

Subject: [Locative] ART BY TELEPHONE: FROM STATIC TO MOBILE INTERFACES

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ART BY TELEPHONE: FROM STATIC TO MOBILE INTERFACES [1]

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ABSTRACT

This article investigates artworks that use telephones as interfaces. Considering telephones as telepresence technologies, it focuses on the point of transition from the fixed to the mobile telephone, exploring how artistic practices change when one component is added: mobility. In addition, location awareness capabilities transform cell phones into more than voice devices. Consequences can be perceived in artistic experiences that bring the medium into public spaces, transforming them into ludic and collective interfaces, pointing to how mobile technologies can be used in the future. From a broader perspective, this study addresses how art mediated by technology deals with the connection between physical and digital spaces.

This article investigates how the artistic approach toward telephones changes when they become mobile. The transition occurs mainly because cell phones are no longer only voice devices. Mobility and location awareness transform them into social and ludic technologies, giving them the ability to merge physical and digital spaces and for a user to find one's relative position in the globe merely with a personal handset. Examples of artworks with fixed and mobile telephones help to clarify this transition.

Reviewing artworks with telephone handsets helps us to remember how the device has previously been used as an artistic interface and to imagine new approaches when this interface becomes mobile [2].

SOME EARLY EXPERIMENTS IN TELEPHONE-BASED ART

Very early on, some artists started to use telecommunication media to develop projects. Experimenting with remote-controlled creation may have been the first use of telephones to produce art. L?zlo Moholy Nagy, considered one of the first artists to create a telepresence piece, experimented using the telephone to transmit directions for fabricating enamel tile paintings. He wrote:

In 1922, I ordered by telephone from a sign factory five paintings in porcelain enamel. I had the factory's color chart before me and I sketched my paintings on graph paper. At the other end of the telephone, the factory supervisor had the same kind of paper, divided into squares. He took down the dictated shapes in the correct position. (It was like playing chess by correspondence.) One of the pictures was delivered in three different sizes, so that I could study the subtle differences in the color relations caused by the enlargement and reduction [3].

Eduardo Kac suggests that nobody knows whether Moholy-Nagy's story is true or not, because his wife stated that in fact she ordered the paintings in person. Moholy-Nagy's work, however, whether actual or apocryphal, demonstrates that the artist could be removed from the location of artmaking.

In 1969, the Chicago Museum of Contemporary Art organized an exhibition called *Art by Telephone* that to some extent repeated Moholy-Nagy's experiment. Thirty-six artists were asked to place a phone call to the museum and to instruct museum staff about what their contribution to the show would be. The museum then produced the pieces and displayed them. *Art by Telephone* did not actually explore the telephone as a new artistic medium; the telephone was only used as a remote interface to accomplish something that could be done, for example, if the artist went to the museum and talked to the curator.

Kac says that one of the few creative uses of the technology by an artist in this exhibition was accomplished by Robert Huot [4]. The artist, he writes,

. . . potentially involved all visitors of the museum and attempted to generate unexpected first meetings by employing chance and anonymity. Twenty-six cities in America were chosen, each starting with a letter of the alphabet, and 26 men named Arthur were selected, one in each city. Each Arthur's last name was the first listing under the initial letter of the city (Arthur Bacon, in Baltimore, for instance). The Museum displayed a list of all cities and names, and invited visitors to call and ask for "Art." The work was the unexpected conversation between "Art" and the visitor, and its development totally up to them.

Huot's piece presents the artist as the creator of a context, in which the visitor participates in the creative process. Here the telephone is used to turn art-making into a social experience. Generally, up until the end of the 1990s, artworks that used telephone handsets were almost all restricted to calling another party, using the pho! ne's ring as an artistic element and recording voice messages.

More recent pieces that employed the telephone include the works developed by the Disembodied Art Gallery, a British group that explores conceptual and telecommunication-based art. For instance, *Babble* was a telepresence-art installation created in 1993 that received over 70 voice contributions from the United States, Australia, Japan and Europe. Callers telephoned a U.K. number and could record poetry, stories and thoughts on an answering machine. These messages were then collected and replayed automatically to visitors of the gallery whenever a member of the public entered the installation room. *Temporary Line* (1993-94), another piece by the Disembodied Art Gallery, was an audio-reactive sculpture constructed from telephone handsets. Whenever a member of the public walked close to the sculpture, the sound of whispering voices would dart around the sculpture, from telephone handset to telephone handset, at random around the feet of the visitor.

The common idea behind most of these projects is not so much to explore synchronous communication, as is considered the general use of the telephone, but to investigate the use of a recorded presence or voice as a past presence. Telephones have been considered by some as the ultimate virtual medium because they eradicate the distance between disembodied voices [5]. The telephone thus transforms the pure element of voice into presence: an absent presence. The above-mentioned artists used the communication technology to emphasize not only this removal in space, but also a removal in time, by bringing past recorded voices into the immediate present.

Heath Bunting, a contributor to the Disembodied Art Gallery, created a piece that incorporated the use of the Internet to reach a more spatially distributed audience. The 1994 piece *Kings Cross Phone-in* scattered numbers of telephone kiosks surrounding the

London Kings Cross British Rail station via Internet, asking whoever found the numbers to choose one and call it at a specific time and chat with whoever picked up the phone. Likewise, in December 1996, StallPlaat, to celebrate their 100th CD release, created *The Answering-Machine Solution CD*, a large collection of 30-second tracks that could be used as answering machine messages. Keith Mendonça, from the Disembodied Art Gallery, provided the front cover for the CD and an answering machine message.

Also using telephones in public space, Stephen Wilson created a telephone-based project called *Is Anyone There?* (1992) over the period of one week in San Francisco. In the project, a computer-based system with digitized voice capabilities made hourly calls to five ringing pay phones on the streets with the aim of involving whoever answered the calls in conversations about life in the city. The system used intelligent response programming to engage passers by into a short dialog. The conversations were then digitally stored in a database and accessible through an installation that included a database of these recorded calls. In the gallery, the installation changed randomly to a real-time mode that placed live calls to the pay phones, linking viewers with a real person on the street. With this piece, Wilson tried to explore random communication between strangers, situating the user in the role of being a content creator. Furthermore, he looked into possible developments ! f!
or artificial intelligence systems, by analyzing dialogues between computers and humans.

It is possible to perceive two characteristics in the above-mentioned works. First, although the works could have been performed in urban spaces, such as *Is Anyone There?*, they were still connected to a fixed place, such as a payphone. Second, the pieces mostly transmitted voice and stored voice messages. This scenario changes with mobile phones.

MOBILE PHONES: BRINGING THE INTERFACE INTO PUBLIC SPACES

In the last ten years, cellular phones have become a highly popular form of telecommunication technology, exceeding the number of existing fixed landlines and personal computers. Because of its relative affordability, cell phone ownership has increased much more rapidly than PC ownership. This gap is markedly larger outside the U.S. In the United States, the ratio of people owning cell phones to those owning PCs is fairly close: 54.3% to 65.89% respectively [6]. However, in countries where fixed telephone lines are expensive and not so widespread, the difference is substantial. For example, in Brazil 26.36% of the population owns a cell phone, while only 7.48% have PCs. The same difference applies to other countries in Latin America, such as Paraguay and Mexico. Likewise, in Japan there are more than 86 million mobile users (67.96%) as opposed to 48 million (38.22%) PC owners. Finally, in Finland 90% of the population uses cell phones while only 44.17% have PCs at home.

The large number of cell phones in use worldwide makes them a significant social and communication tool. Moreover, the use of mobile phones as artistic interfaces both reaffirms their popularity and indicates new uses for the technology. The artistic use of mobile communication interfaces is an arrow pointing in two directions. First, it draws our attention back to past telephone-based artworks and second, it foresees new uses for the mobile interface. Although in the United States and in most Latin American countries the cell phone is mostly used to speak, much like a "mobile telephone," developments of the mobile Internet, SMS (Short Message Service), camera phones and location-based services, mostly in Japan and Scandinavian countries, transform the mobile into more than a telephone.

Telecommunications-based art is primarily concerned with connecting distant and contiguous spaces. According to Frank Popper [7], communication art has six main characteristics: (1) it stages physical presence at distance, (2) it telescopes the immediate and the delayed, (3) it focuses on the playfulness of interactivity, (4) it combines memory and real time, (5) it promotes planetary communication and (6) it encourages a detailed study of human social groupings. In a broader sense, it can be said that telecommunication art not only foresees new developments for existing technologies, but also changes our perception of space. It focuses on the relationships between participants, rather than on the creation of material objects, in a situation where the author is the context provider, not the content creator.

While the fixed telephone connected specific places, cell phones connect people who roam through urban spaces. Mobility strengthens the playfulness of interactivity, transforming urban spaces into a hybrid reality. Hybrid spaces are created by the merging of physical and virtual spaces. These hybrid spaces incorporate mobility and sociability.

When the cell phone arose, it was generally regarded, as in the early days of the telephone, as a medium to transmit mainly urgent messages [8]. Even now, cell phones are viewed in many parts of the world as mobile telephones, that is, a telephone that can be carried around, used mostly for voice conversations. However, the incorporation of new functions such as text messaging (SMS), multimedia messaging (MMS), and location-based services contribute to the creation of new meanings for the mobile interface. The cell phone's potential for making new art is explicitly highlighted in cities with dense populations, because there is more potential for people to interact with each other. The emergence of nomadic technology devices allows whole cities to be used as a "responsive surface," or as a game board. It is as though the urban space has become a map of itself, a place for interaction and long-distance contact, without the need for a restricted or fixed space.

In the following section, I will discuss works that use cell phones as promoters of collective and social actions in public spaces. They envision the phone no longer as merely a voice transmission device, but also as a musical instrument and a game controller [9].

DIALTONES: A TELESYMPHONY

At the Ars Electronica 2001 in Linz, Austria, Golan Levin and the Ars Electronica Festival used the audience's cell phones to create a music concert at the Brucknerhaus Auditorium. Prior to the concert, members of the audience could register their cell phone numbers in kiosks, after which they would be assigned a seat in the auditorium and have a set of ringtones downloaded to their phones. Knowing each person's position in the auditorium and their respective ringtones, the computer could call them and produce a musical symphony, which became a product of collective authorship.

This piece was innovative because it used cell phones as musical instruments. Although *Dialtones* was not a communication experience and did not include voice, it can be regarded as a social and collective action occurring in public space [10]. The distance from the mobile phone as a two-way voice communication device becomes even more pronounced when cell phones' power is used to create collective games.

BLINKENLIGHTS: THE CELL PHONE AS A REMOTE CONTROLLER AND GAME DEVICE

In 2001, the Chaos Computer Club transformed an eight-story building in Berlin's Alexanderplatz into the world's largest interactive computer display. One hundred forty-four lamps were arranged behind the building's front windows and were independently controlled by a computer to produce a monochrome matrix of 18 x 8 pixels. Users could "control the building's facade" either via their cell phones or the Internet, creating animations, playing Pong, or sending love letters.

Participants could use their mobile phones to call a specific number and play Pong against the computer. At first, they heard instructions like "use the 5 to move the paddle up and 8 to move it down." If a second person called the system simultaneously, one caller played against the other. The difference between *Blinkenlights* and an ordinary computer game was the size of the "screen": a whole building in the middle of "Alex."

Blinkenlights transformed cell phones into game devices and brought the game board/screen outside into social urban spaces. The enlargement of the game board to the size of a building facade immersed large numbers of players and passersby into the game, transforming physical space into the game board. The possibility of carrying around the game control (that is, the cell phones)

allowed people to interact with the screen and with each other in an open space. *Blinkenlights* explored the cell phone's potential to engage large groups of urban users and viewers in a hybrid space that is both virtual and physical.

BROADENING THE CONCEPT OF MOBILE TECHNOLOGIES: BLAST THEORY

Although the British group Blast Theory did not initially work with cell phones, their projects foresee new ways mobile communication devices may function in the near future. In conjunction with the Mixed Reality Lab at the University of Nottingham, England, Blast Theory employs handheld computers and wireless devices to mix physical and virtual spaces, transforming the city into a playful multi-user experience. Their work focuses on developing games that occur simultaneously in physical and digital spaces, integrating and forming communities between online players and players who walk on the street. In their games, an action in the physical space might influence a decision in digital space and vice versa.

Blast Theory's first collaboration, *Can You See Me Now?* [11], resembled a traditional Pac-Man video game played in hybrid space. Players from anywhere in the world could play online against the members of Blast Theory. Tracked by satellites, Blast Theory's runners appeared on a virtual map of the city center next to online players. On the streets, handheld computers showing the position of online players guided the runners in tracking online players down. Street runners were equipped with handheld computers connected wirelessly to the Internet, GPS receivers and walkie-talkies to communicate with other users. Up to 20 people could be online simultaneously. Online players ran away from street players in order to elude capture. If a street runner caught a virtual player, she was supposed to take a picture at the place where the chase ended, which was obviously an empty space. Street runners caught an online player if they were within 5 meters of each other. The game has since

been played on specific days in Sheffield (UK) in 2001, in Rotterdam (Holland) in February 2003, and in Oldenburg (Germany) in July 2003 [12].

Similarly, Blast Theory's recent collaboration, *Uncle Roy All Around You* [13], sets online players alongside players on the streets. Street players search for Uncle Roy with the aid of handheld computers. On the other hand, online players search for the street players and also for Uncle Roy in a virtual model of the same physical area where the street players are running. Online and street players must work together, and they have 60 minutes to complete the task. Street players can see online players on the maps of their handheld computers and online players can see street players in the virtual modeled city. During the gameplay, online and street players can communicate through walkie-talkies and ask each other for help. The game was played in 2003/2004 in Westminster, Manchester and West Bromwich (UK).

With the inescapable availability of 3G phones, which incorporate all of the above-mentioned features [14], Blast Theory started using cell phones as their primary interface. Their most recent project, *I Like Frank* [15], is a similar experience that uses 3G cell phones to connect virtual and physical players in Adelaide, Australia (2004). Blast Theory looks to establish cultural spaces for mobile devices via games. Future games might allow the public to play on the streets using their own cell phones. The rapid worldwide spread of "smart" phones may increase the potential for this type of games and ludic experiences with cell phones to bring together users in different and distant places in the world.

Within this context, it is important to understand that when mobility was added to telephones, they became more than mere mobile phones. Mobility brought new artistic meanings to the telephone interface: bringing phones into the city space, releasing them from a fixed place, transforming them into collective/social mediums and ludic devices. Henry Jenkins suggested that "games have been to the PC what NASA was to the mainframe - the thing that pushes forward innovation and experimentation" [16]. Location-based activities will play the same role for cell phones, differentiating them from fixed phones and increasing their power for communication and community formation.

Mobile and pervasive technologies help us to be aware of the physical space in which we live. Digital technologies in the 1990s were mostly criticized for creating sociability in a virtual space that was disconnected from our reality, placing users in a simulated and "unreal" world. Mobile technologies bring these multiuser and playful experiences to physical spaces, encouraging users to go out on the streets and bringing new meanings to familiar spaces.

As art always foresees new uses for technologies, it is wise to look at these artistic experiments and try to picture the future, imagining how contemporary society will incorporate mobile devices into its everyday activities. Mobile phones are no longer just telephones.

* IMAGES ACCOMPANYING THIS ARTICLE CAN BE SEEN AT THE LEA WEBSITE: <<http://lea.mit.edu>>

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2. Other telecommunication media, such as satellites, slow-scan TV and even those that use the telephone network, such as modems, videophones and telefacsimiles, are outside the scope of this review. Examples of telepresence art with satellites and the transmission of data via modem, faxes and slow-scan TV include *Hole in Space* (1980) from Kit Galloway and Sherrie Rabinowitz, and *The World in 24 Hours* (1982) from Robert Adrian. Other examples can be found in Stephen Wilson, *Information Arts*, Cambridge, MA: MIT Press, 2002; Frank Popper, *Art of the Electronic Age*, London: Thames and Hudson Ltd. and Harry N. Abrams Inc., New York, 1993; and Heidi Grundman, ed., *Art Telecommunications*, Vancouver, Canada, and Wien, Austria: Western Front, 1984.
3. Laszlo Moholy-Nagy and Eduardo Kac, "Aspects of the Aesthetics of Telecommunications," in John Grimes and Gray Lorig, eds., *Siggraph Visual Proceedings*, New York, NY: ACM (1992) 47-57. <<http://www.ekac.org/Telecom.Paper.Siggrap.html>> (1 September 2003).
4. See L. Moholy-Nagy and E. Kac [3].
5. See Stephen Wilson, "Chapter 6: Telecommunications," in *Information Arts: Intersections of Art, Science, and Technology*, Cambridge, MA: MIT Press (2002) p. 489.
6. All statistics provided by the International Telecommunication Union, 2003. <<http://www.itu.int/ITU-D/ict/statistics/>> (16 August 2004).
7. See Frank Popper, *Art of the Electronic Age*, New York, NY: Harry N. Abrams, Inc. (1993) p. 127.
8. See Diane Zimmerman Umble's article, "Sinful Network or Divine Service" in Lisa Gitelman and Geoffrey B. Pingree, *New Media - 1740-1915*, Cambridge, MA: MIT Press, p. 143. About the first days of the telephone in Lancaster, England, around 1910, she writes:

"Telephone company advertising in the village weekly newspapers amplified these themes by emphasizing the value of the telephone in times of emergency: accidents, fires, illness, stolen horses, mad dogs, robbers and threatening weather."

9. Other examples of artworks with cell phones can be found at Stephen Wilson's compilation under "Telecommunications: Telephone Art/Cell Phone" <<http://mercury.sfsu.edu/~infoarts/links/wilson.artlinks2.html>> (16 August 2004), and in Golan Levin's list, "An Informal Catalogue of Mobile Phone Performances, Installations and Artworks" <<http://www.flong.com/telesymphony/related/index.html>> (16 August 2004).

10. An earlier work combining telephones and music was *Telefonmusik, Wiencouver IV* (1983), discussed in Heidi Grundman, ed., *Art Telecommunication*, Vancouver, Canada: A Western Front Publication, pp. 112-125 (1984). However, whereas this project was mostly concerned with the idea of transmitting and receiving music over the telephone, *Dialtones* transformed the cell phone into the musical instrument itself. One of the major characteristics of the 1983 project was the limited frequency bands that the telephone could provide for music broadcast. In 2001, MIDI (Musical Instrument Digital Interface) ringtones enabled the creation of polyphonic musical compositions simulating an orchestra on the handset.

11. See Blast Theory <http://www.blasttheory.co.uk/work_cysmn.html> (26 January 2004).

12. *Can You See Me Now?* was nominated for an Interactive Arts BAFTA in 2002 and won the 2003 Prix Ars Electronica Golden Nica for Interactive Arts.

13. See Blast Theory <<http://www.uncleroyallararoundyou.co.uk/>> (26 January 2004).

14. This stands for Third-Generation Cellular System. "Third- Generation Cellular Systems include the possibility to offer data services without the need of establishing a connection (permanent connection) and speeds up to 2 Mbps. The main systems are WCDMA and CDMA2000 1xEV. The ITU refers to 3G as IMT-2000." <<http://www.teleco.com.br/glossario.asp?termo=3G>> (10 January 2004).

15. See Blast Theory <<http://www.ilikefrank.com>> (17 May 2004).

16. Henry Jenkins, "Games, the New Lively Art." <<http://web.mit.edu/21fms/www/faculty/henry3/GamesNewLively.html>> (16 August 2004).

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