Articulating electronic space for interaction

Mit Mitropoulos

Globalization and local identity as a together/separate experience

When I am asked for a Local Identity example I am rarely challenged when I use my own (MITROPOULOS, 1987), but on Globalization I know that an issue like my definition of Sustainability is certainly not everybody's choice – and I ask "why else have internationalized issues?" (GILLESPIE, 2001; MITROPOULOS, 2001b, 2004).

It seems to me that when in our days people lose their values, globalization becomes their local ID – and it is usually somebody else's priorities. Contrary to this implosion phenomenon, my experience of globalization has been to put my local identity into a broader context. And so with this paper, for the World Society for Ekistics meeting in Hikone, Japan, 2005. That is looking into Japan (TYRWHITT, 1974[1]) in the context of the Pacific for which two proposals are being attached.

As a 5-year-old, I remember growing up being permanently together and separate at the same time, in the context of an extended family of mariners in all oceans and related ports. Globalization to Local Identity was as with being Together to being Separate, a Tog/Sep simultaneous experience. Always a close friend of the radio-operators on all the ships with mother in the crewlist and father as captain, the boat was a child's Tog/Sep environment to me. Same with my intern school experience on the island of Spetses, subsequently looking at all islands as moored boats. It was then only natural that as a student I considered space as a network, and if you do that, then you are
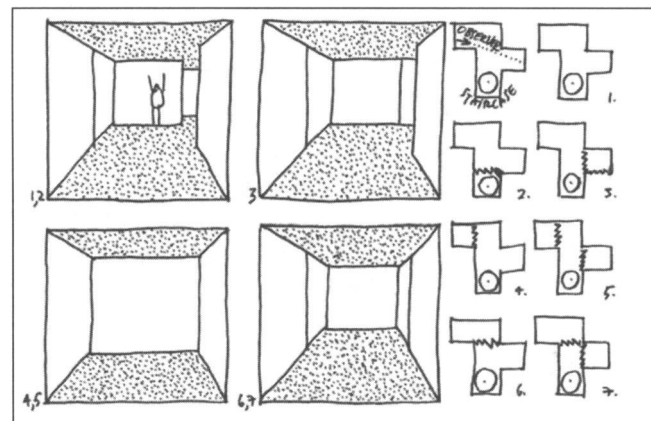
Fig. 1: Plan articulations 1 to 7, and successive related perspectives, as folding panels appear and disappear. It seems this is an approach similar to the Japanese Shoji and Fusuma (sliding doors).

halfway into starting to understand Electronic Space.

As a Brussels Royal Academy Third Year architecture student, I was seduced into designing what I called "toothpaste architecture" (fig. 1) (MITROPOULOS, 1969, HAMMAD, 1988) – I can see it now as an approach similar to the Japanese Shoji and Fusuma use of sliding doors. It was the beginning of my considering space as a network, and it was then that Panayis Psomopoulos introduced me to Ekistics research activity, and I felt alone no more. I used this Space Networks concept two years later to design for my finals a building in downtown Brussels – they call it now an Urban Architecture approach, otherwise Network Architecture (fig. 2), (MITROPOULOS, 1974, 1975[2]).
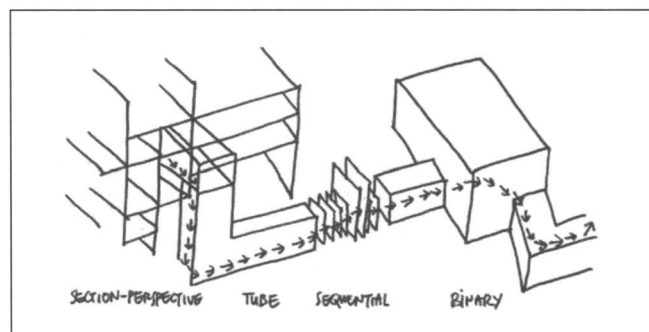
Fig. 2: One preferred path of an urban pedestrian, where for clarity the four Space Networks Notation elements are shown in a clear-cut order and not simultaneously.

Fig. 3: "Line of the Horizon" geopolitical art project operations node. Activation day 27/11/86 in the Mediterranean Biennale Communications Center, Thessaloniki, Greece. The six clocks overlooking Ops area indicate the 6 time zones of our activity over the 27 participant nodes from Kharg island in the Persian Gulf to New York, NY. 1-the clocks, 2-viewer on mezzanine, 3-copier, 4-overhanging monitor for Thessaloniki Horizon playback, 5-how telecommunications networks work, 6-s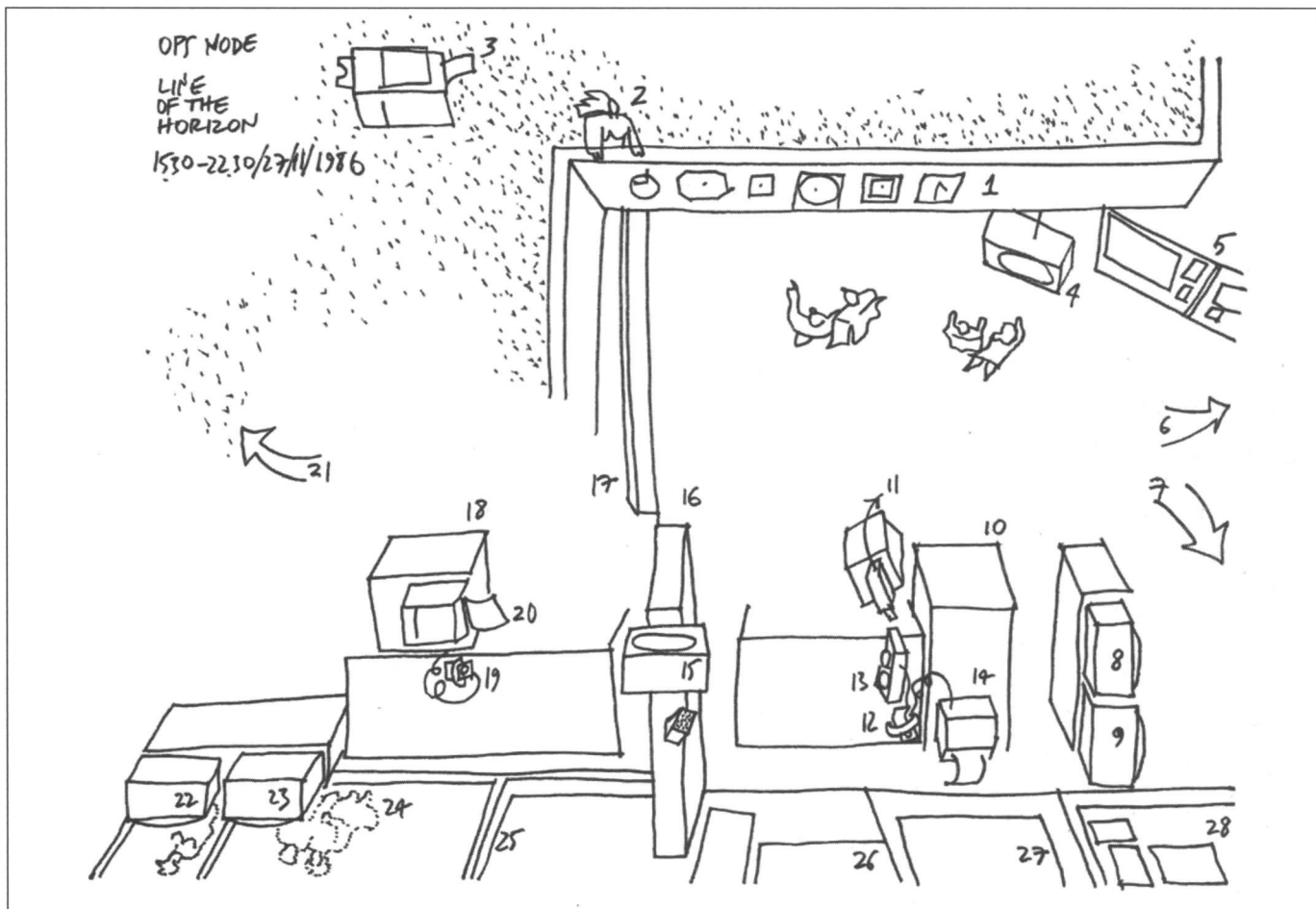chools' discussion area, 7-exit to street, 8-operation live, 9-Horizons' playback, 10- First Operations spot, 11-documentation video live, 12-phoneline, 13-radio equipment as loudspeaker, 14-fax, 15-Horizons' playback monitor, 16-viewing corridor, 17-viewing corridor two steps down, 18-Second Operations spot two steps down, 19-phoneline, 20-fax, 21-staircase to mezzanine floor, 22-Horizons' playback, 23-Operation live, 24-street outside, 25-fax printouts, 26-fax printouts, 27-Horizon activation process info, 28-setting the network documents.

Taking Space Networks into the visual arts, we get Geopolitical art setting up worldwide communications networks, to be activated using for content concepts and issues that are meaningful both at the international and local scales of man's experience – as with figure 3 when we covered 10 time zones, of which 7 were of interest to us during the 6 months of preparation, for activation of the network in 6 of them from the Persian Gulf to off the Portuguese coast and the New York-Toronto longitudes (MITROPOULOS, 1992, 1996). It is on both these local and international scales that UNESCO's international commission operated in good time for the study of communications problems (EL-OTEIFI, 1978; PAL, 1978; ABEL, 1978). It was my time with the M.I.T. cable TV system people at EVR – a productive and enjoyable collaboration with Dr Edwin Taylor (Relativity expert in Physics) and under him Dr Niti Seth-Salloway (Media, and Interpersonal relationships).

It appears ironic to me that besides current Tog/Sep communications lifestyles (from extended family to nuclear, to monoparental – for which reason I would welcome a theologian's critical commentary on my work), Tog/Sep characterizes both telecommunications systems that afford us connections over an otherwise forbidding distance, and has also been a tool for ar-

chitects[3] to organize spaces for communication at a variety of perceptual levels: to see but not to hear, to hear and see but not to touch, to hear but not to see, and so on. Playing and Familiar daily situations give us a wealth of Tog/Sep occasions. Traditional-anonymous architecture gives us the Semi-private/public spaces (S-p/p) that are in fact Tog/Sep spaces.

The Semi-private/public spaces towards a handbook for the Face-to-Face (F2F) Installations Series

Ten types of S-p/p spaces have been located in the Cyclades islands group, Aegean Sea, Greece (MITROPOULOS, 1976, 1982). Along a Cyclades settlement road you move from one Tog/Sep space to another Tog/Sep space, from one S-p/p to the next S-p/p. Or at least you did in the past. Active S-p/p spaces are one sustainability indicator – for the life and death of S-p/p spaces in the Cyclades see Mitropoulos' (2001a) Tinos island WSE conference presentation, and I have started on an comparative approach to S-p/p spaces and F2F installations[4] with reference to the issue of distance – community would be one other interesting reference point.

The Face-to-Face (F2F) series is an articulation of Tog/Sep spaces using technology.[5,6] It is a series of 2-way interactive videocommunications installations. They make use of minimal equipment to articulate Electronic space for two participants to interact in it. It is exactly for this reason why F2F-2, which is a portable version of 2-way interactive systems (see closed circuit TV on the urban scale, on which research the series is based), was well preceded by F2F-1. It is also for this reason that those who have copied the F2F series (without giving reference to it) get stuck into repeating F2F-2, and can develop no further – they also activate it to produce a show, of which deception the installation (and I) have been guilty as we are told in Moeglin's text that follows.[7]

During my 1978-1979 first year as a Research Fellow at M.I.T., when I was given office space with the Department of Architecture, I got involved in the campus-wide (Small Polis scale) 2-way interactive cable TV system operation of EVR, having singled out cable TV for being the technology at the time whose application related to policy and legislation. A most fruitful collaboration was to start and lasted for 6 more years. In that period I was stationed with CAVS of M.I.T. a much promising Center active in Art-science-technology and run by Sky Art director Otto Piene. In 1982 F2F-1 was first outlined as a result of one workshop during two "TV-Images" exhibitions hosted by the Hellenic-American Union, Athens. It was then repeatedly set up at EVR upon my return to M.I.T./USA in March 1983, and presented to CAVS one year later 3 days flat upon my arrival in the USA, when I was invited to the Artists Speak events for which I had F2F-1 in the context of communications with and without technology. The two participants were Together physically, touching one another and able to hear each other too – but unable to see the other person, visually Separate. The F2F series was thus launched (MITROPOULOS, 1991), and it is one way to understand this new networked space we live in. For lack of theory of art references, I had to work out my own set of New Aesthetic criteria[8] to help me develop F2F in the long term. In this I benefitted a lot from my intense Mail art-Performance activity which meant the traditional artist-model relationship – the model being in another city/next door with the connecting door closed/or like in most cases in another continent – with my warm appreciation to all the ladies (MITROPOULOS, 1979, 1996, and WELCH, 1995).

F2F simulations were activated in 1984 and 1985, using the M.I.T. cable TV system. It was not the first time the system was activated by CAVS Fellows, but it was the first time organization of space and behavior in it was on the agenda. F2F-2 (fig. 4) was proposed for the CAVS participation in Electra, Paris in January 1985. It was not included in this CAVS expedition to France, but it got invited for an activation in Maastricht University, Holland, in November 1985. And as coincidences go, it got invited to Paris in January 1986, to the Artcom in the Beaux Arts (one year exactly after Electra) – Artcom having been at the time a promising European initiative.

Figures 4-8 is one way to pass from one installation to the next, using the same equipment, whilst observing the variety of perceptual levels at play: from the F2F-2 technology-mediation because of distance (Question: How will they negotiate towards a dialogue?), to F2F-4 with a vertical barrier visually separating them (Question: Will they stick to technology-mediation, or will they by-pass the barrier?), to F2F-3 having pulled away the barrier (Question: will they remain focused on their respective screens?), to F2F-10 and close to one another but with backs turned (Question: Will they turn around?), to F2F-1 and touching each other back-to-back (Question: will they ignore the TV-monitors in front of them and their electronic Face-to-face?). This final F2F-1 has the Tog/Sep as a conflicting information environment, and in all cases the produced signals having two extra TV-monitors talking to one another. The last presentation of
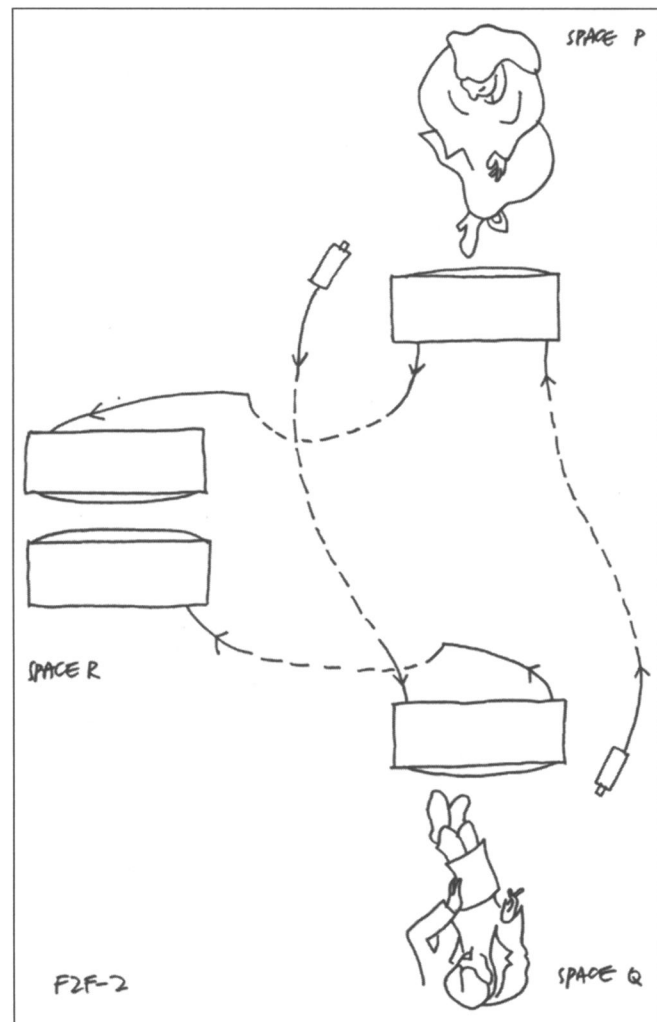
Fig. 4: F2F-2 has 2 cameras and 4 monitors (a) affording 2 participants to communicate over the distance, and (b) subsequently activating 2 of these monitors to "talk to each other."

F2F-1 was in Benevento/Italy (COSTA, 2003).

This is towards a Handbook that will hopefully make the series more accessible to those being educated in space articulation with and without technology; and to researchers such as using F2F-1 for Developmental Psychology experimentation and Behavioral space observation in general,[9] to cyberpsychologists at large.

I was unaware that Frank Popper (POPPER, 1993) had been interested in the Tog/Sep concept, and had said how "the F2F series is made up of communication installations that are especially striking. The artist reduces to their simplest expressions telecommunications systems that afford us to be at the same time together and separate at various levels of perception. These cable TV installations in which the information travels in both directions, are shown sufficient to explore the impact of interactive networks and communications technology in general on organisation of space and related behaviour." He provided no figures, and a very brief text (I do hope he will expand on another occasion).

However, postgraduate researcher Karina Ordóñez Flores at the Université de Paris I Pantheon-Sorbonne (Directeur de Recherches Anne-Marie Duguet), (ORDOÑEZ FLORES, 1996), checked Popper's book (POPPER, 1993) in the spring of 1996, his summary remarks on the F2F installations caught her eye,

178
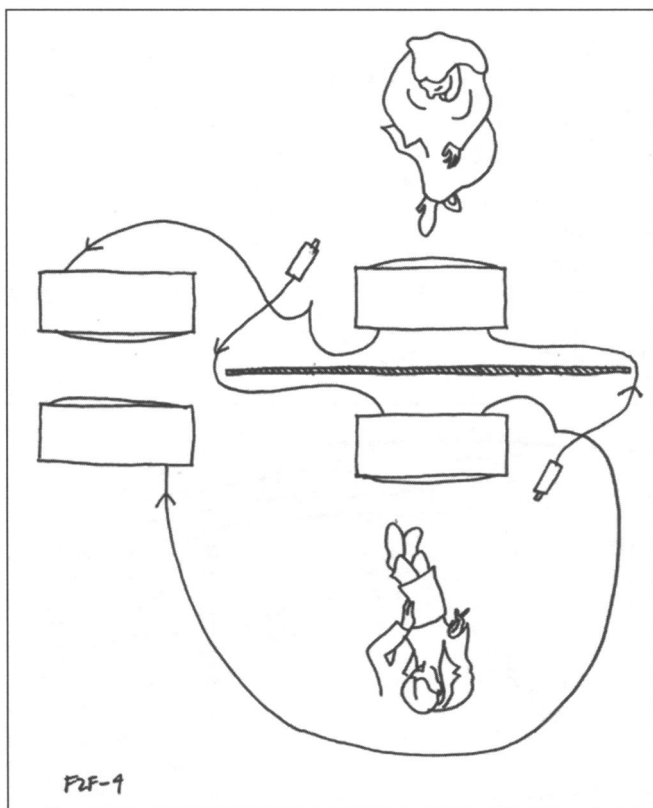
Fig. 5: Passing from F2F-2 to F2F-4, which has one man and one woman interact through TV-monitor screens. They are in the same physical space, visually separated by a vertical barrier-panel.
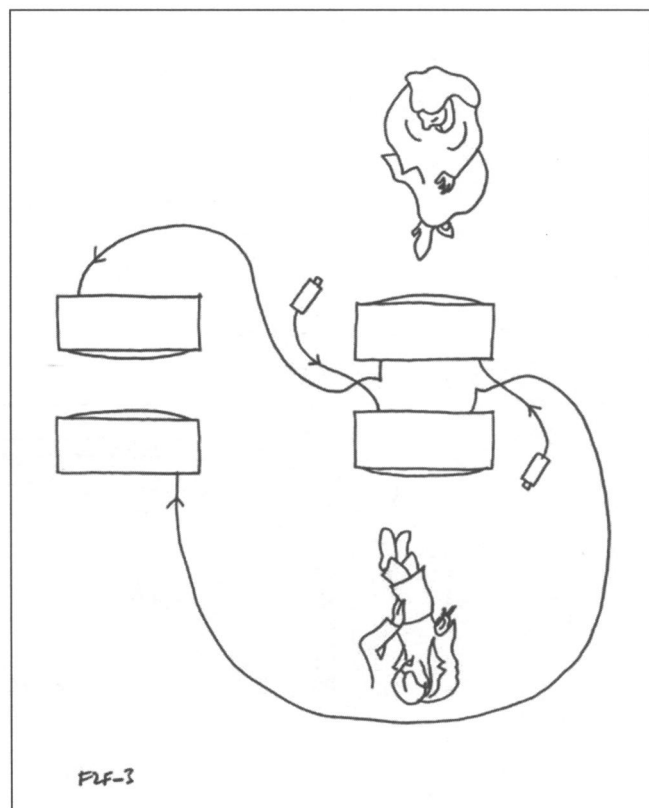
Fig. 6: Passing from F2F-4 to F2F-3, that keeps having the man-woman interaction possibility as technology-mediated, in which case it feeds the 2 TV-monitors facing each other at 50 cm.
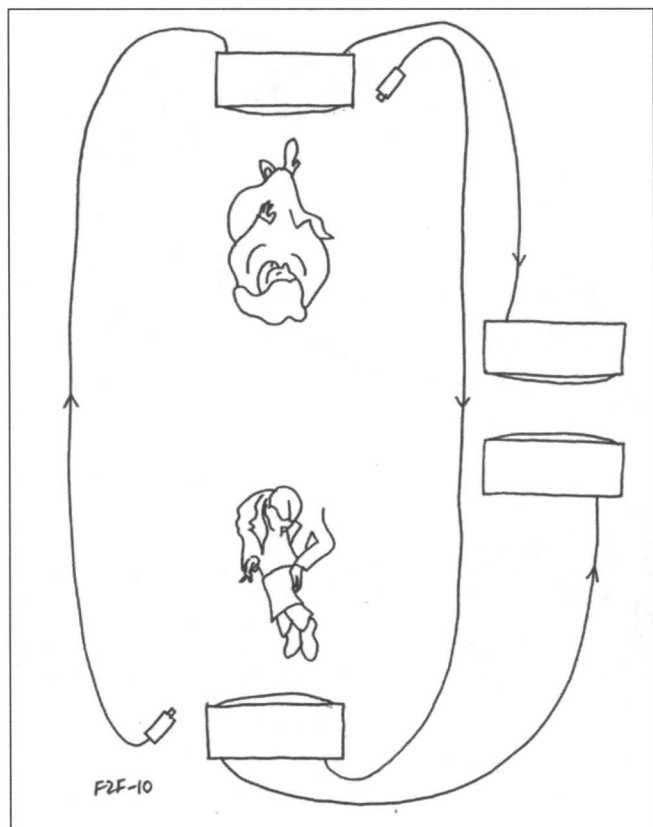
Fig. 7: Passing from F2F-3 to F2F-10, where the participant couple would have to turn around now, if they wish for a physical line-of-sight.
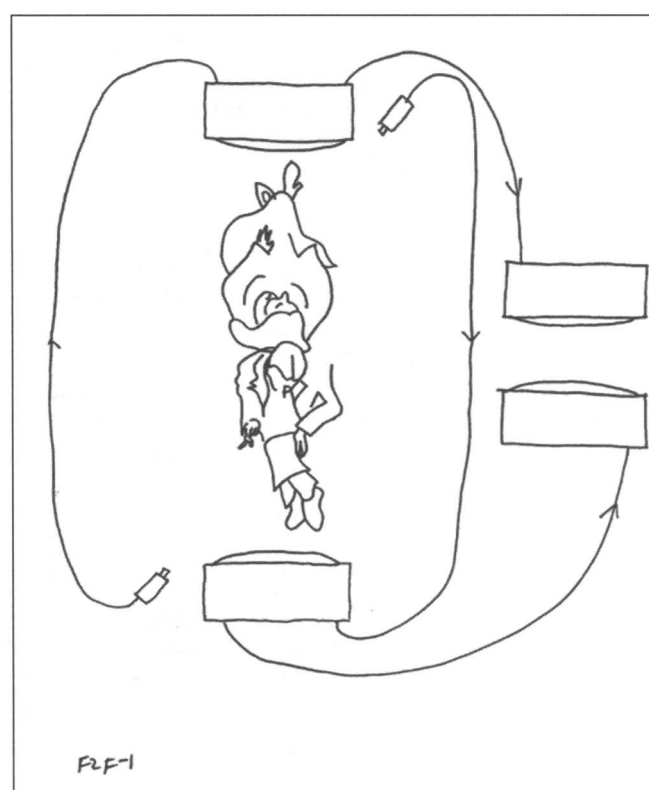
Fig. 8: Passing from F2F-10 to F2F-1, with the two persons leaning against each other back-to-back. In conflict with this physical body contact, they interact in electronic space.
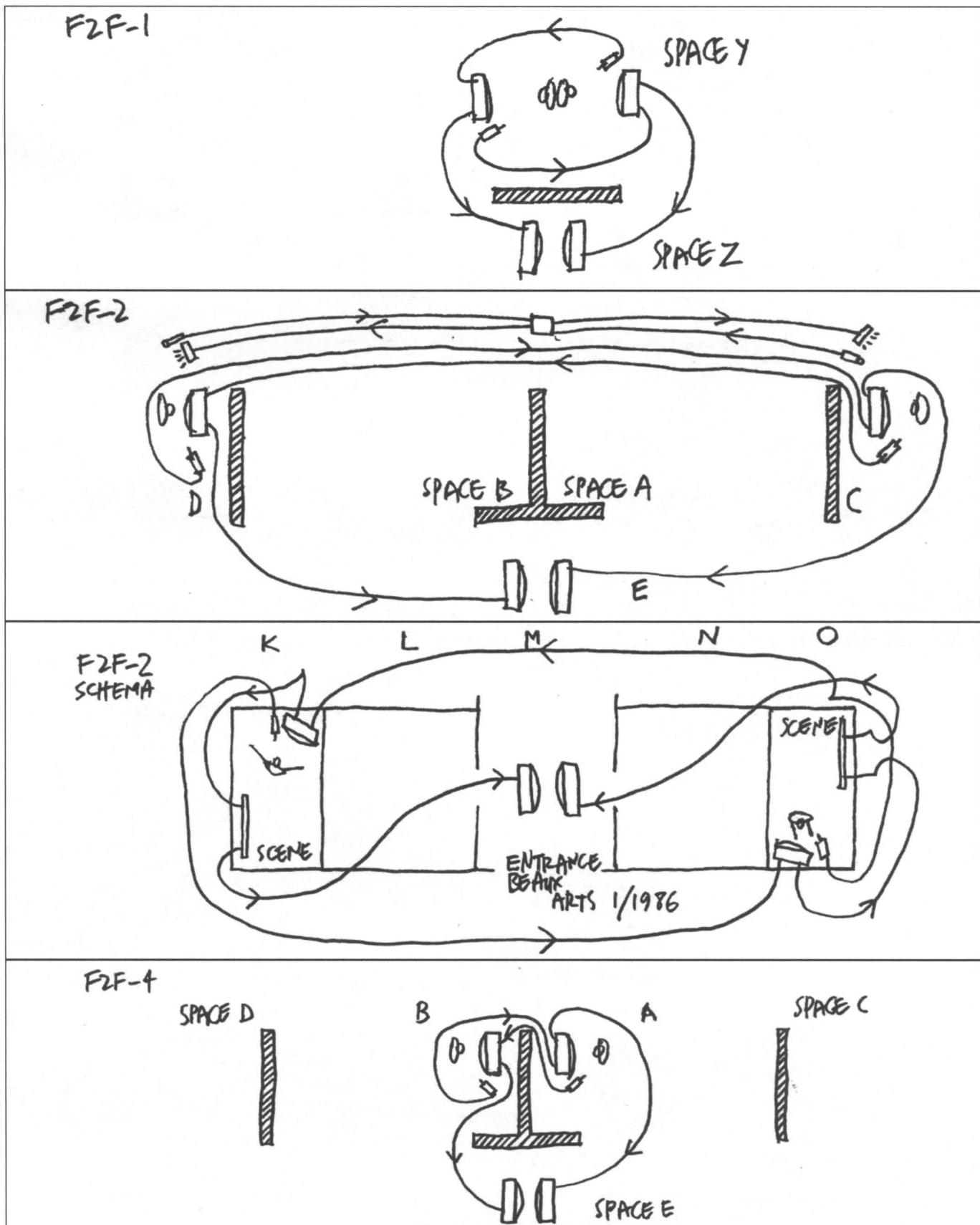
Figs. 9-12: From top to bottom fig. 9(F2F-1), fig. 10(F2F-2), fig. 11(F2F-2), fig. 12(F2F-4). All refer to the Karina Ordóñez Flores text. Figs. 9 and 11 are deployed in same Physical space context. Figs. 9 and 10 is the same installation, where fig. 10 is how the F2F-2 connections were unfolded in the Paris Beaux Arts in January 1986.

called me on the phone to tell me of Popper and needing more – actually got me as I was leaving for Brussels airport, and I did promise to help her. And did so.[10] Her text follows. She is lucid on the F2F series, and only the four figures (9, 10, 11 and 12) that go with her description-commentary are mine.

The Karina Ordóñez Flores description of some F2F installations, being enthused over their Tog/Sep capacity, and the spectators' perception of two machines talking to one another

New means for communicating

We currently have the tendency to believe in the paradox that the numerous possibilities offered to us by the networks in relating to ways of communicating, also have the individual run the risk of isolating himself. The argument goes that he/she would tend to want to prefer such a networks-mediated communication to the relation he/she can have with another person with whom they actually share the same space-time. Faced with such a fear, we should remind ourselves that whilst on the one hand communications networks can function as technology organized in order to afford, to any two geographically separated persons, the means to relate to one another, we must not forget to stress how the very nature of such an exchange is in fact undergoing a transformation. This is because the screen of the TV-monitor/computer has the double function of being both a bridge as well as a frontier between those two persons at a distance, with the net result of securing the continuity of natural human contact. In fact the mediating machine intrudes and determines conditions within which the communicating individuals will relate to one another, because whilst constraints are introduced new possibilities open up at the same time. Consequently, just as the telematic networks take charge of an heterogenous variety of data and have them transmitted over the long distance in minimal time, perceptions such as touching or smelling are not as yet transmittable.

Face-to-Face: The transformation of ways for humans to relate to one another

The F2F series created by Mit Mitropoulos is made up of a good number of installations where the technology that articulates them, imposes itself on the ways the two individuals relate. The on-going series has originated from research carried out by this researcher-artist on the Participatory Capacity of 2-way Cable TV Systems in the USA (MITROPOULOS, 1983b, 1985). This series aims to illustrate the paradox of the Together/Separate principle by directly referring to the interactivity of 2-way cable TV systems, and furthermore as opposed to 2-way "response" systems. To that purpose he has articulated installations, where the individual is invited to actively participate in (or simply observe) the experience of verbal exchange through machine mediation in different contexts.

My attention has been captivated by three of these installations of this series since, without for instance using a satellite connection, they do nevertheless take into account the anthropological implications of the idea of interaction at a long distance. The three installations are F2F-1 (fig. 9), F2F-2 (fig. 10), and F2F-4 (fig. 12). These are very simple installations using 4 TV-monitors and 2 videocameras. Each one of the cameras is connected to one monitor. In turn, each one of these TV-monitors is connected to one other monitor. These latter two TV-monitors are specifically placed at 50 cm apart facing one-another, on

stands that bring them to our eye-level. In consequence, the image of either participant recorded by each camera is transmitted simultaneously to two monitors: to the one placed in front of the interacting partner, and to the other monitor placed at a distance of 50 cm in front of its partner-monitor.

What differentiates these installations is the organization of space hosting each one of them, as well as the use these installations are being put into. The artist's goal is to experiment with different types of interaction as afforded by communications networks, which in this series always end up in a dialogue between two TV-monitors facing one another. It is clear that the user of digital networks is interacting at first with his/her computer or TV-monitor screen, whose recorded information is then transferred onto the screen of one other machine. The person at the receiving end in turn transmits similar information to his/her interacting partner, following exactly the same process. The final impression one gets from such a type of interaction is that the different TV-monitors involved are talking to one another all by themselves. Mit Mitropoulos appears to offer us various means of possible machine-mediated interactions, which always appear to the non-actively participating spectator as an exchange between machines. On the other hand, the intimacy of the active participants mixes well with the revelation of their discourse. In fact the installation mediates the verbal exchange. But the spectator does not have the possibility to follow this mediation as if he was looking at a videotape because the two TV-monitors are too close to each other, forbidding the spectator such a comfortable view. The spectator can best perceive the complexity of this activity only by placing himself next to one of the two active participants, that is, by observing his behavior, and then looking at the facing TV-monitor to observe the behavior of the other participant. He can in fact anticipate the exchanges transmitted by the two TV-monitors facing one another at a distance of 50 cm.

The different installations as set up by the artist, permit us to observe the way we as users adapt our behavior to the use of new communications technology, whose purpose is to recreate our presence at a long distance.

As far as the spectators of F2F-2 (fig. 10) are concerned, they are free to move around in spaces A, B, and E. Whereas in spaces C and D they perceive two persons involved in machine-mediated dialogue, in space E they find themselves looking at two TV-monitors that are themselves involved in a dialogue. This means that any member of the public can choose to actively participate or not, fully aware that as an active participant he will be deprived of his own TV-image. Just like with communications networks, we cannot at the same time be both actor and spectator.

● **F2F-1: The notion of presence-at-a-distance being reconsidered:** This installation was also invited to the Artmedia Festival, Salerno/Italy in May 1986 – on which occasion Professor Mario Costa recorded his observations (COSTA, 1990). Two different spaces, Y and Z, are involved, organized as in figure 9.

Space Y has 2 stools, 2 TV-monitors and 2 videocameras. Two persons can sit on the stools. They are situated back-to-back, but can however see each other on the two TV-monitors placed in front of them and connected to the two videocameras that are transmitting their faces respectively to the person each one is interacting with.

Space Z is next to space Y. It consists of two more TV-monitors placed on eye-level stands, to face each other. Each one of these latter TV-monitors shows the images transmitted by each camera on the TV-monitor screens in space Y.

The public can move from space Y to space Z, and alternatively observe the communication process taking place between the two persons physically present. And also the electronic dialogue between the two TV-monitors, as Costa notes. People in twos can also choose to actively participate in the installation

by sitting on either of the two stools.

In this installation, the artist has the public in a very particular situation, where the physical presence of the two participants together gets blended with geographical distance. In fact the two persons interacting are sharing the same space. They can hear one another, talk to each other, and even touch one another. But for the one to see the other they are obliged to use the TV-monitors respectively in front of them. That is why the active participants tend to forget each other's physical presence, and start using the visual image of the person they are interacting with as their only reference. We have a decomposition of their bodies as being transported by their images. As participants ourselves, this happens in such a way that the image-as-reference becomes in fact more real than the body we are actually touching. In consequence, Mit Mitropoulos has us question Derrick de Kerckhove stating that "apparently the telephone is not enough, nor is TV enough to have us feel that we are present somewhere – everywhere we have access to, and that we are therefore responsible for all these places the moment we have access to them. We cannot start believing in a new planetary dimension unless we can also actually perceive it by touch. When we do touch, we can then in turn believe what we see, and what we hear" (DE KERCKHOVE, 1988).

There is a shifting from reality to the image of that reality, as it takes place in space Y of this installation. It tells us of both the difficulty we have in handling information of a different nature, and also of the images that actually rule our era. In fact, those involved in interaction are confronted with two different types of reality: the one is material, the other referential. The material presence is perceived by touching and hearing. The reference of this presence is captured visually in the form of the analogue image with which we are interacting, without taking into serious consideration the fact that it only represents the person we are actually touching behind us. It is in that way that the real presence of the other person we are interacting with becomes immaterial, due to the intrusive mediation of technology.

The experience as afforded by Mitropoulos in this installation takes into account the phenomenon inherent in new technologies of communication: the computer solicits interaction. That interaction makes the user get the feeling of being immersed in the virtual world that this tool introduces us to. In consequence, the user finds himself isolated from the physical world around him. It is in that way that the relationship between the two persons that find themselves side by side is distorted by the taking over of the machine, which both connects and separates them: by virtually separating the two individuals, it invites them to establish a real relationship.

● **F2F-2: Synchronization-at-a-distance, to recreate the harmony of simultaneous presence** (see MITROPOULOS, 1991): The installation is made up of 4 TV-monitors, separated by 3 parallel barrier-panels and 1 perpendicular to them, as with figure 10.

The central barrier-panel separates the two participants. The participant to the right can move in spaces A and C. In a similar manner the one to the left is active in spaces B and D. The system can unfold using longcords, by moving over the two cameras and TV-monitors as well as the loudspeakers and microphones that permit us to keep in touch. As far as the horizontal barrier-panel is concerned, this creates a space where the artist has placed the two TV-monitors face to face, on eye-level stands, 50 cm apart.

This installation was also invited to be set up in the Paris Beaux Arts as a performance in the context of the Artcom Festival, January 1986 – on which occasion Professor Pierre Moeglin recorded his observations (MOEGLIN, 1986). The artist called upon two female dancers, then a couple of mime actors, to experimentally activate his installation. Regarding the dancers, they had to coordinate their movements through the installation, so

as to create an event in which the two of them, separated by both distance and the barrier-walls of the Beaux Arts, would be united together by the created images. Figure 11 gives an indication of how that performance took place.

At the beginning the dancers move separately and independently of the other, each one developing her act on stages K and O. Technicians focus the two cameras on the movement of either of them. Their images are instantaneously transmitted first to the monitor facing the other dancer O to K, and K to O. Then these signals pass over to the big screens in spaces K and O for the benefit of the dancers but also for the spectators in spaces L,N. Then they get transmitted over to the two TV-monitors in space M, for the spectators alone. Two similar systems are deployed for each one of the dancers. This artist-researcher's intention was to make evident and observe the different stages which the dancers would have to devise and move through using this mediating technology, so as to elaborate a common non-verbal language. The challenge was to reach a level capable of producing a coordinated show for which they had to reach the highest level of complex interaction possible.

In this shared coordination effort, several major difficulties came up, the first one being that the two dancers, strangers to each other till now, inevitably lacked any means of basically understanding one another. The second difficulty was the intrusion of the mediating technology as set up by Mitropoulos. Furthermore, the two technicians focusing their videocameras on the dancers, introduced another difficulty for lack of precise and shared instructions on how to do it.

As Part Two of this experience, the two mime actors used exactly the same installation. But in contrast to the dancers, these two had the experience of working together. This fact greatly modified the produced event. A shared complexity level there existed already, and these actors could therefore improvise from the start. In fact one of the two even skipped the stage assigned to him: after having left stage K, he went through central space M, and over to join his partner on stage O.

Concerning all performers, it was meant for them to coordinate their movements through the TV-monitors. In other words it meant "responding to whatever information" was presented to them on the screen, in real time (a detail cleared up in a fax from Mitropoulos to Karina Ordóñez Flores, 5/5/1996). The resulting coordinated show was consequently perceived by the spectators as a dialogue between the two TV-monitors at 50 cm apart, disseminating the images of the two performers, see space M. The intention of Mitropoulos, in his own description, was not to produce a show but to make apparent the different stages necessary towards forming a new communicational principle adapted to the constraints as created by the technology used in this installation – just as observed by Moeglin.

Note: Participating dancers Suzon Holzer (Switzerland) and Alexandra Kale (USA) were meeting for the first time. Participant mimes were Chris and Hysao Pages, a couple themselves used to co-productions. All four were experiencing technology-mediated environments for the first time.

● **F2F-4: To choose technology-free interaction, or through the networks?** This installation was invited by the V2 Center (in Hertogenbosch at the time, now Rotterdam), Holland, September 1989. It is made up of 2 TV-monitors connected by cable, but separated by a vertical barrier-panel. Each one of the 2 participants faces 1 camera and 1 TV-monitor. The camera in space A focused on the one participant is connected to the TV-monitor in space B, and vice-versa. In this way they both receive the image of the other, as with figure 12.

The installation has the two participants separated both physically and visually by a barrier-panel, and affords them to communicate interactively through the mediation of TV-monitors. When bypassing the barrier-panel, they can hear and touch each other. They could even pass an object to one another, if at least

one of them moves through the minimal space separating them. The two participants share the same control over the event in action – in the sense that they both have access to the space of the other. The same is valid with each one having the choice for either to communicate through the technology as set up, or to bypass it, so as to avoid the constraints the TV-monitors impose on them.

When the technology-mediated communication takes place between spaces A and B, the physical barrier-panel between the two participants practically disappears. But for this to happen, it is necessary for each one of the participants to accept to lose his physical entity towards becoming an electronic image to the other. The effectiveness of the exchange depends on this concession as a prerequisite. It is only following this condition that they both can start aiming towards a higher complexity in function of their available possibilities, meaning to experiment in interacting at a distance. It is up to each pair of interacting participants to find the common ground on which to build up their communication.

The public is here invited to evaluate the exchange possibilities as afforded by the communications networks. However, these do have their limits. This is a feeling the participants may experience, and this results in the need to ignore the barrier-panel, so as to make perfect contact with the other in a way different to the one afforded by the TV-monitors as connected by cable.

The idea of the barrier-panel is implicit in the installation itself, since it is presented in the form of fenced-in spaces. The name of the game for the participant is to overcome these barrier-panels using communication processes. Two possibilities are available to him:

• to either hack through them using the installation technology provided to that effect; or,
• to bypass them by moving through physical space.

The behavior of the participant, who chooses to use the installation, has a symbolic value. In actual fact, by physically bypassing the barrier-panels without hesitation, he is expressing his preference for a directly physical exchange and a rejection of the new means of communication. Since we live in a society where both options are available, we may interpret such behavior as a way to escape and run in the face of an uncomfortable new reality. Otherwise he can limit himself to the exclusive use of the available technology without considering the possibility also offered to talk simply and directly to the other person. Total immersion in the technological world could mean a lack of critical objectivity for the individual when he could evaluate the different implications from which he could choose. The option as proposed by the artist is to negotiate with both these ways of communication and evaluate the possibilities offered by each one of them.

The related issues of leaving one's body behind in physical space (Costa realizes), the negotiating process in technology-mediated interaction (Moeglin observes), and the media watching us watching them (De Kerckhove is startled)[11]

Costa
Whether daily routine interaction, erotic encounters, or problem-solving efforts, in person-to-person communications (to go with verbal exchange and utterances) we used to enhance respective perception of our bodies, but it now seems we are heading towards cancelling them out. In technology-mediated communication, to meet the other person you have to leave your body behind. Mario Costa (MITROPOULOS, 1997a referring to COSTA, 1990) realized in the Salerno activation of F2F-1 that "Communications networks are neither easy to handle, and in the process, human intentions passing through them lose their original identity. Communications technology sucks in man's presence, and transforms it ready to be consumed – in exchange for the interactivity it affords us." I do remember how when activating F2F-1 in Montreal (invited to the Artistes du 21e Siècle, 1995) a journalist, as one of the two participants, jumped up in fright at the very moment she felt she was leaving her body behind.

Moeglin
In technology-mediated communication, to interact with the other person for some purpose, you have to re-invent negotiating towards succeeding it. Pierre Moeglin (MITROPOULOS, 1997a referring to MOEGLIN, 1986) during a F2F-2 activation in Paris, when making evident the negotiating mechanism and getting anything but a smooth-linear process, observed how "Mit made no effort either to eliminate or to neutralize the variables involved in the interaction – which were apparently foreign to the main goal of the communications event he had set up in the first place. He had tried to amplify as much as possible, and to diversify to the fullest the occasions and those conditions where we could see (through the interaction that connected the two dancing partners) those variables emerge and develop. The forms and the stages of negotiation, through which the two partners were by necessity made to pass, were made visible to us – variably successful in their part, leading to a progressive coordination of the performing partners' gestures and their respective behaviour in general."

Moeglin tells us of the nowadays untold beauty of moving towards interaction, the lovers' foreplay, the negotiation of intimacy of time past, the everything-is-possible initial period of every revolutionary activity as with the 1968 graffiti of "be reasonable, demand the impossible," when in fact I got the opportunity to develop the Space Networks concept into a working tool. But even in 1-way systems, and most certainly in 2-way systems, having successfully negotiated for interaction, not only do you face degeneration of your identity down to outright loss of your body, but in order to gain the technology-mediated connection you also pay a privacy abuse potential price.

De Kerckhove
De Kerckhove (1995) was startled when participating in the 2-way interactive F2F-1 installation, enough to ask under the subtitle "You don't Watch TV, TV Watches You: Is TV a free-viewing area?" The relevance to this question was brought home to me by the clever video art installation F2F-1, where two live participants sit back to back and converse with each other's images in real time on closed-circuit TV. Deceptively simple, the experience was unforgettable, myself as one of the conversational partners. Irrespective of whether I did or did not know my partner beforehand, I felt as if there were none of the usual barriers to staring someone right in the face. You could almost pick your nose in the context of this new electronic intimacy. True, I measured for the first time the extent to which we are terrified of faces in live contact, but what struck me more was that for the last 30 years we have unwittingly been watching our TV personalities without a trace of shyness. Perhaps TV does provide a free-viewing area. Or so it seems. The deep involvement required by viewing, and the fact that most of our responses are involuntary, bear witness to the changing power relationship between consumer and producer. When we read, we scan the books, we are in control. But when we watch TV, it is the TV scanner that "reads" us. Our retinas are the direct object of the electron beam.

When scanning meets glancing, and makes eye contact between man and machine, the machine's glance is the more powerful. In front of our TV set, our defenses are down, we are vulnerable and susceptible to multi-sensory seduction. Thus the real meaning of Prime Time could be "priming time," that is, the best time to prime the mind of the television viewer. As Tony Schwartz, New York advertising executive and TV critic suggested, "TV is not a window on the world, it is a window on the consumer" (SCHWARTZ, 1983).

Ordóñez Flores (1996) appropriately refers to Professors Costa, Moeglin, de Kerckhove, and my only disagreement with her is whether we in fact have a working choice, a sporting chance so to speak, to be able to make a choice in adopting a communications/information lifestyle of a technology-mediation level, so as to be in control of it.

De Kerckhove's incisive subtitle takes us back to the initial comparison between the Reading operation and QUBE's computers scanning us – see below.

Implications of the undeclared public policy in exchanging interactivity for programmed response – the historical reference of UNESCO's failure towards an equitable new world communications/information order to live in

When I visited Columbus, Ohio, they were amazed that an M.I.T. person like myself could not drive the car they had for me when being received at the airport. And I was equally surprised myself that the more effective the use of their cable TV system, the more dangerous it became to the users. The QUBE system was in fact a very interesting operation indeed – although it proved to be an early warning for the comm/info environment of today. Together with the Reading, Pennsylvania cable TV operation, it was to a comparison of those two that I had reduced an examination of 1,500 systems – of which one more stood out worthy of a visit, Channel L in New York. It was a piece of research for UNESCO, in direct connection to EVR of M.I.T., and in relation with the mayor's cable TV commission, city of Cambridge, Massachusetts (of which working group I was an original member).

The editors of *Ekistics* worked on my report to UNESCO, and did an extended summary in my name (MITROPOULOS, 1983b). The editors of *Cities* worked on the *Ekistics* extended summary, and in their turn did their summary in my name (MITROPOULOS, 1985). I do thank them once again, both proved very useful, and the latter being a brief 3-page publication has been translated into several languages. I should repeat that this research was done in the context of the MacBride/UNESCO report (UNESCO, 1980), stating how communications are at the heart of all human activity, that the expected further communications would create more conflict through the shared awareness of problems[12] – as they have indeed, see the twin hit of the World Trade Center on 11 September, 2001. MacBride would, however, add that communications could also be the tool for conflict resolution, and his report generated the feeling of an overwhelming need for an international public conscience. The world however has gone the other way, and comparison of these two cable TV systems does illustrate the choice we had but missed. I will now briefly describe the two cable TV systems and refer to figure 13.

Reading was one of 3 NSF-funded[13] two-way experiments. A consortium was formed consisting of Alternate Media Center, School of the Arts, and the Graduate School of Public Administration of New York University (NYU), together with the City of
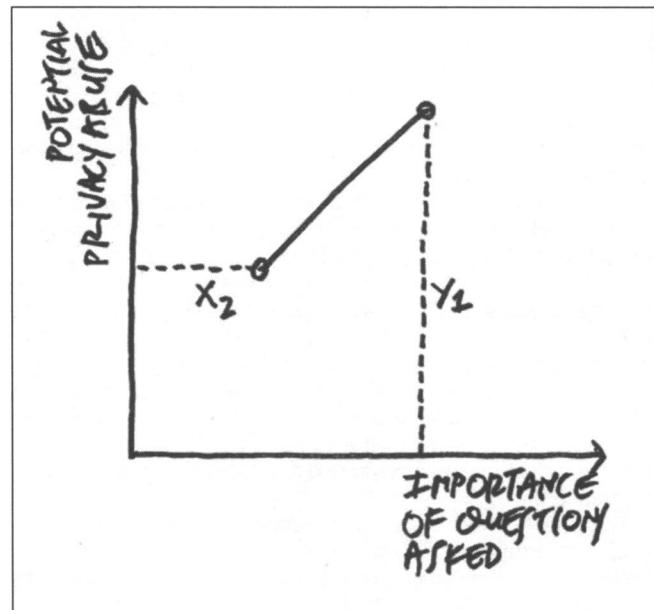

Fig. 13: Potential Privacy Abuse over Importance of Questions Asked. Regarding the quality of questions the QUBE viewers are asked, the more meaningful they are, the greater the potential for abuse of the viewers' privacy.

Reading, the Berks County Senior Citizens Council, the Reading Housing Authority, and the Berks TV Cable Company (BCTV) that was already there. BCTV was formed as a nonpolitical nonprofit organization, to administer the grant with the four following participation-minded objectives:

• Design and establish three Neighborhood Communication Centers linked by interactive 2-way;
• Train a staff of citizens to operate the interactive system;
• Involve public agencies, and senior citizens in particular, in the system's operation; note that as compared to the 13 percent for the rest of the U.S., 20 percent of Reading's 80,000 was over the age of 65 – which is relevant to the Western world today including 20 percent of all Japanese who today are 65 or older (with 1 person in every 4 to be in that age group by 2014);
• Provide live 2-way video-to-video interactive public service programming through which these senior citizens could communicate with each other and with service delivery organizations.

On the other hand the Columbus QUBE 2-way system was not a face-to-face electronic communication but a "response" system offering opinion polling and pay-per-view programs. It was then being extended into information retrieval to also include transaction services such as shopping and banking. The Warner-Amex company was jointly owned by Warner Comms Inc. and American Express Co., and at the time was operating 150 systems in 30 states serving 750,000 subscribers.

Linking cable and computer technology: 20,000 homes out of Columbus' 57,000 total had been computer-linked (there were another 3 cable operators when the city was carved up into four and Warner-Amex got the well-to-do residents). The first of the system's four computers scans all home QUBE consoles asking three questions every six seconds:

• Is your TV set turned on?
• What channel have you turned into?
• What was the last response button you touched.

Innovative 2-way features allowed you to respond to polls, play games, take part in talk shows – all by touching response buttons in the comfort of your home – see De Kerckhove above, exclaiming "You are not watching TV, TV is watching you."

Here I will not go into the problem of apparent participation

(MITROPOULOS, 1983b), or on how the questions asked were compatible to the console rather than to the subscriber manning it, and more. But I do want to stress that the problem of private abuse in such a system can indeed happen when your profile as consumer and citizen gets to a commercial company or a national security agency. Although QUBE was being sold on its capability potential, Warner-Amex already had a privacy abuse record with the result that since 1977 QUBE viewers were being asked questions of no consequence. When Potential Privacy Abuse is plotted over Importance of Questions Asked (fig. 13), one realizes that nobody really wants to abuse one's privacy when the information one has supplied to the computer is of no importance – the opposite holds true as well. This discrepancy is illustrated if one considers the abscissa Y1 of a point at one end of the line (showing the system capability) to the ordinate X2 of a point at the other end (showing the system's record to date). Even in the early 1980s nobody denied what is today widely known that once personal information is put into a computer the scope for abuse is enormous with machines interlinked including those of intelligence services – legal or illegal, at home and abroad. My concluding concern at the time was that the New International Information and Communication Order, timely projected by the MacBride report, was an urgent necessity as it tried to give shape to a process that had already started in an ad hoc fashion – and ad hoc it remains; that the opposite could prove disastrous to efforts for surviving our technological civilization. Certainly, although cable TV is not needed by all people at that or any other time, participation I believe is needed, whatever the race, color, language or political system.

You may not remember how USA pulled the rug under UNESCO at the time (MITROPOULOS, 1997b), but we all are aware how the world has gone the other way: from Community to Subscriber, from Analogue to Digital, and from Interactive to Response. As from the mid-1980s already, 2-way response systems were called "interactive" for marketing purposes, including in the Art-science-technology context. And it made no difference to explain that an Interactive system (see Reading, Pennsylvania versus Columbus, Ohio) is one where (a) the system can be activated from either end, and (b) where the communications content can be other than the one for which the system has been activated.

And just in case the reader is truly addicted to the word, he/she could still make the distinction between technology-mediated interaction on the one hand and man-machine interaction on the other.

In my Berlin presentation of 2001 (MITROPOULOS, 2002a), when I stressed the current shifting of people from Physical to Electronic Space, and how part of our urban space is in fact Electronic, one question I was asked was by Serge Antoine, himself having been a French government Haut Fonctionnaire. He asked "How is Electronic Space to be governed?" and I responded that we could learn to apply our governance experience of outer space (MITROPOULOS, 2002a). But there is no sign of any coordinated effort, whilst if we ask "How is Outer Space to be governed?" we can observe that it is clearly accepted that Space Law is becoming increasingly important for the private sector and the legal practitioner in view of the growing commercialization of space activities (ESA, 2003). But we do not have the same concern for the electronic environment and the electronic technology to be leading us to any Treaties and Principles developed by any United Nations Committee on the Peaceful Uses of Electronic Space. Or any Liability Conventions on damage arising from Electronic Space activities. No collective effort is being made for resolution of Electronic Space disputes, nor do we have any users' protection from otherwise peaceful applications in Electronic Space – although Cyberpsychology has been providing us with justified reason to be seriously concerned.

With the following two F2F proposals filed for the Pacific, I am eager to ask "How is the Pacific (fig. 14) to be governed?" – although I admit that "How is my village (population 2,000) being governed?" gets only a personal hypothesis for an answer. And considering the Pacific, myself, in awe of both its complexity and vastness and civilizations contained in it, it appears to me that today's Electronic Space looks like the 18th century Pacific of Captain Cook immediately after the era, when to Britain, the Pacific would have been "Parts Beyond the Seas" and transportation of convicts to those parts were routine (REES, 2002).
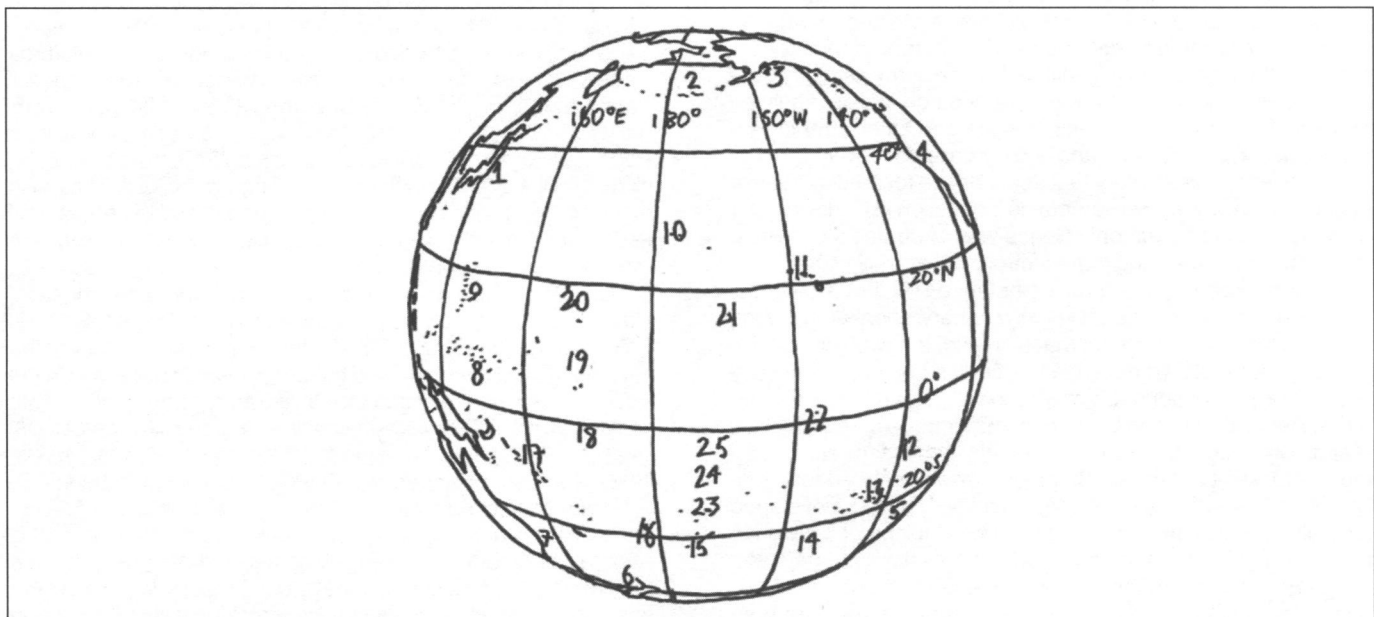
Fig. 14: Map of the Pacific Ocean area. Chosen locations 1-25 start from Tokyo in a clockwise spiral (between Pitcairn (5) and the South American continent not shown is Easter Island). 1-Tokyo, 2-Aleutian Is, 3-Valdez, 4-San Francisco, 5-Pitcairn, 6-Auckland, 7-Brisbane, 8-Caroline Is, 9-Marianas Is, 10-Midway, 11-Hawaii, 12-Marquesas Is, 13-Society Is, 14-Cook Is, 15-Tonga Is, 16-Fiji Is, 17-Solomon Is, 18-Gilbert Is, 19-Marshall Is, 20-Wake Is, 21-Johnston Is, 22-Christmas Is, 23-Samoa Is, 14-Union Is, 25-Phoenix Is.

Networking as the new contemporary locality, illustrated in the F2F-31 and F2F-1P proposals for the Pacific, plus one suggested change for the Ekistic Grid Index

Sian Rees, herself born into a family of sailors, tells the exciting true story (REES, 2002) of the barque-built "Lady Julian" on her July 1789-June 1790 voyage, from London to Botany Bay, to the Sydney Cove colony (well, not quite a colony, and not quite a gaol either, and certainly not the Australian nation in any case). The two-decked three-master ship, through the tropical storms of the Equator, then floundering in the becalming terror of the doldrums (with currents slapping against each other), onto the rough waters of the southern seas between Africa and New South Wales. On board were 245 female felons (of which less than 30 ever returned), the youngest female aged 11, the oldest 68. Brutal discipline and extreme laissez-faire, half a squeezed lemon (see barrier cap) as one of the contraception techniques used, and in full knowledge to any aspiring mutineer that those caught would be hanged without a trial summingly from the yardarm. The women going below to the orlop so as to clear the deck for operations upon entering a port, such as Cabo Verde (to and from in good winds), or Rio where cheerful miscegenation was a rule accepted at all levels of society and even the Catholic church. The women, all convicted for Transportation to Parts Beyond the Seas, were surprised to see the ship's company being transformed once the ship sailed: a kindly old sot turned into the impressive navigator, the ordinary carpenter looking after the "Lady Julian" as a doctor would, the otherwise rowdy sailors performing at 50 ft above deck in quick response to orders from below. European national policy was for sending colonial advance parties, to encourage trade, get rid of those undesirables at home, and to prevent another country from getting there first. Advance colonies were in need of food, skilled men, and women – in that order, the women necessary for sexual comfort and procreation. However, when the boat reached its destination, then cast off leaving the "Lady Julian" women convicts behind, sailors jumped ship unless their women had stowed away first – it was the reality of desperate human warmth, and we should remember "Bounty's" men turning mutineer to stay with their local girls – Tahiti remaining every sailor's fantasy island, just like current hackers hooked on MUDs, addicted to a long list of fantasy websites, or glued to an electronic sexual relationship whilst wife and two kids are downstairs.

To me, early 21st century Electronic Space resembles the late 18th century Pacific. Serge Antoine's question in Berlin in 2001 on governance of Electronic Space was of immediate interest to me for initially implying that Electronic Space is not just a utility service to be regulated by for instance ITU, but a potential UN-sovereign space, since "electronic urbanization" is a growing part of our cities. We accept that this is so, but what will the impact be? After all, we do leave our bodies behind, our privacy is also potentially abused every time we connect, and it is the fourth Behavioral space beyond the other three of the Physical realm. My suggestion is to include this item when reconsidering the Ekistic Grid Index: Space Networks means looking at Shells as Networks, with currently networks having developed into "electronic shells." Furthermore and looking at Networks, personal and mass communication systems have merged, and so have computer and telecommunication technologies – we have a clear fusing of these two lines of development as from the mid-1960s when we remember having third generation computers using transistors, Telstar and global TV. Then moving on with fourth generation machines of integrated circuits, and electronic video recorders – to the early 1980s PCs, and laser

transmissions, just after our comparative discussion of Reading v. QUBE systems in this paper. In conclusion, one Ekistic Grid re-organization would be to have Networks subdivided into 1-Public Utility Systems, and 2-Transportation, as they already stand (fig. 15). And have 3-Personal/Mass plus Information/Communication Systems, as a fusion, leaving us with 4-Electronic Space.[14]

But let us go back to today's Pacific, and what role do organizations[15,16] such as ASEAN, APEC, ASEAN Regional Forum, ASEM, INMARSAT, IMO play – and how do they themselves get governed? What is the role of Japanese investments in the Pacific, their Imports/Exports ratio, and everywhere where Japan gives aid ? How are we dealing with the Pacific collapsing fisheries? How is the Skipjack Tuna Fishery governed, with its one Pacific side stretching from mid-ocean Hawaiians to caressing the Pacific side of Japan to the North, the Tropic of Capricorn latitudes to the South, and all the way to western Thailand? Has the Walleye Pollock Fishery recuperated its depleted stocks of salmon, king crab, and ocean perch, from Seattle to include the Aleutians and Japan too? Is the 200-nautical-mile limit (from about South 25 degrees to 55 South) of New Zealand working? Are Russian gunboats still shooting at Japanese vessels poaching off the Kuril islands? Are 350-ft freezer-trawlers (catching and processing tons of fish) getting bigger, or has the concept of Limits to Growth been accepted and a working set of rules agreed on under the UN? Are we in our advertised globalized 2005 any better than in 1995,or mid 1960s? How much of the Pacific is "commons"?[17] How is life in the Aleutians following the USSR collapse? If Antarctic governance works, could the model do North of it? Which are the obsidian routes in prehistoric Pacific? Are the Sterna Paradisoea (experiencing the Pacific as a whole) protected so as to have them keep flying their migratory paths from Arctic to Antarctic along the Pacific coast of the Americas? Do the Calibris Canutus still migrate from Siberia, over Japan and the China Sea to reach Australia? How far is the Pacific Americanized, or do local identities go beyond the symbolic and run as activities such as the Japanese tea ceremony – if it still does (HAMMAD, 1988)? Is there such a thing as a Japanization of SouthEast Asia? What are the population estimates (TONUMA, 2002) in the Oceania region flanked by North and South America, Eastern end of Russia, Japan, China and Asia south of it? How are the 1950s-plus nuclear test sites doing today, whether in the Marshalls (USA explosions), or Mururoa (French explosions) between Tahiti and Pitcairn? Are there still traces of fallout substance Cesium-137? Is Midway simply halfway? Two years ago Sea Launch was telling me about their Pacific customers that included launching from their floating facility, a satellite half-owned by JSAT Corporation of Japan. Also of their contact with the tiny islands of Kiribati and the occasional use of their airstrip on Christmas island, plus connections to several companies in Malaysia, Singapore, Hong Kong. Also about the Chinese commercial launch Great Wall Company question: How is satellite technology helping Pacific governance?

Proposals F2F-31 and F2F-1Pacific aim to make evident the Globalization opportunity and the Local Identity necessity in the Pacific. They are looking at the Pacific as-a-whole, just like with as-a-whole projects/project-proposals for Europe (MITROPOULOS, 1997c), The Aegean Sea islands (MITROPOULOS, 1982, 1983a, 1985), the Mediterranean (MITROPOULOS, 1986), or the Mediterranean and beyond (MITROPOULOS, 1992, 1996). The F2F-31 and F2F-1P signals can originate from any one of these nodes (a good maximum of 7), being all center-and-periphery, as with my definition of a network. Nodes can in fact take turn in succession, and so make evident successive local identities, whilst installation participants discuss common Pacific issues. Figures 16 and 17 are the respective initial stages of these proposals. For an idea on how they may be looking for activation, see figure 3 showing activation-Day of geopolitical art project "Line
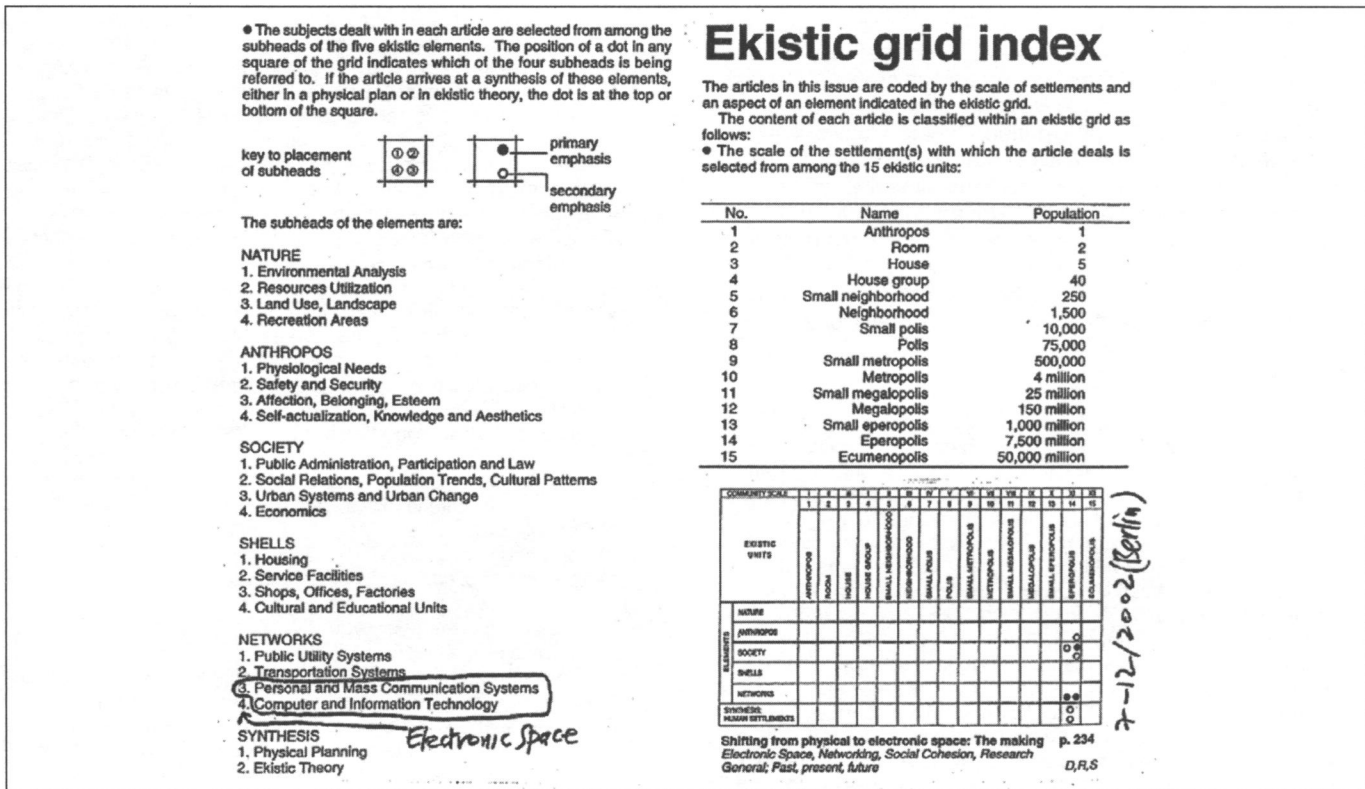
● The subjects dealt with in each article are selected from among the subheads of the five ekistic elements. The position of a dot in any square of the grid indicates which of the four subheads is being referred to. If the article arrives at a synthesis of these elements, either in a physical plan or in ekistic theory, the dot is at the top or bottom of the square.

key to placement of subheads

primary emphasis
secondary emphasis

The subheads of the elements are:

NATURE
1. Environmental Analysis
2. Resources Utilization
3. Land Use, Landscape
4. Recreation Areas

ANTHROPOS
1. Physiological Needs
2. Safety and Security
3. Affection, Belonging, Esteem
4. Self-actualization, Knowledge and Aesthetics

SOCIETY
1. Public Administration, Participation and Law
2. Social Relations, Population Trends, Cultural Patterns
3. Urban Systems and Urban Change
4. Economics

SHELLS
1. Housing
2. Service Facilities
3. Shops, Offices, Factories
4. Cultural and Educational Units

NETWORKS
1. Public Utility Systems
2. Transportation Systems
3. Personal and Mass Communication Systems
4. Computer and Information Technology

SYNTHESIS   Electronic Space
1. Physical Planning
2. Ekistic Theory

Ekistic grid index

The articles in this issue are coded by the scale of settlements and an aspect of an element indicated in the ekistic grid.

The content of each article is classified within an ekistic grid as follows:
● The scale of the settlement(s) with which the article deals is selected from among the 15 ekistic units:

No.	Name	Population
1	Anthropos	1
2	Room	2
3	House	5
4	House group	40
5	Small neighborhood	250
6	Neighborhood	1,500
7	Small polis	10,000
8	Polis	75,000
9	Small metropolis	500,000
10	Metropolis	4 million
11	Small megalopolis	25 million
12	Megalopolis	150 million
13	Small eperopolis	1,000 million
14	Eperopolis	7,500 million
15	Ecumenopolis	50,000 million

Shifting from physical to electronic space: The making   p. 234
Electronic Space, Networking, Social Cohesion, Research
General; Past, present, future   D,R,S

Fig. 15: It was 50 years ago that started the timid then accelerating merging of Personal and Mass Communications Systems with the Computer and Information Technology; 25 years ago we started having strong evidence of Electronic Space as space rather than a utility (see Mitropoulos, *Ekistics*, vol. 50, no. 302 (September/October 1983), p. 321 of the Guest-Editor's introduction); 15 years ago it was becoming a collectively perceived phenomenon.
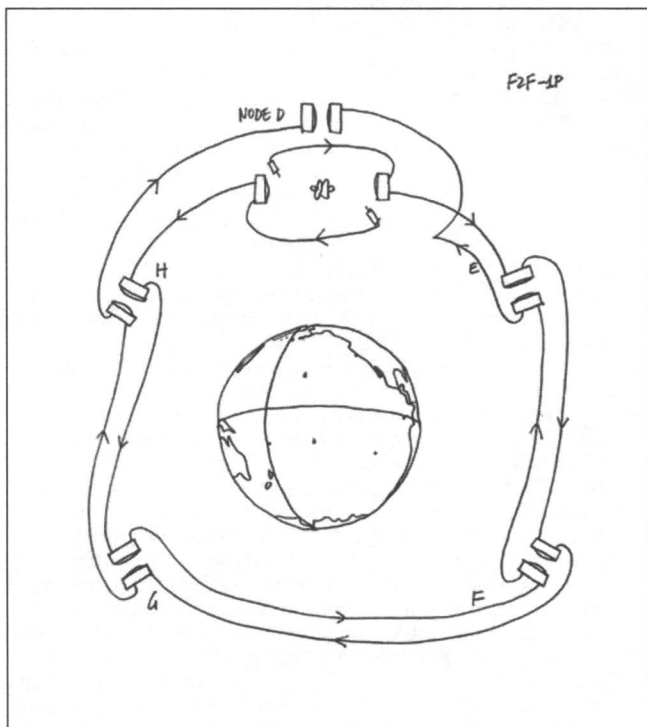

Fig. 16: F2F-1P (as with figs. 7 and 8) proposal for the Pacific, as a 5-node network. Each of the nodes can take turns in generating the signals as the two participants interact. The two signals leave D area node, feed into the other participant nodes, only to return to D and its own two TV-monitors "talking to each other." The Pacific area is shown crossed by the 180 Longitude and the Equator.
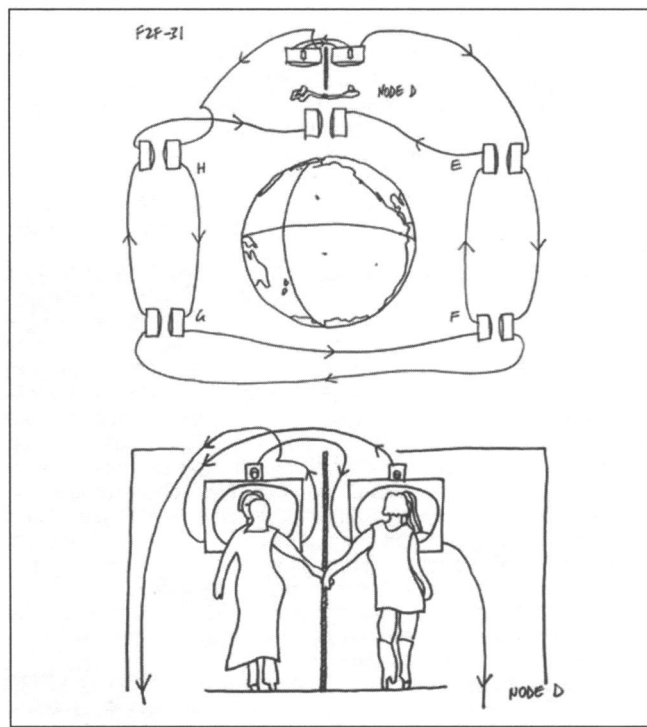

Fig. 17: F2F-31 proposal as a 5-node network for the Pacific. Bottom half shows the two females holding hands in front of respective cameras and TV-monitors. Their interaction in node D generates the signals travelling around the Pacific in nodes E,F,G,H only to return to node D space and feed into its two TV-monitors "talking to one another." The Pacific Ocean is crossed here by Longitude 180 and Latitude 0.

of the Horizon" (MITROPOULOS, 1992). For an intermediary stage see "The Great Maritime Adventure" proposal-in-progress (COSTA, 1990) which is another geopolitical art proposal also appropriate for the Pacific, where we could include the Polynesian migrations in the AD 300-1300 period, Captain Cook's voyages of the 18th century, with in-between Ferdinand Magellan in the 16th century, and Cheng Ho in the 15th, himself pushing Chinese maritime exploration to the African coastline, and after whose death the Ming dynasty reverted to the isolationism of long tradition – an antithesis to my approach for Globalization in the context of Local Identities in the exercise of articulation of Electronic Space as with the F2F series of installations.

Notes

1. *Ekistics* editor, J. Tyrwhitt (1974), put together a group of authors telling us in 1974 about the Japanese approaches to mechanization: Fumihiko Maki, Shunichi Watanabe & Satoshi Morito, Catharine Nagashima, Eiichi Isomura, Kiyoshi Nagata, Masao Watanabe, and the Japanese Computer Usage Development Institute.
2. It was common knowledge that Space Networks was the hidden agenda for my Basic Architectural Space course I was invited to structure to fit the demands of choice First Year students, Department of Architecture, Edinburgh University, 1979. Top on the references I can cite, I want to acknowledge the Basic Design concept of Victor Pasmore, a painter I never met; and his King's College Durham University colleague Richard Hamilton, whom I had as a tutor evaluating my painting work, whilst doing his innovative Pop Art (at the time when Alistair Cooke had us glued on his radioed Letter-from-America). My Space Networks interest (MITROPOULOS, 1974) did not lie on the space that falling snow fills, where dandelions float, and domestic dust or church incense lingers, but man's experience of space. My own observations of the pedestrian's daily behavior, friends' on-paper descriptions of the places where they live, or space data collected from literature, made me realize man's dynamic sequential experience, and so look at buildings as simply one part of man's network – of space as a network. Looking into examples of designs for pedestrian movement, I had included at the time the Japanese Telecommunications Pavilion at the Osaka Expo, the Shinjuku Center in Tokyo, Kenzo Tange's Yamanashi Building. In view of Art-science-technology videocommunications research that I was to focus on 5 years later in M.I.T./USA, it is worth checking on the Appendix of the Space Networks Ph.D. thesis in Edinburgh University/Scotland (MITROPOULOS, 1974) for the video application in movement through space. We have subtitles "Moving through space on videotape," "Why videotape, and why not," "One hour's tape of sequential movement-through-space," "Anticipation, and peripheral vision appreciated."
3. I had stressed the Tog/Sep concept (in MITROPOULOS, 1974 – but it is not evident enough in MITROPOULOS, 1975) for being towards the designer's structuring of communications space. For being a concept for conditions of conflict, very close to Alexander's idea of patterns (his Language after all concerns itself with behavior in spaces for communication – ALEXANDER et al., 1968). Tog/Sep is based on the articulation of space with its neighboring spaces where the possibilities exist: to hear but not to see (Tog Acoustically/Sep Visually), to see but not to hear, to see and hear but not to be able to touch the other person because of distance – distance to be covered by moving through space, or as with my research years later, to be overcome using telecommunications. Tog/Sep was not only for the detailed elements of a building to be treated individually, but also for interpersonal relationships, and for an individual's Personal space (the interactional notion of aloneness). And furthermore for orientation purposes in a building (whose different parts could be experienced together at the same time).
4. I have started on a comparative approach to S-p/p spaces and F2F installations (as well as Constructions – the minimal designs I do for remote coastal sites), but my first presentation for Artmedia, Paris 11/2002b was published by Ligeia (MITROPOULOS, December 2003) who allowed for 1 Figure only – whilst I was comparing 3 spaces for communication. And the follow-up presentation was for the Greek Physicists Association, Syros island 9/2004 that does have a complete set of figures but is not yet published.
5. F2F-4N is one installation not presented in this paper. Like with oth-

er F2F installations, also this one proved to be deceptively simple enough to have the learned editor of Ligeia (MITROPOULOS, 2003) make a mistake: in trying to streamline my working French into perfection, he writes on page 176 of his Art Et Multimedia: "Ils sont Ensemble, connectés par les deux moniteurs TV (espace Electronique). Ils sont plus tard Separés par une distance de 10 à 40 mètres, leur espace Hodologique (en Espace Physique)." Instead of "Ils sont en même temps Séparés ..." (They are simultaneously Separated ...) because of course this is a Tog/Sep environment.
6. For a Comparative Table of S-p/p and F2F on the Tog/Sep concept, see MITROPOULOS (1996).
7. One "artist" who has copied F2F-2 to do a production for the University of Ioannina (Professor Navridis) without giving reference to F2F, has gone further: he pressed the Marilena Caretta group of dancers to work for him in a repeat show for an Athens club. The dancers explained that they had been performing in my own experimental activity (the Hellenic-American Union giving us space, equipment and a technician in Athens, late 1980s). He insisted. They refused.
8. I will briefly outline (GIDNEY, 1984; MITROPOULOS, 1991) the three New Aesthetics criteria (a), (b), and (c).
   a) Control
   b) Knowledge
   c) Three levels of complexity of interactivity:
      1) "Hi there!"
      2) "I am here, where are you?"
      3) Complex interaction.
9. We experience Behavioral Space by being involved in an activity (such as movement and communication) in it. This is in contrast to Euclidean Space which is independent of one's behavior in it and is measured in feet or meters. In Physical Space we have: Personal (of researchers Edward Hall and R. Sommer), Spaces for communication (such as Semi-private/public), and Kurt Lewin's Hodological Space (as space of possible movement with intention, "movement" means the various paths that barriers allow us to choose from, and "intention" means the particular path one chooses to take).
10. From the 2/7/1996 letter of Karina Ordóñez Flores to this author: "... mais les dates de rendu et de soutenance de mon Mémoire ont été plusieurs fois reportées. Par rapport à cette dernière, elle a eu lieu le 26/6 et elle s'est très bien passée. Vous remarquerez sans doute que le titre et le plan du mémoire ont changé. Cela s'explique par le fait qu'on m'a été [m'avait] demandé de modifier son contenu afin de centrer ma problématique. C'est ainsi que je me suis vue obligée de refaire l'introduction, l'avant-propos, les introductions à chaque partie et à chaque chapitre du Mémoire. De même, j'ai dû supprimer quelques oeuvres dont l'analyse m'avait détourné du sujet. Bien que cette situation me gène particulièrement, je suis contrainte de vous annoncer que, pour les raisons citées, j'ai dû retirer l'analyse de votre série F2F de mon Mémoire. Cependant, je vous fais tout de même parvenir cette dernière, vous pourrez ainsi voir de quelle manière j'ai apprehendé votre travail. En vous remerciant de votre compréhension et, encore une fois, de votre aide, je vous prie de joindre mes plus sincères salutations."
11. Professor Costa, an expert on Aesthetics, is with the Universities of Salerno and Naples, Italy. Professor Moeglin, an expert on Communications, is with the Université Paris Nord, Paris, France. Professor Derrick de Kerckhove, an expert on Media, directs the McLuhan School, Toronto University, Canada.
12. The Council of Europe was one other international organization involved at the time in telecommunications and the emerging media, and their impact on society. As I was sent out by UNESCO, another researcher looked into the social implications of cable TV operations in USA and reported back to the CoE. In February 1997 I was invited by the Greek Ministry of Culture to take over their representation to the CoE's very prolising program that had started 11/1996 on Culture and New Technologies, as well as being in the Team of CoE's Experts (MITROPOULOS, 1997c – on my three proposals for Europe, on that October 1997 London meeting). Much to my surprise in the meeting of March 1998 in Strasbourg, the CoE people were not interested in using the excellent work the Council itself had carried out in several European countries in the 1970s. Another meeting followed in Brussels towards a collaboration between the CoE and the European Commission, under the British Presidency – but it was rather ceremonial. The Greek Ministry of Culture remained inactive on both my 3 proposals and

my memos. In July 1998 I pulled out.

13. The National Science Foundation also funded two other 2-way experiments, one in Spartanburg (no activity in 1980), and Rockford (of uncertain activity in 1980).

14. The other re-organization of the Ekistic Grid involving Electronic Space would mean checking the Ekistics subdivision of Shells, which I will skip here – unless the Networks re-organization is rejected. I should also add that this is a different approach from treating cities basically as we always have, to acknowledging information/communication systems by giving them visibility whilst re-naming the settlements as "digital cities."

15. ITU for International Telecommunications Union, ASEAN for Association of Southeast Asian Nations, APEC for Asia-Pacific Economic Cooperation Forum, ARF for ASEAN Regional Forum, ASEM for Asia-Euro Meeting, IMO for International Maritime Organisation, INMARSAT for International Maritime Satellites Organisation.

16. As an example, INMARSAT-A service is still in active use, and it will continue up to 31/12/07, whilst upgraded incentives are being offered. As from early 2005 a realignment of users' antennae is necessary so as to accommodate the new INMARSAT I-4 generation satellites. The global coverage does remain the same, with Pacific locations at 109 East for IND-E, 178 East for POR, and 98 West for PAC-E (the AOR-E over the Atlantic is at 15.5 West).

17. How is this "commons" governed? If ad hoc, who ends controlling this ad hoc? A parallel in Electronic Space is myself writing this paper on a Toshiba S300 CDS/2.1GB Model No.PA126IEYV-PE 95 laptop. As I am obliged to run on the minimum of Windows 1998B so as to get online in Brussels, I thought I should install Win 2000, but neither the market is selling it nor can my machine carry it. I therefore changed from Win 95 to Win 98B (don't ask me how) and found the laptop going slower than ever before – I therefore will have to (a) downgrade to Win 95 so as to go faster, or (b) buy a new machine and the new software to go with it. Furthermore, my simple twisted phonewire connection has by now been run over by ISDN, itself left behind by ADSL. Not to mention one friend gone wireless, the other gone mobilephone connection, and the dear daughter of a dear girlfriend from my past not talking to me unless by email, myself not always being online.

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