EMBEDDING AN AUDIOVISUAL INTERACTIVE INSTALLATION ENVIRONMENT IN URBAN SPACE FOR ENHANCING SOCIAL INTERACTION

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INTRODUCTION

This paper documents the creative process and attempts to record the impact of an open-air, site specific, interactive multisensory installation environment titled “DETOUR”, which was created by the interdisciplinary group “VE_design”, as part of the “Athens by Art” international exhibition during the summer of 2004. The site chosen for the installation was a very busy area within the urban context. DETOUR’s aim was to afford an alternative environmental experience, embedded within the noise and introversion of the everyday cityscape. Visitors were invited to participate in a mediated communication game with the DETOUR system, as well as with other visitors within the installation environment. The environmental experience comprised a series of different sensory modalities (spatialised audio, lights, microclimate and video) ultimately aiming at activating the senses, amplifying behaviours and instigating communication amongst its visitors.

The paper also focuses on the manner in which visitors responded to certain aspects of this electronically mediated environmental experience, how they interacted with the system and certain elements of it, how they interacted with others within the environment and how they felt about their experience. It mainly focuses on the manner in which this environment instigated interpersonal communication amongst people who happened to be walking in this urban area. The analysis of this installation’s impact is supported by interviews taken from visitors after their experience, reports by visitors after a certain period of time of experiencing the environment, video recordings and own observations.

THE CONCEPT OF ‘DETOUR’

Cities, as complex systems and contexts supporting communication are being re-ordered by technological systems and networks. Advances in information and communication technologies have begun to transform the potential for social relations taking place within the urban public space, as well as our perception of public spaces in general. These advances may also relate to a form of art, which considers the public space as its main context and is appropriately named “public art”. One of the main characteristics of this art form is its “site specificity”; in other words an attempt to establish an actual connection to the place and the context, instead of creating “drop sculptures” as was often the case in projects that involved art and architecture in the past. Considering the above parameters, the intention was to divert movement along the busy pedestrian walkway into an alternative, “strangely pleasant” environment. This urban intervention would function as a living mechanism and transform the everyday experience of the citizens’ human body and consequently their affective response to the urban environment.

The particular site selected for the installation was the flat roof of the eastern platform of the Thiseio metro station, south-west of Acropolis. The site and its characteristics were significant starting points for developing the concept of DETOUR. Considering the above parameters, the intention was to divert movement along the busy pedestrian walkway into an alternative, “strangely pleasant” environment. This urban intervention would function as a living mechanism and transform the everyday experience of the citizens’ human body and consequently their affective response to the urban environment.

Considering the specific site, a boomerang-shaped plan was proposed in order to underline the real function of a detour: avoiding a route, consciously choosing a different one because of its qualities, in order to reach the desired destination. Appropriately, the title of the project indicates the intention to create and provide the city with a discrete space within the urban fabric that co-exists but also transforms the site within which it is placed.

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1 VE_Design are Evelyn Gavrilou, Vassilis Bourdakis, Dimitris Charitos, Coti K., Aris Tsangrassoulis, Andreas Andreou and Dimitris Skoufis.
2 This exhibition comprised 85 art works, was sponsored by the Athens City Council, in collaboration with the Greek Sector of the International Art Critics Association (AICA) and took place in central pedestrian walkways of the city of Athens, from the 11th of August till the 30th of September 2004.
3 The basic characteristics of this site are: the intense heat during most of the day in August, the adjacency to a park that provides shade during the day, the historical and archaeological significance of the area as well as its vicinity to a very busy pedestrian walkway.
The passers-by who enter the installation environment may choose their itinerary and their role in the experience, thus becoming either a participant or a viewer. DETOUR’s transformation of place is not only visual; it is a responsive, synthetic environment embedded within the city that also interacts with its surroundings. It intends to modulate the density and direction of human flow, social encounters, the identity of space and occasionally functions as the setting where a performance may occur.

Figure 1: DETOUR’s 3D model – perspective view

According to Mark Johnson (1) “our reality is shaped by the patterns of our bodily movement, the contours of our spatial and temporal orientation, and the forms of our interaction with objects. It is never merely a matter of abstract conceptualisations and propositional judgements”. In order to understand an environment and provide a complete description of it, one needs to recall and organise the structure of spatial elements as well as the bodily activity and perception involved in its experience. The manner in which space is reconstructed in the mind through a sort of in-situ memory seems to provide rich information about the way a body inhabits, experiences and understands space. The mental setting of the body into the spatial framework of action affects the understanding of the environmental settings where the body acts.

“Perception itself depends on the skill and experience of the perceiver – on what he knows in advance...listening, feeling and looking are skilful activities that occur over time. All of them depend upon pre-existing structures which direct perceptual activity and are modified as it occurs” (Neisser, 3).

Such structures that relate ‘schemata’ of perception with the constructional elements of space need to be tracked and named when designing environments. Taking into account the way body and space interact in order to shape the embodied spatial experience, DETOUR’s design process, places an emphasis on the forms of interaction with objects, carried out on the main platform and the patterns of bodily movement the platform and the objects afforded as a whole. It is suggested that the interaction of the abstract properties of the ‘structural units’ of space with the embodied memory play a crucial role in the conceptualisation of spatial meaning.

Figure 2: DETOUR’s 3D model plan

The objects that visitors interacted with had to be identifiable structures. The final shape and form of these constructions resulted from ‘deconstructing’ the wooden deck and by ‘dislocating/breaking up’ selected parts of the wooden planks. We called these structural members ‘trees’. These vertical elements resemble derricks, brackets or arms of a dismembered body. They provide simple but strong images that can be retained in visitors’ memory, thus functioning as one ‘trademark’ for the installation.

The term ‘tree’ emphasises the coexistence of the artificial environment with the physical, situated right across the pedestrian street in a small park. These two kinds of environmental experience are not interwoven but juxtaposed within a new urban frame, that of artificial-natural, old-new, static-interactive. It is exactly when being between these dipoles of the urban context that the visitor has to act and give his/her own interpretation about the
One of the most important issues that DETOUR intended to tackle was the elaboration of movement and action within public space. Intentions underlying the design of this environment were:

- firstly to ‘invite’ the unsuspected visitors into the site
- to transform the installation space into an active place of performance
- to free the visitor from the constraints of public behaviour and to instigate social interaction amongst visitors who did not know each other, within the installation environment.

Sound and light were two very important elements that functioned as installation landmarks. The sound system spread the sounds of the installation to a wider spatial perimeter thus functioning as an invitation for further exploration. When visitors approached and acquired visual contact, they could observe and decide whether to enter. When entering the installation, they had to be motivated to remain within the environment for a period of time, long enough to let them live and comprehend the environmental experience. For this purpose, certain events were designed within the installation environment. Of central importance to the experience was a certain “happening” that allowed visitors to partake in a spontaneous performance. A ‘play-ground’ sub-space was established at a key position on the platform space, in an attempt to motivate the viewers into entering the game or the visitors into performing. A communication game that involved mainly verbal communication elements took place within this sub-space and instigated interaction amongst visitors.

The patterns of the visitors’ bodily movement within DETOUR would be defined by the static elements of the environment, such as the spatial boundaries, the material and form of ‘Trees’ and platform. They would also be defined by the spatial aspect of the auditory experience, which involved navigating amongst certain sub-spaces that were formulated by the way the sound sources were positioned within the installation space. The 8-channel sound display guaranteed a different auditory output displayed in each sub-space and the impression of the sounds moving within the overall installation environment.

Since DETOUR would be installed in a very busy, touristy pedestrian area, the experience of passers by when walking past this area is pretty much standard: they walk by in small groups, merely admiring the sites and views, while minimum interaction occurs amongst members of these groups. It was therefore intended to involve as many of these people as possible into an experience that would instigate some form of interaction amongst members of these groups, ultimately aiming at altering the social dynamics of this urban environment. Therefore, the design of static and dynamic aspects of the environment attempted to mediate communication between its visitors and the environmental elements but also amongst visitors themselves.

To achieve that, DETOUR comprised of a complex system that allowed for the input, real-time processing and output of multisensory information, provided by visitors’ activities. This system consisted of:

- **sensors** that captured voice, images/video, bodily movement in certain parts of the installation space
- a **computer** that stored and processed the input
- **display devices** that communicated the processed audiovisual and environmental activity information back into the installation environment, largely formulating the multisensory experience.

DETOUR did not actually contain any audiovisual content prepared in advance by the artists; it only provided a ‘mechanism’. People were invited to interact and intentionally provide their voices, images and kinaesthetic input to this mechanism and consequently the mechanism formulated the experienced result. This formulation occurred both in real-time and at a later time frame.

Firstly sounds and images were captured, processed, distorted and dynamically positioned, in real time, within the 8-channel audio system of the installation as well as an appropriately placed video projection. Positioning the audio in the installation space intended to provide a more dynamic spatial auditory experience. The main ‘play-ground’ space was designed so as to allow for two or more visitors to intentionally provide their voice and images to the system, while at the same time being visually aware of each other. This spatial arrangement intended to instigate communication between visitors, who consequently heard each other’s real-time processed voice as a result.

At the same time, the concept involved the idea that DETOUR’s artificial ‘landscape’ has a memory. Indeed, the DETOUR system functioned as a ‘log book’ that ‘remembered’ the voices and images of all people that had been in it. Consequently, processed versions of these sounds and images that had been stored were randomly selected and communicated again to future visitors of the environment into the installation environment.

In this sense, DETOUR is an artificial ‘landscape’, which remembers the voices and images of people who visited it and randomly recalls them, thus redefining all captured raw audiovisual content. This
way, visitors were able to communicate with other visitors that happened to be in the installation environment at the same time with them but were also able to receive messages from others who had visited the space some other time in the past. The synchronisation of displayed audio and visual captured information intended to give visitors a richer (although appropriately distorted and intentionally fragmented) picture of who communicated what and when.

At a third level, DETOUR afforded playful interaction of individual visitors with the system’s displayed content. Visitors could affect the way that sounds were being displayed at particular points within the installation space, by appropriately moving their body in relation to certain elements of the environment.

CONSTRUCTING DETOUR

The hardware

- **The Deck** was the surface on which activity occurred. This surface was raised from the original street level in order to mark the boundaries of the installation, introduce a degree of instability, facilitate some form of isolation from surroundings and enhance the overall experience. This deck was a timber construction of low-grade raw material giving a long lasting and rough finish to the project.

- **The ‘Trees’** were ten beams that ‘pierced’ the deck surface and unfolded up to 3 metres, ‘embracing’ the activities taking part within the main deck. These structures were made out of timber and carried all input-output devices:
  - **Interaction Pods**: Two timber enclosures each, featuring an activation button, a web-cam for live feed video capture and a microphone. The pods were placed on the two central ‘trees’ opposite one another thus formulating the central interaction-play space
  - **Digital Sensing hardware**: Four proximity sensors placed within appropriately constructed fibreglass spheres and mounted onto ‘trees’ neighbouring the Interaction Pod ones
  - **Audio Playback**: Eight loudspeakers on custom-made plywood enclosures mounted at ear level on each non-interactive ‘tree’
  - **Microclimate**: Water spray jets, spraying from the top of each ‘tree’

- **Audio**: The influence area of the sound played back by the system exceeded a hundred metres, value greater than the visibility of the installation. The installation ‘amplified’ typical aural sensory values, promoting sound to becoming the main means of instigating communicational activity amongst visitors. At the same time, appropriately programmed real-time transformation of this audio input secured a less direct communication of linguistic messages.

- **Video**: Images captured by DETOUR were processed, reorganised and displayed on a metro station lift wall at the northern side of the installation. Projection was only activated when ambient lighting was low. This visual display functioned in a complementary manner to the audio output.

- **Lighting**: The deck consisting of timber planks placed a few millimetres apart enabled the installation of under the deck neon diffuse lighting. In order to create a dramatic effect on visitors’ figures, add fill-in light for camera capturing and highlight the ‘trees’, a spot light is flush mounted on the deck underneath each ‘tree’.

The software

A PC equipped with an 8-channel audio system running Max/MSP and Jitter software, interfaced with the proximity sensors, switches, microphones and video cameras was secured within the construction. The software randomly selected images, were processed and displayed on screen. Regarding the auditory aspect of the environment, the system database kept all sounds recorded during the life of the project, and at a later time proceeded to randomly select some of them, transform and display them, along with all other real-time captured and displayed audiovisual content.
DISCUSSING THE RESULT OF THE DETOUR EXPERIENCE

Before concluding, the paper discusses the response of visitors to the experience afforded by DETOUR. It particularly refers to the way that they acted while being on the platform and while interacting with the system and focuses on the manner in which this environment instigated interpersonal communication amongst people who happened to be walking by the installation. Finally, it documents the affective impact induced by the experience, by utilising a series of interviews taken from visitors after their experience, questionnaires answered by more than 30 participants after a certain period of time of experiencing the environment, video recordings and own observations.

Acting and interacting in DETOUR

After systematically observing the behaviour of visitors, while they interacted within the installation space, several suggestions can be made: Visitors were not given any instructions as to how they could interact with the system of the installation. A small percentage of them did not bother to search for the interaction mechanism and simply passed through the installation space without an active response to the experience, merely perceiving the atmosphere and listening to the sounds. However, the majority of visitors did indeed interact with the system, to an extent and at least offered their voice as input to the system\(^4\). It is believed that some of them understood the interaction mechanism by observing others, while they interacted with the system. The age for visitors who visited the installation ranged from 1-year-old kids held in their parents’ arms to more then 70 year olds who felt the urge to somehow participate. The most usually observed response from a kid was to playfully interact with the environment, while most of the grown-ups seemed that they firstly needed to somehow acquire the meaning of the work, before allowing themselves to participate in the experience.

One of the main aims of the installation was to instigate interpersonal communication amongst individuals that did not know each other and happened to pass by this area. Indeed, such activity was very often observed within the installation environment. Probably, when people entered the spatial context of DETOUR they felt they could behave in a more playful and exploratory manner and interact with the dynamic elements of the installation as well as with other visitors within the environment. Certainly, visitors’ observations, which were reported, affirmed some of these suggestions. An excuse for this interaction to begin was the communication game that occurred in the central area of DETOUR. At this point, visitors would begin to communicate with other visitors\(^5\) on the platform and to chat, laugh, exchange vocal messages (phrases, shouts, songs, cries etc.) or to flirt, guide each other or discuss what they were experiencing. Indeed the artists observed total strangers, sometimes from different parts of the world, communicating and playfully interacting with each other in the context of their experience of interacting with the system.

Another interesting kind of behaviour observed was a tendency to perform. Once the visitors realized that the installation system was somehow projecting their voices and images to others, within or outside the installation, they would try to act or speak/shout/cry/sing in a out of the ordinary manner, in order to attract attention from others. We observed clear performative acts, as well as spontaneous and ‘private’ behaviours that wouldn’t have been performed without the excuse of the ‘play-ground’.

Visitors could be categorized into the following categories, according to the way that they responded to the experience:

- **Passers-by** who merely stared and listened to the installation environment, acquiring the role of a theatre audience member, when somebody on the installation would act in an interesting manner.
- **Visitors who interacted** for a period of time and displayed investigative behaviour towards understanding the mechanism of interaction and the functionality afforded by many elements of the environment (i.e. some may have tried to speak into speakers or to use elements of the installation as instruments for producing their own sounds.)
- **Visitors who were too keen on interacting that they gradually acquired the role of a performer**, projecting their behaviour and voice (as well as images) onto others outside or within the space.
- **Visitors who played a functional role in helping others experiencing the environment**, by giving them advice on how to interact or by of playing the role of a guide into the environment\(^6\).

Finally there were those who reacted badly onto elements of the installation and vandalized them. This reaction is not necessarily considered as a negative one as it helps us make interesting hypotheses about people’s response to an interactive audiovisual work exhibited in public space and was thought to raise more general questions regarding the nature of such works and their vulnerability.

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\(^4\) Approximately 250,000 voice files have been recorded in the hard disk of the system

\(^5\) In most cases these other visitors were total strangers to them.

\(^6\) No prior communication had occurred between the team of artists and the individuals who guided others within the installation space.
Affective impact of DETOUR

When asked what they felt when in the installation environment, most visitors reported that they felt: pleasure, happiness, surprise, curiosity, interest, sense of freedom, playfulness, enthusiasm, excitement, puzzlement, ecstasy, tendency for social interaction and relaxation. They mostly attributed these positive feelings to the activities afforded by the installation (ability to explore, experiment, participate, to partly control the experience, to interact with the system and with others, dynamic character of the content and the space) as well as to environmental elements (auditory environment, interesting timber structure, water spray) and to the originality of the experience they had. Fewer reported that they also felt: stress, fear, sadness, unrest and discomfort and attributed these feelings to: the crowdedness of the installation space, the repetitiveness and, in some cases, harshness of the auditory content, the children screaming and playing all over the place and generally the freedom of expression exhibited by others.

When asked what they proceeded to do when in the installation space, they reported that they: walked along the space and generally moved about, explored, played with or touched elements of the installation, spoke, shouted, laughed and listened, jumped, sat and relaxed on the benches integrated within the structure, stared at the environment and others and finally interacted with others in various ways.

When asked to describe the atmosphere they felt when in the DETOUR environment, they used the words: weird, funny, happy, friendly, dynamic, enthusiastic, mysterious, eerie, dreamy, dizzy, cloudy, interesting, supernatural, exciting, exploratory, familiar, puzzling, primitive, introvert, scary and wet.

Finally, when asked which elements of the installation had they kept in their memory7 after the experience, they mentioned: the auditory experience, the form of the overall installation setting, the water mist which had also been perceived as smoke, the “tree” structures, the freedom to interact, play and participate.

REFERENCES


7 This question was included in a questionnaire given to visitors some time after the experience.