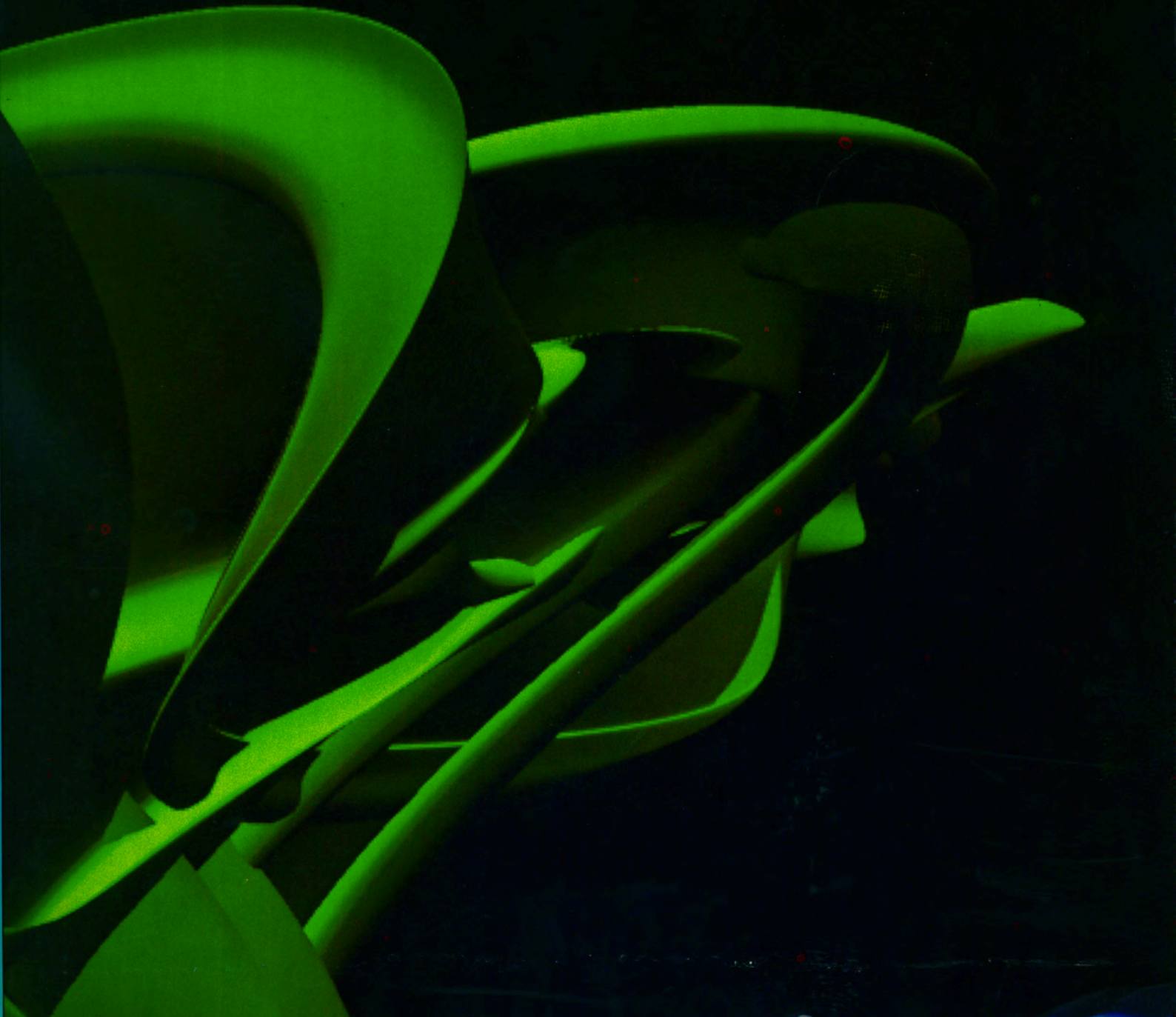




ARCHITECTS IN CYBERSPACE



DUNNE + RABY

FIELDS AND THRESHOLDS

Our environment today has become a dense field of telecommunicative possibility: a mediational ether made possible through microwaves, optic fibres, cables and networks. Access is gained through phones, faxes, video and desktop computers. Although these technologies offer varying degrees of complexity and subtlety in terms of software, the possibilities offered through their physicality are minimal. A whole range of subtle communicational qualities is lost, qualities that could significantly enrich the experience of technological communication and lift it above mere functionality.

'Fields and Thresholds' is a design project that attempts to explore an approach to telecommunications that uses a series of spatial and artefactual tools to address the aesthetic and poetic aspects of telecommunication experience within a context of everyday life.

Designs for the senses, in a world of dematerialising technology

We are interested in finding ways of broadening the scope of telecommunications to include non-verbal forms of expression: not so much facial expression and gesture, but subtle uses of space and distance, and almost subliminal environmental qualities that help to express cultural difference.

Support from the Netherlands Design Institute enabled us to set an agenda that attempts to reposition telecommunications within a broader cultural context, where performance and efficiency are secondary to cultural and social enrichment and diversity.

In approaching this project we took into consideration four main areas of investigation: electromagnetic climates and ambient presence; tele-proxemics; thresholds; new tools.

Electromagnetic climates and ambient presence

For us, the communication aspects of telecomputing are less about finding ways of 'inhabiting' abstract digital

'space', and more about the exploration of new situations arising in physical space. We are interested in the link-up of 'places' within a vast field of telecommunicative possibility.

We want to move away from existing person-to-person and computer-to-computer connections that isolate the person from their physical environment, and extend the pleasure that comes from connecting to another part of the world and hearing a greeting or accent that suggests another time zone or culture. This is not about a nostalgia for differences that no longer exist; we are looking to explore new forms of 'difference' and possibilities for new aesthetic qualities: a celebration of difference rather than an eradication.

Telecommunications could provide a 'window' or 'filter' on to other places, connecting the place you are in to other places, replacing familiar local sounds with strange sounds from elsewhere – working late in London to a faint backdrop of the Tokyo rush hour. Apart from sound, differences in temperature, light levels and other environmental qualities, both natural and artificial, could also be transmitted, creating an awareness of another place through a subdued background ambience.

The informatic atmosphere of telecommunications has its own 'electromagnetic climate' related to an 'electrogeography' defined by wavelength, frequency and band width. The microwave medium of telecommunications is only one small part of our radio frequency environment. The mix of this environment varies widely between rural and urban areas, country to country, and time-zone to time-zone. There is enough variation to provide interesting regional differences, not only in the form of remote localised electromagnetic textures.

Tele-proxemics

Proxemics is a term, used by ET Hall in *The Hidden Dimension*, to describe the study of the social uses of space. Most verbal communication in the physical

world is supported by levels of informal social uses of space operating at almost subliminal levels. Space and distance are used to define and negotiate the interface between private and public, particularly during the moments leading up to contact. This sense of distance is not only visual but also acoustic, thermal and olfactory, and forms a sensory envelope of kinaesthetic sensitivity, that varies from person to person and culture to culture. Architecture and furniture design have always allowed this human sensitivity to the social use of space to find material and spatial expression in its output. We are interested in exploring the possibilities of linking this to telecommunications.

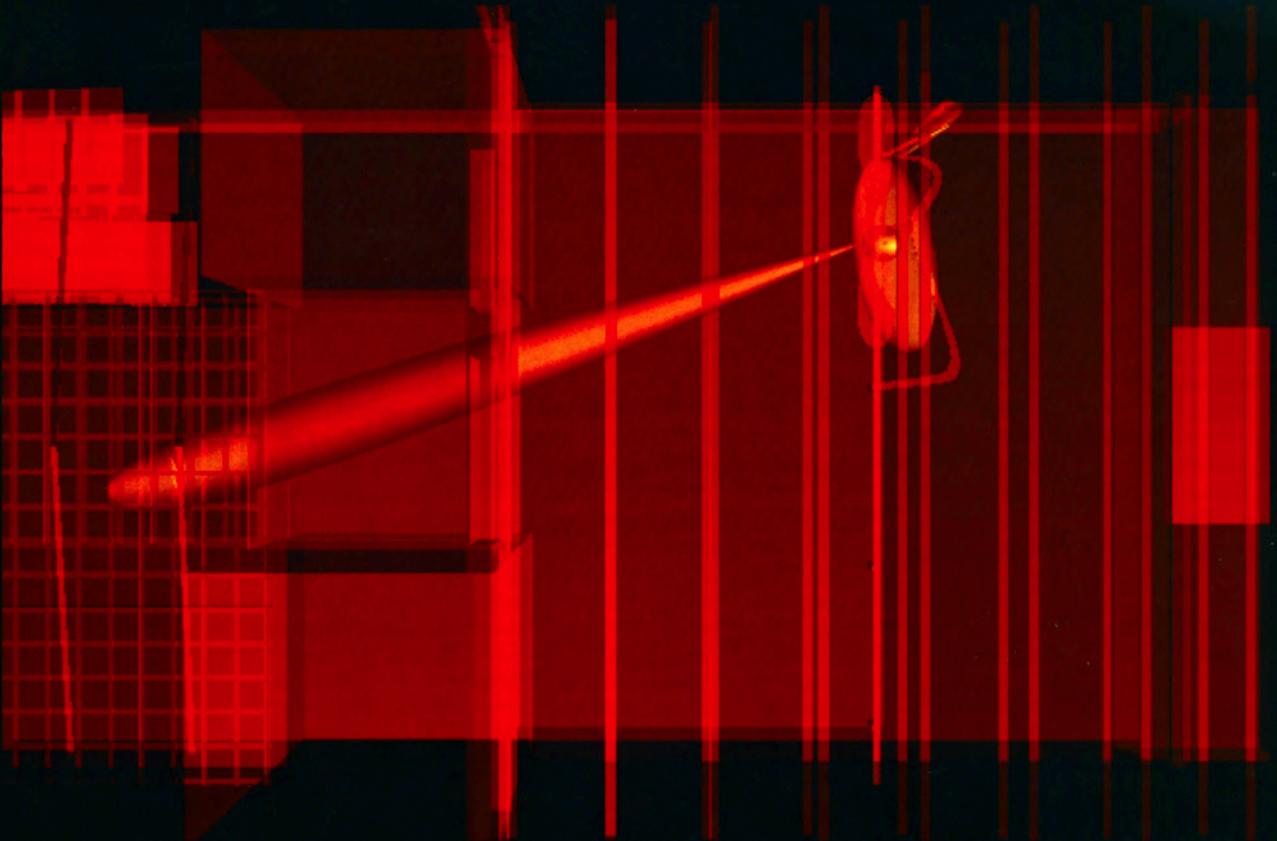
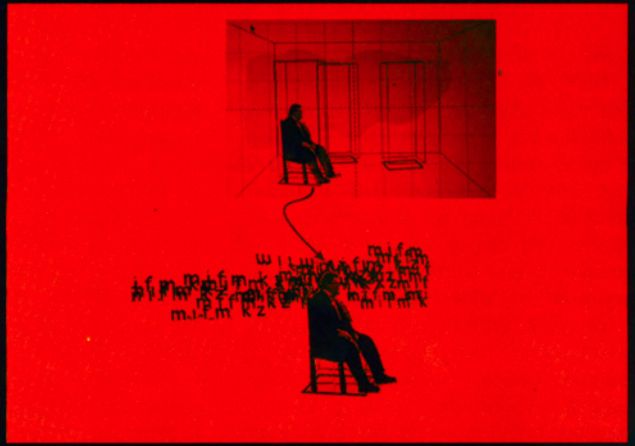
This sensory envelope is flexible enough to enable us to articulate a whole range of different behavioural possibilities within social situations, such as chance meetings, browsing and by-standing, initiating contact, attracting attention, butting-in, and splintering away from larger groups, all of which involve the intuitive negotiation of different levels of privacy. It provides us with layers of protection in public situations.

Even in the case of the telephone, a technology that has been around for a century, the use of the answer-phone to screen calls suggests we are not yet comfortable with the idea of transparency and instant unannounced communication. Perhaps instead we should be searching for ways to create more translucent connections between people.

Thresholds

The entrance to a typical English home is spatially layered, consisting at its most basic of the garden path, the doorstep, the hallway and the living room. When calling on somebody, although you may be invited into the living room, you might feel that the extra level of social involvement would be uncomfortable, and insist on standing on the doorstep. The domestic threshold is a social tool that allows for different levels of involvement, placing the emphasis on a person's own discretion,





sensitivity and inclinations.

Currently, the boundary between telematic and physical space is clearly defined. Access is gained through a series of objects that includes faxes, telephones and computers. You are either in or out, on or off. Although these interfaces can offer varying degrees of communicational complexity and subtlety, they are virtual, and exist only within the object.

We are interested in blurring this boundary and fusing physical and telematic space, creating an in-between zone, a multi-sensory threshold. The interface could move off the screens and surfaces of ultra-miniaturised generic products to become spatial and artefactual tools allowing us to bring some of the more subtle complexities of our social skills into the world of telecommunications.

New tools

This new threshold is in itself immaterial and imperceptible, and design becomes a strategy for linking this immateriality to the material world in ways that lead to new communicational opportunities.

From architecture to furniture and clothing, a vast range of complex responses to privacy has become embodied in physical and spatial artefacts; underclothes and overcoats, veils, sunglasses and masks, venetian blinds and one-way mirrors. Our concern is that in addressing these issues as they occur in new technologies we will see grossly oversimplified responses which limit opportunities for forms of aesthetic misuse.

But at the same time we want to avoid the risk of merely superimposing the familiar physical world onto new digital situations, of holding back the possibility of a new culture through a desperate need to make comprehensible. How can we discover analogue complexity in digital phenomena without either totally abandoning the rich culture of the physical, or simply superimposing the known and comfortable onto the new and alien?

The following examples discuss early sketches exploring how some of these ideas might work in physical terms:

Drum: two corridors formed into rings are located in different buildings. Speakers, microphones and sensors are positioned around the interior of the structure and respond to location and movement. Participants can move through the space, following, chasing, colliding with, or shadowing each, other depending on the

situation. Perhaps a structure like this could allow for expression of cultural difference, through the different uses of space materialised as sound.

Bench: when someone sits on one of two cold steel benches located in different cities, a corresponding position on the other bench warms up, opening a sound channel. At the other location, by feeling the bench for 'body heat' a person can decide to make contact by sitting on the warm part, or open their own channel by sitting nearby. Initially the sound channel is distorted, but as the bench slowly warms up, the channel clears, providing a moment to discretely slide away if you change your mind.

Tele-visits: first thoughts on blending telematic space with physical space, were related to navigating through existing voice-mail systems. For instance, by phoning into a building, a caller could use the telephone keypad to move through different physical locations, possibly meeting the actual inhabitants, striking up conversations or simply hanging around and listening in.

Quivering piece: you might dial, perhaps, into the object. By connecting with it you cause it to quiver indicating your presence, while you listen to the distorted sounds of nearby activities. A casual passer-by, might, noticing the movement, slowly make contact with the caller by gently lifting the cloth and clearing the distorted line.

Weather: callers might transfer themselves to other objects, for instance, on to the roof or into the garden, to listen to the weather through a 'sonic window'.

Dog: experience a variable acoustic impression of an environment controlled by the free-will of an animal, and possibly meeting other pet lovers!

Telechatline: people dial into the building to enter a spatialised tele-discussion. They are accessible to the actual inhabitants of the building through a variety of artefactual and spatial devices; the tele-participant can remotely control the range of their zone of sensitivity, or can ease their way into the discussion.

Lobby: this is a point of entry into the system for both tele- and physical partici-

pants, people waiting in the lobby can listen to the ambient sounds of tele-participants arriving and departing.

Panspectron: this is a piece of furniture for accessing the 'chato-sphere', the airborne conversations between users of mobile phones and radios. The seat tunes into frequencies by slowly turning it within its frame.

Telerats

The following observations resulted from a series of informal experiments designed to provide us with some concrete experience of the more intangible aspects of the themes discussed earlier. The experiments were set up in the Computer Related Design department at the Royal College of Art, and consisted of real-time interaction with working cardboard test-pieces using microphones and speakers, linked to a central sound mixing unit, connecting different rooms.

We set up a situation where two tele-participants are involved in conversation, a third tele-participant 'arrives', eavesdropping at first, then trying to join in. We began to explore the use of sound to indicate approach, arrival, entry, and identity.

The use of a distortion device as a means of entering an existing conversation worked well, and proved to be a very subtle and interesting way of sonically signifying presence. The perception was that the distorted voice was somehow 'arriving' or 'appearing'. The disruption to the existing conversation was more gentle and it was easier to then accommodate the 'visitor'. But, nevertheless, it was felt that the people already involved in a conversation should have the possibility to block out the 'visitor' if they so desired.

During the distortion exercises we were unable to provide feedback for the person being faded into the conversation and this was felt to be a definite disadvantage. They should be aware of their condition, and also of the conversation already in progress and the effect they are having on it while 'arriving'. A mixed reaction resulted from knowing that others were present even though only two or three voices could be heard. Those that minded, felt that the bystander, ought to signify their presence somehow, possibly in the form of a 'sonic identity' which could be either related to the location, or to the personal identity of the

participant. This could be a minimal sound taking the form of static or interference. A participant familiar with the system would eventually be able to sense the passive presence of others.

Other experiments were tried where the glow from coloured light sources was used as feedback for entering into an ongoing conversation. After a short time these variations in light level lost their significance. The experience of being involved in a conversation totally dominated the situation. It was therefore felt that light was not as effective as sonic feedback and would be more appropriate for use during the build up to contact, rather than during the conversation.

This led on to some more specific ideas for light, for example indicating presence through different degrees of focus; or by spatialising a projected image by moving it off the wall on to the floor in response to presence at the another location, extending an invitation for communication.

The content of the projected image could also offer possibilities for visualising different zones of spatial sensitivity reinforced by audio distortion.

Design proposals

As architects and industrial designers we felt that it was important to explore scenarios that grounded these isolated ideas in the everyday life of a building and its inhabitants; examining how new tools could facilitate different forms of 'inhabitation' of the informatic atmosphere of telecommunicative possibility. We decided to use the Netherlands Design Institute as our sample building.

Within the vast 'field' of potentially interconnected buildings, small groups of buildings could link up to form tele-localities. People would soon become familiar with each other through the continuous intercommunication between small project-centred groups. The grapevine is probably a more appropriate analogy than the conference to describe the forms of communication such a system could support; informality, chance meetings, and coincidence could all find expression through this system.

In order to encourage this informality, new tools need to be located within the architecture in transitional zones and liminal spaces away from the work desk.

Access to the 'telelocality' is gained through pockets of responsive space. These zones can be at the scale of desktop objects, furniture or environ-

ments, their variable sensitivity comes through the use of ultrasonic fields which provide a form of 'variable threshold' or 'in-between space':

Balcony: here a threshold designed for browsing has been located on a mezzanine. Looking out on to the canal and overlooking the entrance lobby below. A perfect location for hanging about, watching and browsing. It provides access to the entire telelocality. A long thin field sensitive to approach penetrates the entrance to the space. Passers-by using the nearby staircase, are drawn into this field by the distant sounds of remote 'local broadcasts' and 'tele-conversations'. As they approach, the sounds of their own local electroclimate waft into the background of ongoing conversations and corresponding objects in different locations.

At this point, the second smaller field can be used as a browsing device. If nobody else is about at other locations, the signals being transmitted by your presence, could attract others. Each time a newcomer joins in, their presence and arrival are gently articulated through the use of the approach field and the transmission of remote local radio broadcasts.

The physical structure of the object offers some clues for its use, and its form is derived from a combination of invisible fields and the physical needs of browsing and idling. It is ultimately up to the individual to explore and exhaust its full potential for supporting different levels of etiquette and protocol.

Torso: this is located somewhere public, a large room or unused gallery. It is designed for eavesdropping, to be used when nobody is looking. The risk of potential embarrassment is exchanged for telematic pleasure.

Dance music emanates from the object on entering its field, which seduces the passer-by. As the object is waltzed through the tele-locality faint strains of music can be heard in other locations.

Castors enable the object to move freely, and it is only through constant movement that listening becomes possible.

The cabinet is located somewhere private. In a totally open system, it offers the privilege of privacy, perhaps only for use by a limited number of people.

It is an object for keeping in touch, a cabinet for containing distant skies. Each cabinet has a live image of the sky from

the other location projected on to it. As soon as somebody sits in one, the image on the other one slowly shrinks to the size of the cheek contained inside. The other person becomes aware of their presence, and knows that they might like to talk. When both cabinets are occupied, the participants can either enjoy the knowledge that somebody else is there too, or by leaning their face towards the 'cheek', gently open a channel and make contact.

Lobby: this is a fusion of waiting place and 'on-hold' space. It provides an opportunity for visitors to meet. The presence of a 'tele-visitor' within the fabric canopy, is indicated by a gentle warm breeze.

Drinks machine: this last object consists of a series of seats that operate within a limited range of a modified drinks machine. They are arranged to encourage people to gather and form small groups. By moving the seats close or far apart from each other, different channels can be opened and closed linking other places together and forming flexible 'tele-chat-spaces'. Body heat is used to indicate presence, warming-up time is used as a distancing device; once the distortion has cleared and you recognise who you are sitting with, you may feel like discreetly sliding over to the other half of the seat to be with somebody else. The seat has a built-in money box linked to a drinks machine at another location, and can be used to buy somebody remote a drink, or simply to buy a drink as bait, to attract somebody at the other end.

Next stage

The next stage of the project involves developing ideas experimentally, using a fairly basic level of technology, to investigate how these objects could be used to create new situations, habits and behavioural possibilities by actually plugging prototypes into real environments and observing their use and abuse over a more prolonged period of time.

This piece is extracted from a paper presented at the 'Doors of Perception II' conference, Amsterdam 1994.

PAGE 60: Lobby; PAGE 62: Seat; PAGE 63, ABOVE: Person in lobe; panspectron; CENTRE AND BELOW: Approach to the telelocality

