

EAST BY WEST

interactive telepresence installation



CONCEPT AND ARTISTIC PRODUCTION

Johannes Birringer, Sher Doruff, Orm Finnendahl

DOCUMENTATION MARCH 2003

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PROGRAMMING

Software: PD, sound/graphics design (Finnendahl), Keystroke (Doruff, and Waag Society, Arjen Keesmaat, Tom Demeyer, Niels Bogaards, Just van den Broecke).

PROGRAMMING ASSISTANCE

Free Software Foundation (GNU/Linux), Miller Puckette (PD), Paul Davis (RME driver), Bill Schottstaedt (sndlib) and Stefan Kersten (adoption of PD to sndlib), Heiko Schlittermann (LUG Dresden); EyeCon (Frieder Weiß); Simon de Bakker.

Concept

EAST BY WEST was started in the framework of the *Forum Realtime and Presence*, a workshop organized by the Trans-Media-Akademie Hellerau (Dresden) and held in Nürnberg in March 2002. The purpose of this workshop was to bring together artists and technicians from different areas and countries, not knowing each other beforehand to develop new ways of collaboration. Therefore it is important to mention that the whole piece including its conception and technical realization was entirely webbased and started in a very open form, finally condensing in two realizations so far. The whole process of development is documented in the Internet (<http://www.aliennationcompany.com/gallery/rttext.htm>). See also the artist's statements below.

The first exhibition took place at Festpielhaus Hellerau, July 2002, at the conclusion of the Real-Time/Presence Project organized by Trans-Media-Akademie Hellerau (Dresden).

Website: <http://www.aliennationcompany.com/gallery/realtime.htm>

An expanded version (2.0) of EAST BY WEST was exhibited during the „Data Knitting“ DEAF 2003 Festival organized by V2 in Rotterdam at Pakhuis Las Palmas, February 25 - March 7, 2003.

Websites: <http://www.aliennationcompany.com/gallery/deaf.htm>
<http://deaf.v2.nl/deaf/03/homepage/homepage.html>

A third version is being developed for an interactive media-technology workshop that will take place at the Coalmine Götterborn, Saarland, in July 2003.

Website: <http://www.aliennationcompany.com/gallery/goet.htm>

Overview

EAST BY WEST consists of two interactive, distributed environments (rooms) constructed at opposite ends of a building—or remote sites—and connected via live video-audio streaming.

Both environments explore the emergence and temporal synthesis of musical, visual and kinaesthetic perceptions in two similar yet different „geographic“ architectures.

Each of the landscapes can be experienced as different „states“:

The East (Orange County) is warm and brightly lit, and its organic texture invites intuitive interaction with the suspended oranges. The slightly swaying oranges convey a meditative feeling of a world in continuous slow motion. One of the oranges is painted fluorescent. A live video stream connects both environments, and a mixed image of both spaces gets projected onto the walls of the environments. Loudspeakers play the streamed sound of both rooms which is affected by the playful behavior of the visitors.

The West (The Dead Sea) environment with the black sand is darker, eerier, and more ghostlike; boccia balls are on the sand, inviting a game. One ball is fluorescent, like a brighter star in a dark galaxy.

A projection of geometric shapes washes over the sand, the same image stream is also layered into the telepresence images on the walls. The shapes represent sounds which can be „played” using the fluorescent ball which is tracked by motion tracking cameras. The environments are crosslinked in such a way that using the ball doesn't only play the „instrument” in the local environment, but also changes the geometry of the images in the remote environment. The telepresence images on the walls show the mix of the soundings and the players' actual behavior or performance interaction.

The installation invites the visitor to explore the spaces and try out different interactive games between the landscapes.

Space requirements

WEST ROOM

ROOM SIZE

18 long x 7,21 wide (variable) 4, 80 high, ceiling grid needed for hanging lights and projectors yellow sand playspace with bocchia balls, 1 fluorescent ball

INTERFACE

5.60m long 4.50m wide

tripod for projector: 2.30m (center left side) projection image height (bottom), 1.35m, projection size maximum hanging device for ceiling projector (clamps, front side), electric cord, VGA cable

EAST ROOM

ROOM SIZE

18 long x 7,21 wide (variable) 4, 80 high, ceiling grid needed for hanging lights and projectors black sand/orange garden playspace / 80 oranges, suspended with fishing wire; 1 fluorescent orange

INTERFACE

5.60m long 4.50m wide

tripod for projector: 2.30m (center right side) projection image height (bottom), 1.35m, projection size maximum

Interface design

(1) TECHNICAL

The technical part of the installation is split into two parts:

1. A Live video stream, projected to one wall in each room, containing a blended mix of live image of both rooms, enabling a direct interplay using the similar shaped objects (balls/oranges) between the rooms.
2. The Audio system: In addition to the live image, circles are projected on the screen. These circles move depending on the movement of special tracked objects in each room (a hanging orange in the East room/a ball in the West room). These circles represent multichannel sounds and are rendered live according to position and size of the circles: Each time a light grey circle resembling the tracked ball in the West room intersects with one of the black circles resembling the oranges in the East room, the sound gets generated (making the black circle turn red for the duration of the played sound). The speed of the tracked orange in the East room translates to size, movement and spread of circles in the display, making the circles harder to hit with the ball in the West in active situations.

Part of the installation is this twofoldness of possible interactions, blurring the distinction between a video and a sound installation encouraging different interpretations of the representation: Any kind of action, whether aimed at the video live image or aimed at the sound will have consequences in both realms. The display can be seen as an abstract landscape-like canvas of the sounds or as a video „window” to the other side. The objects have in common their visual representation as circles. Everything else is left open to the invention and imagination of the visitor.

In strictly technical terms the piece can be considered a cross-platform networked system. It can be divided into three parts:

1. Motion tracking system (software: EyeCon, hardware: 2 Windows based computers)
2. Central audio/video scheduling and rendering of sound and floor projection (software: mostly pure data, hardware: 2 Linux based computers)
3. Video streaming and rendering of the visualization of audio data on the wall (software: KeyWorx, hardware: 5 Macintosh based computers)

Communication between the platforms and systems is established through TCP and UDP using OSC and other custom defined protocols. The rendering of the visualization of the circles resembling audio data is done using a custom plugin developed for KeyWorx. The circles are actually rendered twice, once in pd for the floor projection and once in KeyWorx for the wall projection/streaming.

The development of the software - much as the whole project - was heavily internet-based: For development of the KeyWorx plugin, a pd session on a computer in Rotterdam was started remotely from Berlin (using a remote display and terminal), the data got sent from Rotterdam via tcp to Amsterdam, where it got interpreted and rendered by KeyWorx, sent back to Berlin, where it was compared to the original output of pd.

(2) CONCEPTUAL

The synthesis underscores the experience of the visitors and their strategic play or intuitive interaction with potential games or performance environments. Both landscapes invite the visitor to explore and play with the objects in the environments, and to communicate across distance. The interface in EAST BY WEST is designed as a physical navigation; the visitor can experiment with the transformation of spatial imagination (real space as virtual space), enter the landscapes and the experience of time and synchronicity.

The experience is generated through sound and actions/behaviors of the visitors in environments of hyperplasticity. The term „hyperplasticity” refers to the emergent relationships between visitors in both sites as they engage with the spaces, their textures, and the „transobjects” they find in the landscapes. The fluctuating conditions in both environments will depend on the behavior of the visitors, but they also have a life of their own (the light will change, the videostreams with the superimposed images from both spaces oscillate and, in regular intervals, make the visitors from either side appear and disappear).

The social and aesthetic dimension of the work therefore depends on a careful examination of interactivity understood here as process through which meanings of locales and milieus are constantly evolving, adaptable and redefinable. The concept of networked, translocal spaces allows investigation of the nature of real-time sound synthesis and how extended physical space can be shared by people when they play with fictional geographies, strange or familiar objects, and their mediated presences. Telepresence restructures and enlarges the environment with its projection (window) of mediated and combined presences in action.

Linking a „local” site with a „remote” site raises particular challenges for our understanding of new artistic paradigms in telepresence, distributed and „navigational” art. The social orientation toward sensual environments and „hyperplasticity” is not directed at euphoric assumptions about virtual reality (VR) but at concrete, synaesthetic processes of cognition and intuition. EAST BY WEST addresses the visitors’ playful fantasy and tactile exploration of the environment; the interface becomes useful if such play recognizes how parallel reality-systems can converge or affect each other, how we integrate other realities into our social experience.

Statements by the artists

(1)

The conceptual, design, and programming development of the interactive installation took place more or less entirely over the net without the collaborators knowing each other at all. It really was a joint, web-based development.

Each of the collaborators brought a distinct quality to the design process which is related to her/his artistic background and transmedia experience. It has been an open process, and the installation environments are still in evolution, even after two public exhibitions in two very different physical contexts.

As an interactive digital environment, the work involves the audience-participant and audience behaviors which can be observed and analyzed. As an interactive, real-time processing environment, East by West claims, as one of its main applications, the exploration of cross-interfaces (motion tracking, real-time sound synthesis, telematic communication and play via live video streams) which can involve multiple „users” and players at the same time in distant rooms and remote locations.

The work is not interested in an immersive „out of body” experience of a virtual environment, but committed to involve the audience players in a very physical and experiential manner, testing the intersections of public spaces with the virtual, and with the unpredictable, emergent relationships that occur when people communicate across a distance.

EAST BY WEST will undergo further refinements in the design and the programming of the interface, and the next installment of the environments is planned for July 2003, at an interactive laboratory at the Coal-Mine Göttelborn, Saarland.

(2)

Ecological Application: Collaborative Software Culture and Interactive Media

Trust and cooperation are endemic to any functioning collaborative environment that scales up from the binary, nearest neighbor, on/off rules of cellular automata to engage in a more multi-dimensional interaction. Arguably, artists controlling media parameters in a shared, co-authored environment are more interested in the cooperative „reciprocal altruism” of the moment rather than competitive beauty bashing. Petr Kropotkins rejection of Darwinian competitive models of survival and insistence on cooperative survival strategies that mutually aid both species and individual is a more credible model for artist inhabited media ecologies.

Referring back to properties of self-organization, diversity and difference are key to the transformation of cooperative dynamics into something greater than the sum of its parts.

Online multi-user games represent a large community of players experienced in live interaction. Of these, popular civilization games, such as Age of Empires and Everquest cater to Darwinian, or to be more blunt, Social Darwinian, strategies. A different take on the zero-sum (winner-take-all) shooter genre, the goal is still survival and the axes and arrows inevitably fall. This is not a diatribe against the influence of gaming industry principles but a search for the possibility of group negotiation that evolves through true, cooperative, interauthorship.

As we live in times of war and aggression against people, there is an even stronger need to stress alternatives to the understated but ever-present inclinations of Social Darwinian self-preservation through combat.

The advent of real-time, media rich performative technologies enabling synchronous multi-user creation counter-balance the „survival of the fittest” competitive edge with a clear stance towards the cooperative.

EAST BY WEST adheres to this philosophy of shared real-time interaction, production and distribution between multiple users.

Additional materials/documentation

1. VHS tape (NTSC/PAL)

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| (a) Visual impressions of the various aspects of the interactive installation and the audience behavior during the exhibition of EAST BY WEST at DEAF 2003 | 7:32 min |
| (b) Sketches of the design construction and interface behavior of the installation during its development phases in Hellerau and Rotterdam. | 3:44 min |

There are two short additional films of the installation and the visitor behavior during its first presentation at Festpielhaus Hellerau:

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|--------------|----------|
| (c) The East | 1:59 min |
| (d) The West | 3:30 min |

2. DVD

The DVD contains the same films on its menu, giving the reviewers optional choices.

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Biographies

JOHANNES BIRRINGER is an independent choreographer and media artist. Since 1993 he is artistic director of AlienNation Co., an ensemble whose works have been shown in Europe, North America and Latin America. His film installation „Vespucci” recently toured Brazil. Since 1999 he leads the dance and technology program at Ohio State University and the Environments Lab. He is a founding member of ADaPT, a collective which conducts research in telepresence. („<http://www.aliennationcompany.com>”).

SHER DORUFF is a digital artist working in the performing arts for three decades. Since 1994 she works solely with real time interactive performance technologies collaborating with interdisciplinary artists. She is currently project director of a software development project, KeyStroke, and co-artistic director of the Sensing Presence department at the Waag Society. She is a doctoral student at the London Institute and a researcher at the Amsterdam School of the Arts.

ORM FINNENDAHL is a composer working mainly in the field of Classical Contemporary Music. He studied music and composition in Berlin, Stuttgart, and Los Angeles. 1991-95 he was artistic director of the Klangwerkstatt Kreuzberg. Teaching positions include the electronic music studio at TU Berlin, the Institute for New Music at HdK Berlin, and Institute for Computer Music and Electronic Media (ICEM) at Folkwang-Hochschule, Essen. He received various scholarships and awards, including the Busoni Award (1999), a honorary mention at ars electronica (2001), and the first prize at CYNETart in Dresden (2001).