

Designing MEDIASPACE through the WWW, Satellite and Print

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Abstract

This paper discusses the experiences of designing and producing an ongoing series of experimental interactive satellite transmissions, incorporating live studio broadcasts, ISDN based video conferencing, and asynchronous e-mail/ISDN tutorials. A WWW site acts as a focus for these asynchronous activities, operating as a central hub, providing information and key references (papers, images, case studies, hyperlinks, etc). The convergence of these technologies generates a distributed digital 'space' (satellite footprint covering western Europe, studio space, screen space, WWW space, location/reception space). This space is further developed and extended by the quarterly publication of a paper-based interpretation of content inspired by, or translated from, the digital activity.

The digital and paper-based versions of MEDIASPACE explore a variety of 'spaces'; the WWW space, the computer screen, the studio space, the TV screen, and the printed page. There is also a novel and dynamic set of relationships established between the presenters (studio based), the participant/audience (located across Europe), and the reader. As an electronic publishing experiment in real time ('live' media) delivery, combined with a backbone of pre-packaged information ('dead' media content), the MEDIASPACE transmissions provide a provocative model for the convergence of 'publishing', 'networked', and 'broadcast' forms and technologies.

Whilst the focus for some of the MEDIASPACE productions has been to provide a 'learning' environment for the audience/participants, this paper concentrates on the efforts to forge a coherent media 'form' through the convergence of the technologies used. A variety of visual and spatial metaphors were employed to help establish a common reference for locating the dispersed community. However, a variety of information design and 'packaging' techniques used to delivery facts, processes, ideas, and concepts through such a system are discussed.

The transmissions have been funded from a variety of sources including the European Space Agency, and the WIRE (Why ISDN Resources in Education) project, initiated by the European Association of Distance Teaching Universities, European Commission 10-TEN-Telecom. The MEDIASPACE 'sub-journal' has been incorporated into the *Intelligent Tutoring Media* journal and now the CADE (Computers in Art and Design Education) journal *Digital Creativity*, both published by Intellect Books.

1. Background

MEDIASPACE is an ongoing project that explores the production and integration of interactive satellite transmissions, World Wide Web pages, and paper-based publications. The title for the paper based publication, the satellite transmissions and the WWW projects, MEDIASPACE, is inspired by work carried out in the mid-1980s (which continues today) by researchers at the System Concepts Laboratory at Xerox PARC. Human interaction through various media forms (video, computer networks, etc.) was explored with the intent of understanding the opportunities offered by computer-mediated collaboration. One of the key aspects of the research was the recognition of the different kinds of 'space' that evolve during telematic exchange. Where, for instance, does a telephone conversation take place? Is it at the caller's end of the phone line, the receiver's end of the phone line, or somewhere in between? There are the different physical locations involved; the location of both telephones, and the physical distance travelled by the phone line. There are also other 'spaces' that emerge from such an exchange, the psychological 'space' at both ends of the telephone and the imagined 'space' that separates them.

Von Wodtke defines Media Space as "The information environment connecting real and imaginary places, objects, and the people within them. The context in which people can use representations to work with artificial reality" (von Wodtke M, 1993, pp21). The intent of MEDIASPACE, whether in the 'dead' paper-based form, or the 'live' digital forms of satellite and Internet, is to use these 'information environments' and the variety of 'space' generated (real, metaphorical, simulated, psychological, and imaginary) to discuss the implications of new media forms and new fields of practice in art and design.

2. Manifesto

The MEDIASPACE 'manifesto', derived from the script of the original MEDIASPACE transmission (February, 8th, 1994) and the first MEDIASPACE publication ('MEDIASPACE' 1, *Intelligent Tutoring Media*, Vol 6, No. 1, 1995) gives a clear idea of the intent:

1: *Multimedia*: the interactive montage of information, text, sound, image, animation, and digital video, possesses many of the seductive qualities of conventional mass media (TV, cinema, radio, printed page, and cartoon,) and promises to revolutionise the way people use and work with computers. Through the likes of "Tomb Raiders", DVD, video on demand, tele-shopping, and the virtual museum, interactive multimedia seeps into our daily lives and shuffles cautiously around our peripheral vision, just within earshot. Conventional media production, computing and

traditional communication forms will wither in the bright light of these emerging technologies, unable to compete with this rich new wave of audiovisual consumption.

2: *Hype-or-Reality*: and yet the preoccupation is with bandwidths, megabytes and methodologies. We have a gleaming new technological pen, we have the hyper-linked ink, and yet we insist on reproducing our monosyllabic utterances, a cyclops with binoculars, cave painting with lasers, we lack the language, the thought process, to manipulate and articulate.

3: *Cartesian divide*: multimedia communication technologies do not simply present technical challenges, they create a range of new, conceptual, linguistic and philosophical problems requiring solutions that feed upon the expertise and experience of educators, media practitioners, creative designers, visual thinkers, hardware and software engineers, architects, mathematicians, etc... if anything multimedia has the potential to unite these traditionally separate cultures offering a vehicle for a new renaissance, a bridge across the Cartesian divide.

4: *De-babeliser*: information technology is becoming concerned more with sounds and visions than with bits and bytes. Yet in order to harness this growing communications medium designers and producers need to be fluent in or at least be able to interpret and translate each others language, languages previously spoken by film/video makers, animators, typographers, designers, architects, programmers, electronics engineers, etc.

5: *MEDIASPACE*: a forum where designers, producers and users of interactive audiovisual computer technology can speculate, present and exchange abstract ideas, designs and experiences. It aims to be a meeting place where disparate thinkers and makers can forge a new media form that inherits the strengths of the old and rises to meet the demands of the imminent.

3. Interactive satellite transmissions

Initial funding for the MEDIASPACE interactive satellite transmissions came from the European Space Agency (ESA) and the British National Space Centre (BNSC), for experimental and educational broadcasts. There were three MEDIASPACE transmissions funded in this way, as part of the University of Plymouth's STEP-UP activity. STEP-UP is part of the Satellite Centre and transmits on a regular basis to EUTELSAT and INTELSAT satellites using a TDS-4b satellite uplink. Video transmissions originate in the Hoe TV Centre and are networked by land line to the satellite uplink.

More recently funding for five interactive transmissions came from the WIRE (Why ISDN Resources in Education) project, funded by the European Association of Distance Teaching Universities and the European Union. WIRE is a European wide project involving partners and collaborators drawn from across Europe's academic and industrial communities. Some of the Partner institutions (The University of Oulu; Helsinki University of Technology; Anglia Polytechnic University; The University of Sunderland; De Montfort University; The University of Plymouth) had responsibility to deliver courses (Educational Technologies, MEDIASPACE, Sexual Assault, Research, Marketing), using combinations of telematic technologies (Video

Conference H320 standard; First Class Computer Conferencing; WWW; Satellite Reception for Eutelsat), whilst others operated as reception sites called EuroStudyCentres (EuroStudyCentre Kortrijk; EuroStudyCentre Leuven; EuroStudyCentre Antwerpen; De Montfort University; University of Sunderland; Anglia Polytechnic University; University of Oulu; Helsinki University of Technology; University of Jyväskylä; Université de Franche Comté), and were responsible for housing the reception equipment and facilitating the courses for the participants.

MEDIASPACE broadcast six interactive programmes with WIRE funding; Test Transmission (22.10.96, 11.00 - 12.00 GMT), 'Discovering Multimedia' (05.11.96, 12.00 - 13.00 GMT), 'Managing the Multimedia Process' (03.12.96, 12.00 - 13.00 GMT), 'Creating Multimedia' (07.01.97, 12.00 - 13.00 GMT), 'Virtual Environments' (04.02.97, 12.00 - 13.00 GMT), 'Multimedia and the Internet' (04.03.97, 12.00 - 13.00 GMT).

The main difference between these and the earlier transmissions was the inclusion of direct ISDN video conferencing into the studio, and the development of the simulated 3D chromakey environments (although chromakey was a vital feature of the early transmissions). Reception facilities at the EuroStudyCentres were also of a consistent standard, offering reliable feedback to the studio. The main funding considerations for the MEDIASPACE transmissions involve satellite transponder time, the uplink facility, staffing of the Hoe TV Studio, and phone and ISDN rental. The use of MPEG digital video has dramatically cut the cost of satellite time, although digital reception equipment is considerably more expensive than the domestic satellite decoder used for analogue transmissions. Some of the early MEDIASPACE transmissions were digital, the WIRE transmissions were analogue.

4. Transmission Structure

"The hybrid or the meeting of two media is a moment of truth and revelation from which new form is born. For the parallel between two media holds us on the frontiers between forms that snap us out of the Narcissus-narcosis. The moment of the meeting of media is a moment of freedom and release from the ordinary trance and numbness imposed by them on our senses."

(McLuhan M, 1964, pp55)

Whilst MEDIASPACE cannot claim to free its participants from 'numbness', the transmissions are live, and as a result have a sense of immediacy that is often missing from most contemporary broadcasts. The transmissions also offer an integration and convergence of a number of 'live' media forms.

Each transmission consists of the following sections:

- Introductory session with chromakey backdrop
- Chromakey is used as a backdrop for the introductory talk, with the chromakeyed image originating on the computer, which is in the control of the presenter. The chromakey presentations used throughout the transmissions were all constructed using Macromedia Director, and include 3D images, image montages, text, animations, Quicktime movies and Quicktime VR

movies. All of these elements can then be refashioned and reprocessed for use as World Wide Web support and for inclusion in the MEDIASPACE publication. This opening section may also involve one or two ISDN conferences.

- Interviews and demonstrations

The interview and demonstration section usually involves several presenters. Again, chromakey takes a significant role in the production, with conversations taking place in, for instance, a Quicktime VR garden shed. These interview and demonstration sections often take place in several locations. In one instance a participant (Rob Morrison) was located in the Silicon Graphics manufacturing headquarters in Switzerland, and was able to demonstrate computer equipment located in the studio, and work on a collaborative design example with another participant (Culver Epps) who was located in the studio. Several attempts have also been made at remote control of studio computers, using networked software such as Timbuktu and Silicon Graphics' own collaborative video conferencing environment. The most successful remote sequences have been where the remote users are able to see the outcome of their actions on TV through the satellite receiver.

A key aspect to emerge from the transmissions is the democratisation of production processes. Increasingly the role of the director has shifted from the control room to the presenters and demonstrators located on the studio floor. Whilst control of the camera operators generally remains with the director (presenters occasionally manually direct the camera operator to a certain vantage point), the flow of the transmission is controlled by the presenter on the studio floor through the use of the computer generated chromakey backdrops. This process has been encouraged to the extent that the camera operators often take an active role in the production by participating in studio activities. This process of stripping away the facade of the studio, where the camera is used as the 'fourth wall' (as in a stage play), has led to a greater dialogue between what goes on the studio floor and what goes on in the control room.

- Live multimedia workshop

The live multimedia workshops are a good example of this free form direction. These workshops use students from the BSc (Hons) MediaLab Arts undergraduate programme to build interactive multimedia projects, such as a World Wide Web site, 3D model, or QTVR panoramas. These projects are used as teaching examples and courseware as part of the supporting material based on the World Wide Web site. Computer-based production work on live television is fraught with danger, accidentally pressing the wrong button, crashes and lost files can and will happen. When these problems arise it is far easier for empowered and knowledgeable studio presenters to redirect activities, than it is for a director removed from the situation in the control room.

- ISDN / e-mail conferences

Experiments with live ISDN and e-mail conferences have resulted in the concentration of conferencing towards the end of the transmissions. Figure 1 shows a studio based ISDN conference. Participants at remote sites are encouraged to call in at any time during the programme, and the structure of the transmissions is normally flexible enough to incorporate these calls. However, participants felt more comfortable when the process of interaction was

clearly defined by a separate section. The most significant problem is the response of the remote participant to seeing themselves on TV. Whilst participants have been perfectly happy watching the programme from a distance, maybe e-mailing in questions as the programme progresses, the shock of seeing their image being rebroadcast from the ISDN screen through the satellite uplink has a deadening effect on the flow of conversation.



Figure 1: Studio based ISDN conference.

- Discussion

The discussion at the end of the transmission generally takes the form of a question and answer session with the programme participants. These are open to ISDN conferencing, although most participants generally feel happy with the ‘authoritative’ voice of the presenter leading the sessions. This has always been a frustrating element, where as many ‘authoritative’ systems as possible have been removed from the transmissions, the audience seem most comfortable with the traditional role offered by linear television.

5. Visual and Spatial Metaphors

“It’s about creating imaginary worlds that have a special relationship to reality - worlds in which we can extend, amplify, and enrich our own capacities to think, feel, and act.”

(Laurel B, 1993)

The most significant innovation in the WIRE MEDIASPACE transmissions has been the recognition and incorporation of the spatial differences between the various elements of the transmissions. The nature of these spaces is explored in greater detail in the next section. This section will explore the construction of the ‘worlds’ which form the imaginary locations for the transmissions. The construction of these ‘worlds’ is integrated into the development of each transmission, starting with ‘Discovering Multimedia’, a primeval garden of Eden, moving through distinct evolutionary stages with each transmission. ‘Managing the Multimedia Process’ adopted an agricultural theme, cultivating a multimedia project (the chromakey backdrop in the introduction sequence used a weather forecast as a metaphor of the production life cycle); ‘Creating Multimedia’ developed the theme of a city and industry; ‘Virtual Environments’ explored virtual spaces and multiple cities; and ‘Multimedia and the Internet’ saw the ‘worlds’ reproducing and colonising cyberspace. Figure 2 shows all five planets in sequence.

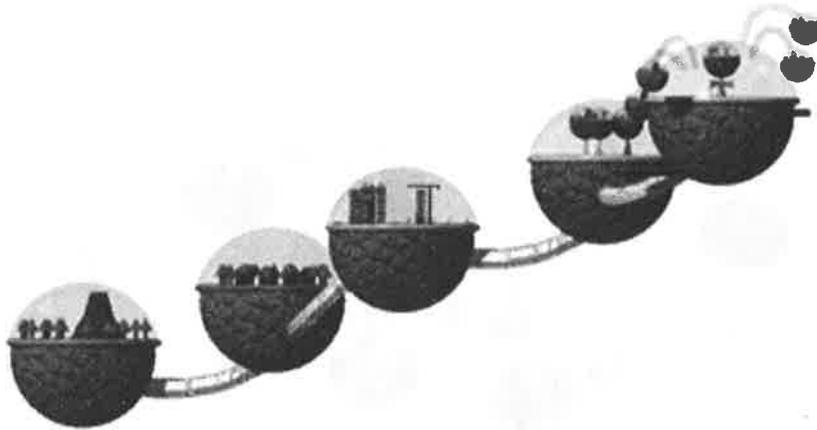


Figure 2: Five 'MEDIASPACE' worlds

The world themes were not the purest form of spatial representation. Originally a more clinical, abstract diagram of the relationships between the various elements of the transmissions was created. This can be seen in Figure 3. Here a time-based approach was adopted, with each of the transmissions shown as a key stage, linked to the remote sites and asynchronous support systems (WWW, ISDN, e-mail). The decision was made to create a more flexible form for each transmission, one that would allow several metaphors to be adopted for each programme. These 'worlds' would exist in the minds of the participants as well as the visual field of view, providing an abstract situated learning environment.

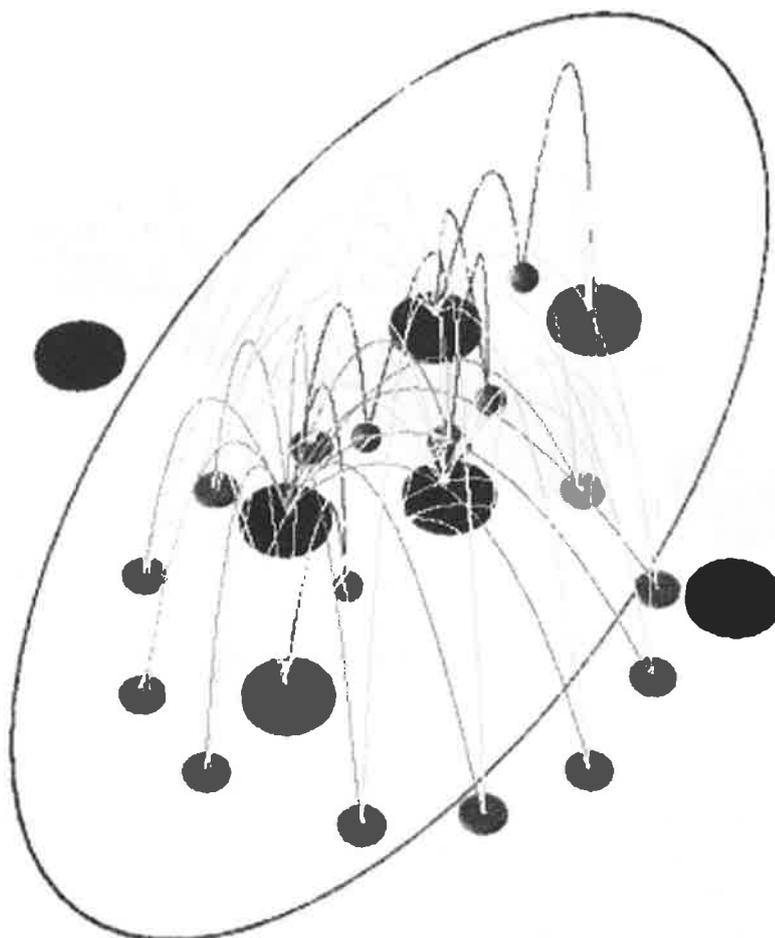


Figure 3: Map of MEDIASPACE transmissions

The city metaphor developed in 'Creating Multimedia' contrasts with many ideas of the global village and distance learning, which tend to emphasise the distance between things. The idea of a centralised focus, the planets and cities, for the dispersed activity of the transmissions creates a strong sense of place, the idea that a participant is going 'somewhere to learn', a place that is not 'here' or 'there' but that exists for a defined time, a time defined by the duration of each broadcast.

"Cities had the function, to effect fast and diverse communication and interaction through spatial proximity. Yet this function seems gradually to be passing to broad-band computer networks, leading to the prospect that geographical centrality and spatial compression are becoming superfluous. Network nodes can be anywhere. This leads to an altered urban space. Cyberspace has less and less to do with global village or electronic cottage and more and more with new urban metaphors such as City of Bits, Digital City, Cyber City, or Virtual City. Laptops which are linked via a modem with any telephone connection or mobile telephone make it possible to enter the space of the virtual cities everywhere and at any time." (Telepolis, 1995)

The 'worlds' also offered a vehicle for expanding the scope of each broadcast. The space suggested by each 'world' extends the experience of the participants. The studio space is a very active environment, with lots of people and equipment focused on generating a transmission. All of this activity is homogenised and compressed down a satellite beam, and ultimately reduced to a television screen and the speaker of the monitor. The aim of the 'worlds' was to counteract the single point of view offered by the TV screen, a greatly reduced Renaissance perspective. By providing a landscape as big as a planet it was just possible to extend the Albertian window, offering a high-tech Baroque vista.

"The eye itself has not, of course, remained in the monocular, fixed construction defined by Renaissance theories of perspective. The hegemonic eye has conquered new ground for visual perception and expression. The paintings of Bosch and Bruegel, for instance, already invite a participatory eye to travel across the scenes of multiple events. The seventeenth-century Dutch paintings of bourgeois life present casual scenes and objects of everyday use which expand beyond the boundaries of the Albertian window. Baroque paintings open up the viewer's vision with hazy edges, soft focus and multiple perspectives, presenting a distinct, tactile invitation, enticing the body to travel through the illusory space."

(Pallasmaa J, 1996, pp23)

6: Event-Space

"A space is something that has been made room for, something that is cleared and free, namely within a boundary, Greek *peras*. A boundary is not that at which something stops but, as the Greeks recognised, the boundary is that from which something *begins its presencing*. That is why the concept is that of *horismos*, that is, the horizon, the boundary. Space is in essence that for which room has been made, that which is let into its bounds. That for which room is made is always granted and hence is joined, that is gathered, by virtue of location, that is by such a thing as the bridge. *Accordingly spaces received their being from locations and not from 'space.'*

(Heidegger M, 1954)

It is important when designing the MEDIASPACE interactive satellite transmissions to consider all of the 'locations' involved, their corresponding 'spaces', and how they interact with each other. Figure 4 is a diagram of the various spaces involved in the MEDIASPACE transmissions.

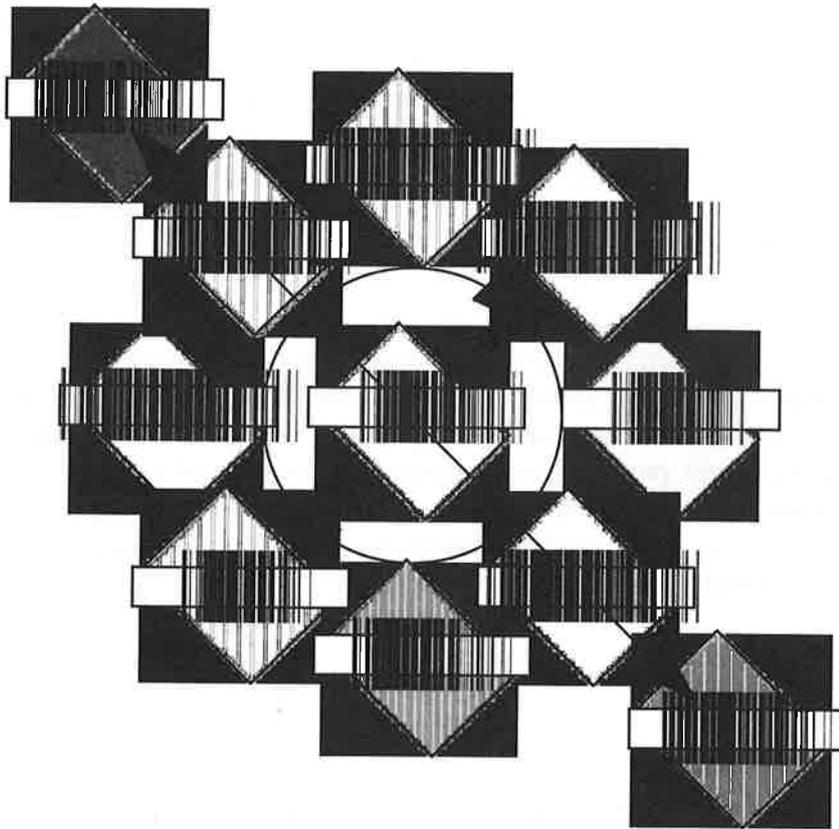


Figure 4: MEDIASPACE Event-Spaces

A: Studio. The studio space is of course key to the transmissions. However, the intent is to explore ways of creating other spaces outside of the studio. In terms of the learning environment the studio has a temporal focus and is simply the centre of attention for an hour of each of the five months. While it is visible it should be as active as possible in creating and extending the spaces that exist once the transmission is off air.

B: Control room. The control room was a 'space' that was slowly dismantled as the transmissions went on. Future transmissions will explore the further integration of this space directly into the studio space, allowing greater control to be passed to the presenters and the remote participants.

C: Computer space. The computers offered two main kinds of space, the application space used by the software in workshop sessions, and presentation sequences (such as the weather forecast and the QTVR garden shed mentioned earlier). These spaces are, apart from the 3D representations, generally two dimensional 'illustrative' environments for the presenter/demonstrator to interact with.

D: 3D Worlds. The evolving worlds are discussed in section 5.

E: Chromakey space. The chromakey space is actually very static, whilst it offers opportunities for animated backdrops and the potential for building 3D worlds, the camera is required to be fixed (no tracking, panning, or zooming) otherwise the illusion of the overlaying of live footage on computer imagery is disrupted.

F: Studio ISDN Conference. The studio ISDN conference offers opportunities for direct feedback loops (in some cases literally through audio feedback). The image from the ISDN conference is rebroadcast by the satellite and can be seen by the participant on the ISDN conferencing system and the TV monitor. Whilst this can generate problems for some participant, it adds another layer to the levels of interaction.

G: Reception TV screen. Compression and the Albertian window are discussed in section 5.

H: Reception room. The compression and homogenisation of the studio activity through the TV monitor can be greatly enhanced or further dissipated by the space at the reception location. In many cases these spaces were lecture theatres with groups of students watching. However, some of the MEDIASPACE transmissions have been rebroadcast over local cable TV stations directly to the domestic environment.

I: WWW. The World Wide Web site became a repository for 'objects' created in the other spaces. It also operated as an asynchronous space that exists outside of the time frames occupied by the other spaces.

J: E-mail. First Class was used as the main e-mail system by the WIRE project offering bulletin board facilities, real time text conferencing, and traditional e-mail. It became a useful design and feedback tool, as well as supporting participants who were not enthusiastic about, or unable to access, ISDN conferencing.

K: ISDN tutorials. These tutorials were used to support small groups of students working on workshop and application problems. They operated as face to face tutorials outside of the transmission time frame. They allowed a certain amount of intimacy and also presented two new locations for consideration, the spaces used at both ends of the ISDN conference.

The architect Bernard Tschumi's questions of Space (extracted from 4.7 questions) are pertinent when considering the spaces colonised by MEDIASPACE:

- “1.2 If space is not matter, is it merely the sum of all spatial relationships between material things?
- 1.3 If space is neither matter nor a set of objective relations between things, is it something subjective with which the mind categorises things?
- 2.0 Is the perception of space common to everyone?
- 2.1 If perceptions differ, do they constitute different worlds that are the products of one's past experience?

- 2.2 If space consciousness is based on one's respective experiences, then does the perception of space involve a gradual construction rather than a ready-made schema?
- 2.4 If space is a basic a priori category of consciousness, independent of matter, is it an instrument of knowledge?
- 2.5 Is an instrument of knowledge the medium of experience?"

(Tschumi B, 1996, pp53)

The ambition and intention is that the various spaces occupied by a MEDIASPACE transmission produce an integrated space which acts as an 'instrument of knowledge' in its own right, above and beyond the content being delivered in them.

The role of the 'participant' in the MEDIASPACE system has not yet been clearly identified. They would normally be classified as the 'audience' or the 'student'. However, neither of these words identify the intended participatory role encouraged by the transmissions, and the asynchronous space of the WWW, e-mail, and ISDN tutorials. The participant could be seen as singular figures involved in dispersed social interaction, in a landscape of interactivity. Turley identifies the term 'Spect-actor' as offering a viable alternative.

"The Spect-actor Paradigm. This paradigm is a contemporary development in theatre - again, one which has been enthusiastically adopted by TIE practitioners. I believe that it has the most acute application for the production of multimedia material - it presents an ideal to which educative interactive programs might profitably aspire.

The term, "spect-actor", is one coined by the Brazilian theatre practitioner, Augusto Boal. Boal's work, like Brecht's, is motored by an impulse for social and political change. Unlike Brecht, through Invisible Theatre and, more particularly, Forum Theatre, he has developed new theatrical forms in which members of the audience cross, ultimately *consciously* cross the boundary between watching and taking part in the action."

(Turley S, 1997, pp28)

Whilst Sermon's work with telematic installations suggests another route for identifying the role of the participants.

"Telematic Vision is a vacant space of potentiality, it is nothing without the presence and interactions of the participants who create their own television programme by becoming the voyeurs of their own spectacle."

(Sermon P. 1997)

It is clear that in such an environment the individual spaces, the technical and creative activities, and the traditional role of the audience need to be redefined.

7: Integrating Media

The MEDIASPACE'journal, a paper-based publication, is located in the midsection of the *Digital Creativity* (originally *Intelligent Tutoring Media*) journal. Beginning with Volume 9 (1998) *Digital Creativity* will be published by Swets & Zeitlinger Publishers. The intention behind MEDIASPACE is to create a highly visual forum for artists in emergent fields of digital art to express their ideas, proposals and creations. The emphasis on publishing papers in UK academic institutions has not served the arts academic community well. Artists focus on the making of 'things' and not, traditionally, on writing about them, although developing a stronger theoretical framework for digital art works should be encouraged. MEDIASPACE was created to allow artists to present their ideas in a visual form, not merely illustrated articles, but by developing a symbiotic relationship between image and text. These ambitions are in harmony with the graphic work of David Carson, whose digital montages of image and text could be seen in the same genre.

"David's work communicates. But on a level beyond words. On a level that bypasses the logical, rational centres of the brain and goes straight to the part that understands without thinking. In this way it works just like music does - slipping in there before anyone has a chance to stop it at the border and ask for papers."

(David Byrne, 1995)

The digital manipulation of images within MEDIASPACE and their augmentation through montage with other visual information and text, enhances the information conveyed by printed page.

"A new sense of the notion of information has been constructed around the photographic image. The photograph is a thin slice of space as well as time"

(Sontag S, 1973, pp22).

MEDIASPACE draws as much from the realm of digital photography as it does from desktop publishing.

"Where there was once a photography which always ended up with its back to the wall, or pressed between the covers of a book, impenetrable by other media, now we are seeing the emergence in digital photography of a permeable datafield, whose sources may well be photographic, focused on a photonic given, but whose image is a lightly woven structure, open to other image sources, other insertions into the purity of the photographic field. Esther Parada sees it as "an electronic loom... into which I can weave other material... an equivalent to Guatemalan textiles, in which elaborate embroidery plays against the woven pattern of the cloth.""

(Ascott R, 1996, pp165)

The montage techniques employed by MEDIASPACE are extended by its symbiotic relationship with the MEDIASPACE satellite transmissions. This is clearly demonstrated by the ABAA project, carried out by Obsolete, the Camerawork Gallery and staff at the Media Arts group at the University of Plymouth.

“ABAA is a straightforward transfer of noise from one space to another via the Internet. It is a live audio transmission of a sheep grazing a field in Devon to a gallery in London for the listener to ruminate over. It operates simultaneously across a range of spaces; from the space of production, the field, to the space of consumption, the gallery, through the medium of exchange and the space of the Internet. It is a continuous sound, “live” and unrecorded with no edit. These working notes are available for grazing by the reader, forming a further spatial relation between the head and page.”

(ABAA ‘MEDIASPACE’ 2 and Obsolete WWW site)

ABAA exists in several forms (Figure 5). There is of course the original live web broadcast from the Devon field to the London gallery. This is represented, along with the discourse which surrounds the event, on the Obsolete.com web site. Much of the content from the event also exists in processed form in MEDIASPACE 2 (Intelligent Tutoring Media, Vol 6, No’ 3/4, 1996). The final WIRE funded MEDIASPACE transmission contained a reversioned performance of the original ABAA, with simultaneous multilingual translations, and a sheepdog as a camera operator.





Figure 5: Images from ABAA.

A more pragmatic example of media integration would be the development of learning materials for the satellite transmissions, and the MEDIASPACE web site. The 'Jump' game (Figure 6) was developed live on air, using Macromedia Director, during one of the interactive multimedia workshops in 'Creating Multimedia'. The workshop took the participants through the process of constructing a simple interactive game using object oriented Lingo. The 'Jump' game depicts suicidal multimedia developers leaping to their deaths from a tall building (one of the buildings that makes up the cityscape of the 3D world). Following the transmission a shockwave version of

the 'Jump' game, along with the text-based tutorial material for the object oriented Lingo, were made available on the MEDIASPACE web site.

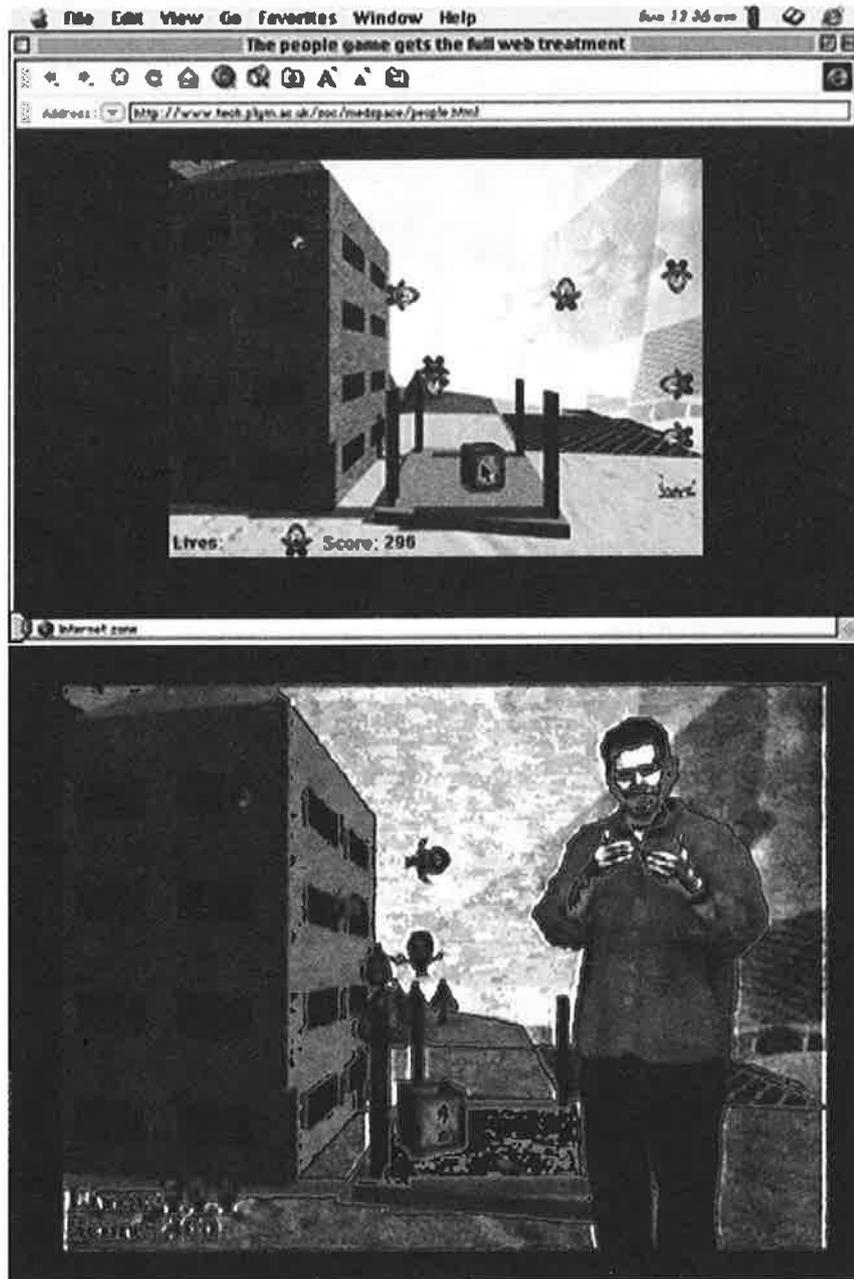


Figure 6: Shockwave and chromakey versions of 'Jump'

9: Conclusion

Evaluation of the WIRE MEDIASPACE transmissions is continuing, so information, apart from anecdotal, concerning its pedagogic success has yet to be published. In terms of the design process developed for interactive satellite transmissions, their integration with the WWW, and

the reversioning of information for print are concerned there is still much to learn. Several interactive satellite transmissions are planned for 1998, and the MEDIASPACE journal will continue as part of *Digital Creativity*. The biggest problem facing MEDIASPACE is its identity. Funding for the satellite transmissions is generally obtained for educational productions, and not for the more aesthetic concerns of MEDIASPACE. The confusion generated in the EuroStudyCentres by the ABAA performance (even though it incorporated multilingual translations) also suggests that the participants need to develop a greater awareness of the potential of being spect-actors. Is MEDIASPACE an aesthetic art and design 'product'/forum or an exercise in 'Distance Learning'? In many instances it has satisfied both criteria.

The 'spaces' discussed in this paper need careful consideration and development. Plans for future MEDIASPACE transmissions incorporate the further extension of these spaces by integrating collaborative VRML environments located on the WWW. Consideration needs to be given to the enhancement of these virtual 'spaces' so that they may best utilise their potential as 'instruments of knowledge'.

Paik's description of the responsibilities of satellite art is appropriate when considering the scope of the MEDIASPACE transmissions. It is too easy to parallel these transmissions with traditional television. The convergence of the media forms used in MEDIASPACE creates new responsibilities as well as new opportunities.

"Satellite art in the superior sense does not merely transmit existing symphonies and operas to other lands. It must consider how to achieve a two-way connection between opposite sides of the earth; how to give a conversational structure to the art; how to master differences in time; how to play with improvisation, in-determinism, echoes, feedbacks, and empty spaces in the Cagean sense; and how to instantaneously manage the differences in culture, preconceptions, and common sense that exist between various nations. Satellite art must make the most of these elements (for they can become strengths or weaknesses), creating a multitemporal, multispatial symphony...

(Paik,NJ, 1984)

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It should be noted that the an interactive satellite transmission involves the collaboration of a significant number of people and organisations. Thanks to all those who have made MEDIASPACE possible.

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