radical economic, social and cultural revolution manifesting new requirements for human capabilities and knowledge to meet the future of information-based society.

This is well-defined by Peter Weibel, who writes that "Society has attained a complex state of development in which a technological instrument such as the Net has become necessary for it to work" [6] .

Participants in this project were required to register to the site before being able to take part in the collaborative process. This was in order to monitor, moderate and control the flow of the content and to aid in the research process. Safety was also an issue raised during the registration process, some of the participants being reluctant to register and reveal their actual information. The open nature of the project, which was free from any restriction and accessible by anyone, created an alarming state of uncertainty and insecurity. Security has always been a difficult task in handling any works with similar online characteristics. With the appearance of hackers creating digital bacteria, worms and viruses, manipulating information for their own benefits and advantage, it automatically creates an atmosphere of doubt, disbelief and fear amongst Internet users. As Charlotte L. Frost writes, "Technology can make us feel vulnerable and exposed when we don't understand it or are subject to it, yet we use it very intimately, for example in text messages and e-mail. The Internet thrives on anonymity" [7] .

In the interest of pursuing and exploring new possibilities of cross culture encounters via the Internet, the participants from Malaysia and Japan agreed to embrace the process of content hybridization between them and a mutual understanding took shape, based upon trust and belief. With the trust gained between both parties in submitting content revealing personal interest and information, the project was well on its way. "Trust" and "curiosity" stood as the key elements behind the success of the project, creating an environment free from skepticism and easing the flow of information and the development of the artwork. The participants became the active creators of meaning for the content.

FUTURE DEVELOPMENT

The *UPload:DOWNload* project has revealed numerous potentials in various aspects for further exploration. It serves as a research platform, contributing towards technological development as well as cultural understanding in relation to the implications of the networked virtual society. It also serves as a passage over the gap between researcher and participant, artist and scientist, art and science, in an evolving and knowledge-sharing society. The project would be best received as a future-oriented investment in preparing ourselves to embrace the transformation of global development and the implications of such development.

Considering the potentials and capabilities of the UD project, we can expect it to change continuously. Nevertheless, some key areas have been identified for future development plans of the project. These are:

"To develop and enhance the project by integrating the use of wireless applications such as cellular phone technology and PDA as an integral part of the artwork creation and contribution. These wireless applications will be the key communication tools of the future. This will enable participants to bring the project into the physical space of their life rather than logging into the virtual realm and uploading the content via the

website.

"To conduct workshops, seminars, talks and exhibitions encouraging people around the globe to participate and collaborate in the process of creating artworks, which will increase the cross-cultural encounters amongst participants of the UD project. This will also create a network, forming a global virtual network beyond geographic restrictions.

"To adapt the artwork display in a gallery or offline context (i.e. a physical space) at several venues around the globe to enhance, experiment with and explore the relationship with and participation in the virtual and physical space and all activities done between the online and offline sites. This would include experiments such as:

- A live panel display of manipulation of portraits
- Live videos and animations of the streaming and manipulation process
- A soundscape stereo installation from the UD site
- An online terminal via the UD website
- Live conferencing for interactive performance-based activities

CONCLUSION

Undoubtedly, the Internet represents a new challenge for artistic practice. It raises questions on cyber-cultural analysis, bringing up the inevitable debate on the core of social structures as we face a transforming and evolving future society. This article explores how society has adapted itself, forming a symbiotic relationship in utilizing telecommunication technology in anyway possible.

Software giant Microsoft has said that "More Asians, including Malaysians, are resorting to technology to express their emotions," citing findings from a survey conducted by its MSN Internet unit [8]. The company said in a statement that affluent men and women these days are starting to depend on various online communication channels, such as e-mail and instant messaging, to express themselves. The second annual "Love Online" survey conducted by MSN Asia covered areas like "expressing feelings of love online, inviting someone out on a first date, using the Internet to carry out two (or more) romances and breaking up with someone online rather than face-to-face" [9].

Through the execution and development of our project, many new questions and unrevealed territory have emerged. Works similar to this project penetrate the idea that the Internet creates new forms of social relations and structure. The Internet will continue to evolve as it is being associated with other forms of technologies, involving our senses to improve the way we communicate and reach each other. It opens new opportunity, freedom, productivity, efficiency and access; at the same time, it requires fresh awareness and consciousness to be able to confront these changes. These are the areas in which investigation and critical analysis are necessary in order to be able to benefit from communication technologies such as the Internet.

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BIOGRAPHIES

Hasnul Jamal Saidon received his BFA in painting from Southern Illinois University, U.S.A. and his MFA in electronic arts from Renselear Polytechnic Institute, U.S.A. His multi-dimensional approach to producing works brings together the arts, technology and themes regarding social appearances. He has been involved in several international exhibitions and residency programs. He presented a solo exhibition entitled *HypeVIEW* at the National Art Gallery of Malaysia in 1997 and has won several awards, such as the Phillip Morris Award, Young Contemporary, etc. He is

currently serving as a lecturer and chairman of the design department at University Sains Malaysia (USM).

Roopesh Sitharan is pursuing his passion in exploring interactive media arts and works as a tutor for the Multimedia University in Selangor Darul Ehsan, Malaysia. Roopesh finished his Bachelor of Science (Hons) in digital media arts in 2001. He has been involved in several national and international projects and showcases of digital arts, such as the 2003 International Juried Immedia Digital Arts Showcase, goto ("Net.Art") from Asia, the Sony Third Place Gallery and Asia Pacific ICT Awards (APICTA) 2002 Showcase. He was featured as the artist of the day at the Museum of Computer Arts (MOCA). He has published works and papers on the thoughts and understanding discovered concerning the practice of new media arts in Malaysia and currently contributes as an online publisher to Rhizome.org.

LEONARDO REVIEWS 2004.08

This month, Leonardo Reviews welcomes new panel members John Barber and Julia Peck, from the U.S.A. and the U.K. respectively. Their specializations, evident in the reviews, add to the range of expertise that the panel covers as well as the geographical diversity.

Featured here this month is a lengthy review by Yvonne Spielmann of Sean Cubitt's new book, **The Cinema Effect**, and George Gessert's fascinating review of **The Molecular Gaze: Art in the Genetic Age**, by Suzanne Anker and Dorothy Nelkin. Leonardo Reviews is also delighted that this month we are able to carry a review of Roy Ascott's **Telematic Embrace**, by Jan Baetens, particularly because we hope it marks a collaboration with his own journal **Image and Narrative** (<http://www.imageandnarrative.be/>).

This is a very positive take on a significant book and we hope it foreshadows a productive future for the two of us. In what is self-evidently a strong month, Aparna Sharma reviews the film **Amartya Sen: A Life Re-examined**, and regulars Roy Behrens, Dene Grigar, Wilfred Niels Arnold, Rob Harle, Stefaan van Ryssen, Amy Ione and Andrea Dahlberg have also filed interesting and provocative reviews.

All these can be read on-line at
<http://leonardoreviews.mit.edu>

Michael Punt
Editor-in-Chief
Leonardo Reviews

Advertising Outdoors, by David Bernstein

and

History of the Poster, by Josef and Shizuko Müller-Brockmann
Reviewed by Roy R. Behrens

Amartya Sen: A Life Re-examined, directed and produced by Suman
Ghose
Reviewed by Aparna Sharma

America as Second Creation: Technology and Narratives as New
Beginnings, by David E. Nye
Reviewed by Michael Punt

The Cinema Effect, by Sean Cubitt
Reviewed by Yvonne Spielmann

Close Reading New Media: Analyzing Electronic Media, by Jan Van
Looy and Jan Baetens
Reviewed by Dene Grigar

Compelling Visuality: The Work of Art in and out of History,
edited by Claire Farago and Robert Zwijnenberg
Reviewed by Wilfred Niels Arnold

Digital People: From Bionic Humans to Androids, by Sidney
Perkowitz
Reviewed by John F. Barber

Earthly Paradises: Ancient Gardens in History and Archaeology,
by Maureen Carroll
Reviewed by Rob Harle

Had Gadya: The Only Kid. Facsimile of El Lissitzky's Edition of
1919, edited by Arnold J. Band; introduction by Nancy Perloff
Reviewed by Stefaan Van Ryssen

The Molecular Gaze: Art in the Genetic Age, by Suzanne Anker
and Dorothy Nelkin
Reviewed by George Gessert

Neurology of the Arts: Painting, Music, Literature, edited by
F. Clifford Rose
Reviewed by Amy Ione

Photographers of Genius at the Getty, by Weston Naef
Reviewed by Julia Peck

Russia at Play: Leisure Activities at the End of the Tsarist
Era, by Louise McReynolds
Reviewed by Stefaan Van Ryssen

Shooting Kennedy: JFK and the Culture of Images, by David M.
Lubin
Reviewed by Andrea Dahlberg

Telematic Embrace: Visionary Theories of Art, Technology, and
Consciousness, by Roy Ascott; edited and with an essay by Edward
A. Shanken
Reviewed by Jan Baetens

Typography: Formation and Transformation, by Willi Kunz
Reviewed by Roy R. Behrens

AMARTYA SEN: A LIFE RE-EXAMINED

film directed and produced by Suman Ghose, First Run/Icarus Films, New York, NY, 2003. Running time, 56 min.

Reviewed by Aparna Sharma
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Amartya Sen: A Life Re-Examined, is a documentary about the life and work of Nobel Prize-winning economist, Dr. Amartya Sen. Rich and moving, the nearly hour-long film focuses on his contributions in the field of welfare economics, providing an overview of a vast span of his engagements and contextualizing his thoughts and propositions. The discussions within the film invite the viewer to better understand the dynamics of economic development, wherein Sen's arguments have identified the complexities and intricacies of social choice/s. As the film proceeds, it indicates Sen's thought as emulating dialogue between varied and distinct systems of reason and thinking. From such a position, one begins to appreciate some of the inadequacies of Western liberalism and the case for expanding and re-situating economic development beyond macroeconomic measures only.

The film combines interviews with a galaxy of scholars, politicians and associates who comment upon Sen's work, particularly within the ambit of the social choice theory, and discuss some of his independent research efforts in rural Bengal. Central in lending structure to the film is a conversation between Sen and economics professor Kaushik Basu, from Cornell University. In this conversation, Basu inquires deeply into the evolution of Sen's thinking, traversing both intellectual and personal trajectories. Rather than giving interpretation or explanation, the conversation is deconstructive, which facilitates in situating Sen's ideas within a larger historical and socio-political context. Through editing, this dialogue is carefully combined with other interviews, such that it serves as a delicate framework for the film, fully evoking the import of Sen's contributions and introducing the viewer to wider philosophical and cultural implications. Acutely interesting is Harvard historian Sugata Bose's succinct and lucid commentary, in which he places Amartya Sen in the tradition of thinking shared by two prominent twentieth century Bengalis: Nobel laureate and writer Rabindranath Tagore and filmmaker Satyajit Ray. Bose holds that in following this tradition, including Sen, the intellectual and cultural history of our times could be reinterpreted as being, ". . . characterized by competing and multiple universalisms," for the three thinkers attest to "lines of communication that connect different cultures." This observation is extremely useful in challenging notions of cultural distinction, innocence and orientalist sympathies, besides drawing the historical significance of Sen's contributions outside of his discipline.

The insightfulness of the film is complimented by its structure. Patiently culled facts and sustained arguments, including suitable criticisms, have been combined with a recollection of Sen's background, interesting and humorous anecdotes, memories and minutiae. All these elements wedded together lend an air of ease and rescue the film from the potential trappings of a dense exchange, which might have limited its possibilities. The film's editing, which has been noted by critics elsewhere, reflects an eye for fine and

considered construction. The style and pace of the film are smooth, transitions between sequences gentle, imagery flavorsome and economical, and music poignant - the manner of the film is subtle yet emphatic and parallels the grace and poise characterizing the trinity master's own arguments and style.

Through such a refined approach, the film transcends the gross level and dives deeper into unpacking Sen - the individual - in terms of his philosophical leanings, motivations and convictions. Especially interesting is a brief sequence from a 2002 lecture at Cornell University, where Sen states the need for a secular right-wing political party in India. While he promptly qualifies that he might not necessarily vote for it, his remark is intriguing, given that he is commonly associated

with the Political Economy approach. What makes this more noticeable is timing, in light of the recent landmark mandate marked by an anti-incumbency sentiment against the Hindu nationalist Bharatiya Janata party-led coalition, which had some of the ingredients Sen spells in the lecture: pro-business and right-wing. This is one of many sequences in the film that indicate the cruciality of Sen's thought, which consistently favors and injects complexity into social choice, rather than aligning with any kind of fundamentalist resolution, liberal or otherwise.

Amartya Sen's research into the subjects of poverty, welfare measurement and social choice have been widely celebrated. It was only fitting for an in-depth film of this kind to dwell upon his education at some of the most notable institutions in the world (Vishwa Bharati, founded by Rabindranath Tagore at Shantiniketan [West Bengal], the Presidency College, Calcutta, where Sen first encountered the writings of Kenneth Arrow; and later at Cambridge University) to foreground the instilling and development of an inquiring, concerned and appreciative attitude that is at the heart of Sen's pursuits. Not only does the film present the dialogics embodied in Sen's thinking but going one step further, it filters impulses he has interacted with, without compromising his occupations and philosophical dispositions. This coincidence of the personal and intimate with the intellectual and philosophical is evidenced throughout the film and feeds into making it a profound and outstanding text of historical and interdisciplinary merit.

Amartya Sen: A Life Re-examined is a remarkable documentary that provides a comprehensive account of one of the greatest thinkers of our times. The film is not merely informative; it is an impetus for thought and reflection embellished with valuable views and concerns for the human condition. Touchingly, the film closes with Tagore's celebrated prayer for liberation: "Where the Mind Is Without Fear . . .," from his most cherished text, *Gitanjali*.

THE CINEMA EFFECT

by Sean Cubitt, Cambridge, MA: MIT Press, 2004. 464 pp., illus. 48 b/w. Trade, \$39.95. ISBN: 0-262-03312-7.

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Another Cubitt. After the publication of two volumes on video that discussed aspects of medium and culture (*Timeshift*, 1991, *Videography*, 1993), Sean Cubitt's critical preoccupation with the phenomena of flow, change and instability also drove the discussion of digital media and networked communication with regard to the organization of knowledge, power and spatial relations on a global scale in the monograph, *Digital Aesthetics* (1998). There, he identified cartography as the paradigm of realism in contrast to perspective as the paradigm of special effect (perspectival vision is synthetic) that is essentially spatial because it organizes in space. (Cubitt coined the term "spatial effect"). More recently, in the comprehensive survey of simulation theories (*Simulation and Social Theory*, 2001), Cubitt once more stressed in a historical view the building of concepts and the manufacture of thinking processes that in the interplay with social and economic factors merge into clustered terms such as *simulation* (here again, the synthetic characteristics are foregrounded). And finally, the (up to now) masterpiece is out: a book about the "cinema effect" that takes in previous reflections on the instability and flow in the emergence of media instead of identifying interruption and defining normative patterns.

Departing from still commonly held theoretical positions, according to which cinema is roughly divided - that is, realism (starting with the brothers Lumière) and magic (starting with the stop-trick by Georges Méliès) - Cubitt is interested in the magic flow of effects that constitute cinema as a whole: as a visual effect of motion on the temporal raster of the "pixel," as an effect that through the differentiation of the "cut" constructs objects in spatial and temporal relations, and as a special effect that grounds in animation and connotes meaning, transformation and metamorphosis through the "vector" that marks the transition from "being" of the object (cut) to becoming "synthetic." Lucidly, the argument of the book develops from the beginning of the medium where Cubitt describes three positions - namely Lumière, Méliès and Cohl - that together contribute to the formation of the cinema effect. In the first and basic chapter, Cubitt builds an argument for viewing cinema as an "object" on the scrutiny of the phenomena of motion, spatial object, and transformation that are placed in terms of pixel, cut and vector.

The first, the pixel describes the moment of movement as the first magic effect of cinema. This constitutes an aesthetics of astonishment and instigates the birth of cinema as special effect. This moment in the history of cinema, as the author stresses, documents not "life" (la vie) but "liveliness" (le vif) and is shared by the social activity of the modern "flaneur" (around 1895) and is also paralleled in the new concept of life that is divided up into work and leisure time. Thus, in understanding cinema as magic, special effect is, first of all, exemplified in the work of the brothers Lumière who serve as main authority to Cubitt's statement that cinema does not represent time but originates it. Finally, cinema does not represent reality, and it is not the temporal structure that automatically and necessarily leads into the narrative. On the contrary, as the thorough (and for the non-expert, easy to follow) discussion of theories on early cinema convincingly concludes, Lumièrè's cinema is misregarded under the category of documentary, because it shows the magical transformation from life to liveliness: therein lies the magic, the specialty of cinema.

The second category that Cubitt introduces in order to liberate cinema from the dogma of realism and narrative is the "cut" that develops with the interruption of movement through Méliès' invention of stop-trick. In line with the previous argument that the cinematic events relate to the real but (with regard to its material condition) consist of discrete and fragmented elements, Cubitt's secondary discussion of the cinema as the universe of the synthetic unfolds how Méliès' technique of stop-motion distinguishes objects from their movement. Méliès, thereby, constitutes the possibility of cinematic third dimension: cinema as a spatial effect. Logically, what follows in the third, the "vector" section, is another argument for the synthetic characteristics of cinema that Cubitt identifies in the early animation films of Emile Cohl (around 1908). Clearly, here film is not narrative, not illusion of continuous flow, but fragmentation.

All of these - pixel, cut and vector - point to the cinematic way to spatialize looking. Here, Cubitt relates to Jacques Aumont's theories of painting, photography and film, where Aumont anchors the invention of cinema in the "mobilization of gaze." As Cubitt concludes: "At some point in the near future when historians recognize that the photochemical cinema is a brief interlude in the history of the animated image, representation will become, like narrative, a subcode of interpretation rather than an essence of motion pictures" (p. 97). This view of cinema maintains the importance of a material theory of film "against narrativity." However, the point is that animated film is not a sub-category of cinema, but its essence that determines the grounding principles for the development of any cinematic magic, a magic that involves the construction of movement from discrete entities and the perception of moving images, a magic that encompasses the extension of temporal and spatial features and, through its potential of the spatial map, beats off any scholarly notion of cinema representing reality - and finally, a magic that is open to the production of meaning. Cubitt stresses, in particular, the positive aspect of the vector principle of becoming (which means open-ended and mobile relationships between "subject, object and world"), because in a world where everything turns into spectacle and data, where everything is ruled by laws of commodity, the work of art "must be positive." One challenge clearly lies in the affirmation of the reality of cinema as magic: "The vector does not tell us what to expect: it requires us to think" (p. 85).

In light of this idea, the critical and political stance against narrative and realism implies an avant-garde position towards corporate cinema that has taken over since the implementation of copyright laws. This produces the apparatus of a narrative according to the laws of commodity that are highlighted in normative Hollywood cinema. Consequently, in the next two chapters ("Normative Cinema" and "Post Cinema"), Cubitt discusses the stabilization of cinema that subordinates magic to narrative. Strikingly, Eisenstein's montage of effects marks the transition from total cinema to the aesthetics and norms of totality in so-called classical film that forms the paradigm of spectacle in the 1930s and 1940s. While the cinema of spectacle exposes temporality, it takes away from the magic and cinematic effect. The task of media theory here is to understand "why and wherefore" the commodity fetishism has driven the production of cinema for 100 years. Because Cubitt argues for a stronger consideration of the mutual but problematic relations between the "cinematic object" and its audience that at the same time

drives and is driven by this practice of mediation, the following chapter naturally searches for points of resisting the "total" cinema. These possibilities are identified where cinema turns away from the paradigm of reality (temporal) and reinvestigates the early miracle and magic effect through stress on the "spatialization of time". However, in contrast to the early days of the medium, the period of "post cinema", as Cubitt puts it, departs from normative aesthetics and the elitism of the sublime; it bears the potential of becoming democratic where it follows the understanding of beauty, which is inside the world and "confronts ugliness: sickness, squalor, brutality: things that can be changed" (p. 10).

Logically, the idea of change is linked to the notion of flow that is initially identified in the principle of the vector because it connotes "becoming." But, in post cinema, the explorative naiveté and pioneer spirits of early cinema are gone and cinema has to struggle harder to connect to its magic. Even in mainstream films such as *Crouching Tiger, Hidden Dragon* and *The Matrix*, Cubitt finds roots and traces of the "instability of the vector," effects that "hover between reality and unreality" (p. 350) and that are open to ethnic issues as well, such as effects of orientalism that enter cinema. What counts here is not that Hollywood simply incorporates and swallows the "other" under its old paradigm of realism. Cubitt instead finds unstable relations, unstable oscillation between antagonistic principles (realism and simulation) in open-ended spaces of the cinematic universe of the synthetic. This constitutes another era of cosmopolitan film.

As its leading metaphor, *The Cinema Effect* starts with Christian Metz's statement that "in some sense all cinema is a special effect." What Cubitt means by this phrase expresses a counter-argument against a narrow understanding of film's relations to (physical) reality. "To the extent that all cinema is a special effect," as Cubitt previously explained in *Digital Aesthetics*: "The effects film is the cinema of cinema, the cinema of a disavowal become affirmation in an astounded moment." From the conclusion that film as a commodity inherits from perspective and painting the transformation of three- into two-dimensionality and the transformation of the temporal into the (static/spatial) spectacle, we can draw a line to the understanding of cinema as another "effect." The concern in *The Cinema Effect*, then, is to underline the construction of a cinematic reality of its own language that functions as the mediator between the viewing subject and - what Cubitt is interested in - the "object of cinema." The medium of film has always played a major role in Cubitt's reflection on electronic and digital media when he focuses on the interplay of technological, economic, social and political factors (in short, relationships of power, knowledge and aesthetics) that drives the emergence, constitution and institutionalization of a new mediums and thereby sets the frame for the unfolding of the object (and the specificity) of the medium in temporal and spatial terms - an object, however, that is subject to change and not a stable (timeless) category.

In *The Cinema Effect*, Cubitt pursues the effects that cinema produces in relation to reality from the perspective of the digital media and traces back the roots and conceptual history of terms such as "pixel, cut, and vector" that are commonly used in contemporary media language. The idea is to discuss the "object" of cinema as a conglomeration and amalgamation of cinematic effects that are responsible for a moving image. And

these effects, as they express in pixel, cut and vector, are further discussed as they establish digital aesthetics because, for example, the openness of the vector includes the "subjective role" of the individual who engages in an authorship type of interrelationship with the computer. In addition, the notion of transformation and metamorphosis - in short, all the ephemeral presentations that cinema inherits (because it is an effect of reality of its own rule and not a simple "reality effect") - make the connection to the human-machine relations that we deal with in the computer age. Where Cubitt states, "The vector is the art of curiosity" (p. 85), the focus easily extends into the discussion of European "oneiric film" that in the manner of science-fiction deals with the results of the atomic and post-nuclear catastrophes that the Hollywood cinema passes forward. Throughout the book, Cubitt "searches" for traces of cinema that maintain and revitalize its magic against totalitarian and corporate cinema. The reader, then, is not surprised that points of resistance that highlight instability, fragmentation and spatial effects for the most part are located in the realm of science-fiction, where magic is near.

THE MOLECULAR GAZE: ART IN THE GENETIC AGE

by Suzanne Anker and Dorothy Nelkin, Cold Spring Harbor, NY:
Cold Spring Harbor Laboratory Press, 2004. 216 pp., illus.
Trade, \$45.00.
ISBN: 0-87969-697-4.

Reviewed by George Gessert
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The Molecular Gaze surveys recent art involving biotechnology, genetics and DNA. This terrain is full of pitfalls not only because biotechnology presents profound social and ethical challenges but because the art under consideration does not comprise anything like a traditional school or movement. Artists have come to genetics and biotechnology by many different paths. Although these converge in art that in one way or another involves DNA, nothing like an identifiable look has resulted. Nor is this kind of art associated with any one place, even for purposes of exhibition.

Suzanne Anker and Dorothy Nelkin negotiate this complicated terrain with mixed success. Like many books of art commentary, *The Molecular Gaze* reads as much like a collection of notes as a work with a beginning, middle and end. The authors use art to illuminate a variety of subjects: eugenics, commodification of life, chimeras, "designer babies," childbirth and genetic reductionism (which defines people in terms of their DNA). There is insightful commentary on how scientific discoveries change meaning as they move out of the laboratory into the larger culture and on how molecular vision, which has come to dominate the assumptions of the biological sciences, borrows metaphors from texts and codes.

The most provocative chapter is on the new grotesque, freakish or malformed human figures that have appeared in art over the last decade and a half. These works range from Jake and Dinos Chapman's sculptures of conjoined children and Cindy Sherman's dismembered mannequins to Joel-Peter Witkin's photographs. Some

of this work reflects the hopes and fears unleashed by biotechnology, but most does not, and at times the discussion wanders far field.

The Molecular Gaze is a strikingly uneven book. It is handsomely laid out and has more than 130 illustrations, many of them full-page and in color. But its visual wealth and many insights are mixed with misinformation and confusion. There are many factual errors. Some are minor; for example, there are two dwarfs in Velazquez's *Las Meninas*, not one, and the most prominent is female, not male. And - disclosure - I was surprised to read that my work with plants involved "fictional genomes," when actually the plant genetic systems that I work with are intractably real. Other errors would be minor if a central feature of *The Molecular Gaze* were not its investigation of relationships between art and science. SymbioticA does not produce transgenic art but tissue culture art. And, without explanation, the authors ascribe awareness of evolution to Daumier, working in the 1830s, a generation before Darwin published *Origin of Species*.

There are omissions, notably of Marta de Menezes, Heath Bunting and Karl Mihel and Kim Trang. Brandon Ballengee, Adam Zaretsky, Natalie Jeremijenko, Heather Ackroyd and Dan Harvey are mentioned in a footnote but not discussed. Computer-based genetic art, an important field, is given just two short paragraphs. The most troubling omissions, however, are historical perspective and ecological vision. *The Molecular Gaze* does not claim to be a history but includes enough history, especially in the beginning, to give the impression that the past is covered. This is far from the case. There is no mention of animal breeding for aesthetic purposes and only one passing reference to plant breeding, even though these are arenas in which art and genetics have been intersecting for centuries. Steichen's 1936 show at MOMA gets only a fleeting reference. The early literature of art and genetics is almost completely ignored. Helen and Newton Harrison are not mentioned and eco-art is not discussed, even though much of it has genetic dimensions. The section devoted to chimeras and transgenics does not include so much as a thumbnail sketch of transgenic art's history, all of which is recent and well within the scope of a book concerned primarily with contemporary art. Inadequate historical perspective encourages a false sense of newness about much of the work discussed.

Most art concerned with biotechnology and genetics is done in traditional mediums and *The Molecular Gaze* appropriately gives such work a preponderance of attention. Living art, however, gets short shift. Living art is a genuinely radical development. Until the twentieth century, art was by definition made from dead matter. (Performance and landscape gardening are exceptions that proved the rule.) No painting, photograph, or sculpture in stone has self-interests or value beyond what people assign it, but living art has its own interests and, if it is sentient, its own desires quite independent of human beings. Control over living creatures means something quite different from control over inert matter. What do genetics and biotechnology imply about our relationships with other forms of life? What does it mean to bring consciousness to evolution? What roles do plants and animals play in human psychogenesis? Living art is ideally suited to engage such questions.

However, the only artist working with living things who gets anything like informed discussion is Marc Quinn, who uses living

genetic art to update portraiture. Quinn is a powerful and accomplished artist, but by focusing on people he avoids most of the questions that living art raises. In **The Molecular Gaze**, artists who do engage these questions are either not mentioned or else treated summarily. So human-centered is **The Molecular Gaze** that it could have been titled **The Anthropocentric Gaze**.

Eduardo Kac is too well-known to ignore but is treated with a mixture of fascination and hostility. He has created several major live transgenic works, but the authors mention only **GFP Bunny**, the famous fluorescing rabbit. Alba is described as "allegedly luminous." Anker and Nelkin (or perhaps only Anker, since Dorothy Nelkin died before **The Molecular Gaze** was completed) repeat speculation that Alba's green color in photographs is a result of Photoshop manipulation and write that Alba died under "vague circumstances." The author(s) suggest that Kac may be engaged in "commercial spectacle," and allow readers to conclude that Alba never existed or else did not fluoresce sufficiently to photograph.

How fair is this? Throughout **The Molecular Gaze** the authors show no awareness that unverifiable claims are not unique to **GFP Bunny**, but characterize many works of art that involve DNA. No gallery-goer can see the bacteria in a David Kremers painting or determine that they are alive, much less genetically engineered. Can we be sure that Laura Cinti's cactus has a human gene for keratin? Are the cells in Gary Schneider's photographs his, and not someone else's, or for that matter a starfish's? Does Ronald Jones shape his sculptures of cancer genes to look more Arp-like than they actually are? Anker's own work invites such questions. Are the chromosomes depicted in **Zoosemiotics: Primates, Frog, Gazelle, Fish**, which appears on the book jacket, really of those creatures? Viewers are free to dismiss any work that requires too much knowledge or faith, but we have more to gain by taking a cue from conceptual art and engaging such work on its own terms - unless, of course, there is good reason not to. The crucial test with art that involves genetics or DNA is whether an unverifiable claim is within the realm of possibility. Alba easily passes this test because, as almost everyone knows, several different kinds of animals have been genetically engineered to fluoresce. It is a minor mystery why **GFP Bunny** inspires the author(s) to indulge in attempted character assassination.

There are additional problems, but little would be gained by dwelling on them. **The Molecular Gaze** would have been a better book if it had been either more ambitious and covered more territory, or else more modest and stuck to what the authors know best: the new, grotesque birth and the metaphors by which we understand molecular biology. By trying to be comprehensive without doing the necessary work, **The Molecular Gaze** ends up being at times both untrustworthy and out of touch.

The Molecular Gaze includes sufficient information to be useful as a reference, but only for those who already know the subject extremely well. For those who do not, the pictures are worth a look, but even here one should proceed with caution. The photograph of mice with fluorescing ears and tails that is juxtaposed with Alba represents only one kind of gfp mice. There are others with much more uniform fluorescence.

TELEMATIC EMBRACE: VISIONARY THEORIES OF ART, TECHNOLOGY, AND CONSCIOUSNESS

by Roy Ascott; edited and with an essay by Edward A. Shanken, Berkeley, CA: University of California Press, Berkeley, 2003. 439 pp., illus. 41 b/w. Trade, \$44.95. ISBN: 0-520-21803-5.

Reviewed by Jan Baetens, Instituut voor Culturele Studies, Katholieke Universiteit Leuven, Belgium

If the definition of a good book is that one feels intellectually provoked during its reading and leaves the volume with the certitude of being more intelligent than at the start, then **Telematic Embrace** is the book one might be looking for. And if one is not hesitant about the old seductions of style and, most of all, that impossible thing called the "personality" of its author, this book provides even more than one could ask from a vast collection of essays in the problematic, because too overtly fashionable and therefore too easily out-fashioned, field of theory on art and electronic culture. In the case of Ascott's writings, those two elements - the visionary force of his thinking on the one hand and the personal qualities of his style on the other - may seem a little contradictory, since few authors have made such strong pleas in favor of "distributed authorship" and against the mirages of the traditional (romantic, ego-centered) art world, yet the very example of **Telematic Embrace**, which presents an extremely useful, highly representative and carefully edited anthology of Ascott's scholarly work, proves one of the basic theses of the author, i.e. that the leap towards global connectiveness through cybernetics and telematics does not exclude the human factor or prevent man from liberating himself when abandoning the traditional domains of the humanities.

Most books and essays on the relationship between art, science and technology represent either a synthesis or a "snapshot" of what their authors have been thinking or are thinking on the subject. In both cases, their writings are homogeneous: in the case of a book, the previous phases of reflection are integrated in a kind of global survey that camouflages internal contradictions and transforms previous hesitations and errors into stepping-stones on the long path leading to final insights; in the case of an essay, which normally gives just a cross-section of the author's thinking on that specific point of time and place, the lack of a global framework is not always considered a flaw, and contradictions with later texts are part of the game ("This was what I was thinking in 1984, and this is what I am thinking now, and tomorrow I may appear to think something else . . ."). The exceptional merit of Roy Ascott's works as a theoretician of the relationships between art, science and technology is that in spite of their often shattered and overtly "visionary" character, they are not just a succession of speculations in which new links replace or destroy the previous ones. Although they have not been rewritten for this publication, the texts gathered in **Telematic Embrace** span a period of more than three decades (1964-1993) and reveal indeed an exceptional coherence (and maybe even a kind of master narrative, although this word may be too negatively connoted).

This coherence is not the result of the mere application of a pre-established, teleological program or of a single, all-explaining and stubbornly adhered to theoretical paradigm. The coherence of Ascott's thinking and writing develops almost

spontaneously along some basic lines, which the author never renounces but which he always adopts following his own principles of feedback and interactivity. If one had to summarize Ascott's evolution, one might say that he gradually moved from cybernetics to telematics, and from telematics to an overall view of connectedness at both an electronic and at a biological level. In the late 1950s and during the 1960s, Ascott pioneered the interaction of art and the emerging science of cybernetics, defined as "the study of control and communication in living and artificial systems" (p.331). He then realized with the cyberneticians themselves that such a study missed an essential point, namely the fact that the observer had to be considered part of the system studied. This brought him to second-order cybernetics, which recognized the blurring of boundaries between object and observer, while emphasizing even more the importance of feedback and interactivity. With the revolution of telematics (the integration of computers and telecommunications), Ascott's ideas evolved towards what he calls "connectivism," a paradigm in which the ancient spheres of mind, body and world, or those of nature and culture, are no longer separable and in which universal interaction is celebrated as a new step in evolution (not only of man's evolution, since there is no longer a clear-cut separation of man and non-man in the universe).

All of this sounds familiar and the name of McLuhan comes quickly to mind. The philosophical underpinnings of Ascott's telematic embrace and McLuhan's global village are not without analogy: the East and the West will meet, human conflicts will be overcome by "communication," ancient hierarchies will be replaced by freedom and democracy, even love will be in the air. Ascott likes quoting (and connecting!), for instance, more or less like-minded people such as the nineteenth-century French socialist thinker Fourier, the apologist of "universal attraction;" the Jesuit Teilhard de Chardin, the inventor of the "noosphere;" or J.E.Lovelock, the advocate of Gaia; not to speak of McLuhan himself, regularly mentioned with great sympathy. Yet there are also considerable differences, which undoubtedly play in favor of Ascott. Ascott's visionary thinking is always deeply rooted in concrete, professional contexts: his many appointments (academic, advisory and editorial) all over the world have insured that he has always been in very close contact with the wishes and needs of students, artists, researchers and the interested audience. This field experience is crucial: It is the perfect counterweight to intellectual freewheeling and gratuitous speculation. What Ascott is discussing is always both visionary and down to earth. In the same essay, for instance, he can demonstrate the necessity to establish "post-institutional" ways of working and giving all possible details on the equipment of each single room of the Ars Electronica Center in Linz. It is also the warrant of a real interdisciplinary approach. Ascott's understanding of contemporary science, for instance, is a real understanding, and not that of a dilettante. Moreover, Ascott's work has always been at the service of the intellectual needs of the field. The selection of his essays in **Telematic Embrace** gives full and clear evidence of this attitude of deep concern with the didactics of contemporary art. Of course, since "everything is connected," these didactics are never bookish. Almost all important issues that are at stake in the twentieth-century reflection on art are represented here: the role and place of a museum, the relationship between art object and audience, the integration of art and society, etc.

Ascott's place in the philosophy of art (I know this label is erroneous, but nevertheless it helps to stress the importance of this work) is paradoxical. Ascott is anti-modern since he rejects absolutely the ideology of the purity of art and the celebration of its objects, and in this respect his visionary thinking can be linked with post-structuralism. One is not surprised to see that in the recent texts by Ascott the name of Deleuze starts appearing. Yet at the same time, his clear belief in some Grand Narrative makes him an anti-postmodernist. Many essays, even from the years when postmodernism was still a positive value, are very critical of its incapacity to tackle the new and to exceed the parodying relationship with the past. The very long introductory essay by Edward A. Shanken, who did a wonderful job as an editor (the very fact that the editing goes almost unseen is the best compliment one can address to an editor!) provides the reader with a very profitable historical survey of the major tendencies in twentieth-century art that one has to know in order to fully understand what is at stake in Ascott's work. It is at the same time a perfect introduction to this work itself, which it helps to interpret while giving readers a strong impulse to deepen their own interpretations. Often collected and introduced essays are broken up into two non-communicating parts: the new introduction and the older essays. In **Telematic Embrace**, the editor and the author manage to make love.

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