Beyond the Visual in Urban Interactive Interfaces: Dialogue and Social Transformation

Ana Paula Baltazar dos Santos, School of Architecture, Federal University of Minas Gerais, Belo Horizonte, Brazil
José dos Santos Cabral Filho, School of Architecture, Federal University of Minas Gerais, Belo Horizonte, Brazil
Guilherme Ferreira de Arruda, School of Architecture, Federal University of Minas Gerais, Belo Horizonte, Brazil
Lorena Melgaço Silva Marques, School of Architecture, Federal University of Minas Gerais, Belo Horizonte, Brazil
Marcela Alves de Almeida, School of Architecture, Federal University of São João del-Rei, São João del-Rei, Brazil

ABSTRACT

This paper discusses the hegemony of the visual and its pervasiveness in current urban installations and technological gadgets. It draws a distinction between functional and playful interactions, showing the prevalence of the former in the design of most interfaces. It discusses interfaces that despite being based on the visual surpass functional interaction by promoting the bodily engagement of people in a playful interaction. This leads to the distinguishing between the interface—which might be reactive, proactive, or dialogical—and the interaction it promotes. It then argues for an interactive interface that moves beyond the visual towards physical action, promoting dialogical interaction. Such a discussion draws from physical computing to enable remote physical actuation to enhance people’s feelings of belonging and presence. It then presents an interface that connects two public spaces through the Internet using physical computing to enable remote actuation. It finally indicates pointers for those future interactive installations that are concerned with social transformation.

Keywords: Body Sensor Networks, Human Computer Interaction, Interaction, Interface, Remote Sensing, Social Transformation

1. INTRODUCTION

Since the beginning of the century, we have been witnessing a period of enthusiasm in relation to emerging technologies. This is clearly exemplified in a group of texts by a variety of authors (Graham, 2004) discussing the overcoming of physical space through information and communication technologies. In such a view, technologies overcome the gap between space and time—being omnipresent and granting remote access to the world in real time.

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However, we cannot ignore the fact that these technologies also present some limitations, interfering with the way we relate with the tangible features of space such as temperature, luminosity and materiality, fragmenting our aesthetic experience by overemphasizing the visual. In this way, most interactive urban installations are strongly biased toward visual rather than tangible features. The resulting experience is more contemplative than bodily engaging leading more to ephemeral rather than socially transformative experiences. Questioning such an approach, the research developed at Lagear (Graphics Laboratory for Architectural Experience) focuses on interaction design in two main directions. Firstly, since 2006, we have been developing interfaces to connect remote communities by spatialising information and communication. This means that interfaces are programmed to engage people in dialogue. That is, interaction is dialogical not the interface. Our second approach concerns the development of interfaces that can enable remote physical actuation by means of physical computing, meaning the interface is also dialogical not only the interaction. There is a clear difference between these two directions concerning dialogue. In the first case the interfaces are visually based but trigger dialogue between people. In the second case the interface, besides having a visually based output, is strongly based on action: the input of people in one location triggers actions of people in another. In this case the interface works dialogically regardless of the interaction of people (which most times is also dialogical). This paper intends to discuss the logic of the visual and its prevalence in urban interactive installations and indicate dialogical interaction and interfaces as a possible means towards social transformation.

2. THE DIALECTICS OF SPECTACLE AND EXPERIENCE

Hegel stated that vision and hearing are the two superior senses, as they do not consume their objects. What is seen and what is heard remain the same, while what is eaten, for example, has a finishing point. According to Alberto Pérez-Gómez and Louise Pelletier (1997) the superiority of vision and hearing over the other senses dates back to classical Greece, when the ‘distance’ that has marked Western science and art was established—when Greek Tragedy separated stage and orchestra from the audience.

The ‘logic of the visual’—to use Henri Lefebvre’s term—has its impact on space first as a ‘spatial practice’, as that of the theatre displacing the ‘lived space’ of the ritual, and only later, in the Renaissance, as the dominant means for the production of space, which Lefebvre calls ‘representations of space’ or ‘conceived space’ (Lefebvre, 1991). Such an impact means a clear distancing from lived space, the space in which people are bodily engaged in its simultaneous design, building and use, towards conceived space, in which design, building and use happen separately.

The hegemony of vision is not usually acknowledged by historians of architecture and urban space. According to Lefebvre, even Sigfried Giedion—the first historian to put ‘space, and not some creative genius, not the “spirit of times”, and not even technological progress, at the centre of history’ (Lefebvre, 1991, p. 126)—failed ‘to show up the growing ascendency of the abstract and the visual, as well as the internal connection between them; and to expose the genesis and meaning of a “logic of the visual”‘ (Lefebvre, 1991, p. 128). However, Pérez-Gómez and Pelletier in their history of architectural representation, point out that such hegemony of vision culminates with the shift from embodied to visual spatial practice. For the user this means a contemplative practice and for the designer it means that perspective and projections are used to foresee space as an object. Moreover, Sérgio Ferro (2006) shows that as well as representing space as an object, this design process serves to make space a commodity.

The privileging of the visual is questioned in some of Pérez-Gómez’s works. For instance, he introduces the ‘erotic paradigm’
as an alternative to the perspectival paradigm, a means to ‘retrieve a new depth, a true depth of experience’ (Pérez-Gómez, 1994, p. 21), a return to embodied participation, even in visual representations such as paintings. The problem is that this presupposes space and its meaning as representation. In addition, even if the erotic paradigm escapes the hegemony of vision, it is only an illusory escape: the result is still a finished painting or building that contributes nothing to change the tradition of the visually based production of space.

Nevertheless, we should not forget that the erotic paradigm proposed by Pérez-Gómez draws from Poliphilo (Colonna, 1999), a narrative which is useful as an example of a dialectic attitude, using images not to reproduce or simulate the realm of imagination in the realm of experience, nor even to bridge both, but to enrich experience itself; to enlarge the possibility of pleasure in the process without envisaging a closed, finished future product. Despite such an erotic path for the production of space being formulated in the Renaissance, it was not enough to fight the perspectival paradigm based on representation and the hegemony of the visual. The latter prevails in the production of space—mainly extraordinary not everyday spaces—which instead of being designed as open interfaces reinforcing use value, transforms spaces into commodities.

2.1. The ‘Logic of the Visual’ in Current Urban Interactive Installations

Most urban interactive installations follow the same logic of the visual becoming product—commodities rather than interfaces that privilege processes of production of space open to human engagement, highlighting three main points. First, most of them still rely on the spectacle and propose contemplative experiences, even if collective. Second, since most installations are ephemeral, they tend towards being forgettable experiences, fostering little social awareness, let alone any social transformation. Third, they rely on the ‘magic by ignorance’ (Baltazar & Cabral Filho, 2010), which means that the illusion resulting from the interaction is sustained only by ignorance of the system, the ‘black box’. As soon as the system is revealed, the spectacle’s magic is gone.

There is a range of interactive urban installations that use physical devices to promote human engagement. Most of them, however, fail to trigger social transformation. A few examples which are directly related to the issues addressed here might clarify what is meant by visually based, bodily and socially engaging, ephemeral and socially transformative installations.

Nowadays, most urban installations, such as urban screens and video mappings, rely too much on the spectacle and end up proposing a contemplative and ephemeral experience. Even when such installations are interactive, they are still based on the visual.

A good example is Gravity, an urban installation that depends on people interaction to happen (Figure 1). By means of the Internet, phrases are sent that are dismantled into words and projected onto an urban surface. The words are animated by simulating gravity and their trajectory is mapped on the physical surface avoiding the interruptions, such as doors and windows. If on one hand the installation depends on people’s input to happen, on the other, the system controls the fragmentation of the sent phrases and the final output ends up as a visual ephemeral spectacle, which despite being visually attractive does not trigger any sort of bodily engagement or social change.

Another example is Rafael Lozano-Hemmer’s Solar Equation (Figure 2), a public art installation with which people interact in real time by means of portable devices (iPad, iPod or iPhone).

This public installation simulates the Sun in a balloon 100 million times smaller in size. This balloon was tethered over Federation Square in Melbourne and displayed a simulation of different phenomena on the surface of the Sun and was animated by using live mathematical equations sent by five projectors. People were able to use their portable devices with a costfree application to interfere with the
Figure 1. Phrases sent by users projected in an urban surface. Gravity by 2Rogs, Bordeaux, France, 2009. (© 2009, 2Rogs. Used with permission.)

Figure 2. Person interacting with the balloon animation by Julie Renouf and overview of the balloon tethered over Federation Square by Andrew Marmin, both pictures taken from Lozano-Hemmer’s website. ‘Solar Equation’ by Rafael Lozano-Hemmer, Melbourne, Australia, 2010. (© 2010, Rafael Lozano-Hemmer. Used with permission.)

animation and choose between different modes of visualisation.

One of the main problems with this approach is that people do not easily understand what they are doing in the installation, what is their real interaction with the system, when they are in effect triggering a response and when the response is pre-programmed. Moreover, the outcome is mostly visual and interaction becomes a means to hold people’s attention rather than to engage them in any sort of social transformation. Contemplation might trigger thoughts, but as Lozano-Hemmer says “while pertinent environmental questions of global warming, drought, or UV radiation might arise from the contemplation of this piece, Solar Equation intends to likewise evoke romantic environments of ephemerality, mystery and
paradox, such as those from Blake or Goethe” (Lozano-Hemmer, 2010).

In his Relational Architecture series, Lozano-Hemmer proposed a range of more bodily engaging installations. However, all of them, even when motivated by social questions, are still strongly based on the visual. The outcome of bodily interaction is usually an astonishing ephemeral projection of images (pre-recorded or captured in real time), which even if, due to its visual effect, is memorable, has no social impact.

A good example of interface attempting to trigger social transformation is the D-Tower (Figure 3), a 12-metre high sculpture in the city of Doetinchem which is linked to a website and an online questionnaire. It was conceived as a visual display, changing colours according to the responses to the online questionnaire. As it is a permanent installation, people’s inputs are not the only part of the ephemeral moment that composes the visual installation. In contrast to Gravity and Solar Equation, D-Tower is an example in which the visual outcome was supposed to lead to social transformation because it is not solely based on the logic of the spectacle.

It was designed with the intention of giving meaningful output for all citizens, working as a long-term thermometer of the city’s mood. Once people discover what the displayed colour indicates, the whole city is able to get involved in cultivating the mood or in changing it. The tower, however, is not bodily engaging and, despite its intention, it does not stimulate social engagement, as the questionnaire is too personal and the overall project is primarily artistic and not socio-spatial.

2.2. The ‘Logic of the Visual’ in Current Technological Gadgets

The same ‘logic of the visual’ also drives the production of gadgets, such as smartphones, tablets, laptops, and their applications. If urban interactive installations are becoming more and more related to consumerism, the production of gadgets is driven by it. There is a clear prevalence of exchange-value over use-value, summarised by what John Thackara (2000) calls ‘the innovation dilemma’: most devices are produced because technology is available, not to meet social demands. Thus, the dominance of usable over useful devices reinforces a passive attitude of users to their gadgets, which gives continuity to the already established spectacle. Paradoxically, current technologies have great potential to promote social engagement beyond merely reproducing visual practices. However, such potential is overshadowed by the spectacle, the ephemeral and the illusion proposed.

Figure 3. The tower putting in evidence the city’s moods in two different days. ‘D-Tower’, by Q. Serafinin and Lars Spuybroek, Doetinchem, The Netherlands, 2003. (© 2003, Lars Spuybroek. Used with permission.)
by ‘black boxes’. New pervasive gadgets like Nintendo Wii and Microsoft Xbox 360/Kinect have enabled bodily engagement by means of technologies affordable and ready for use. Still, most interfaces available for those devices do not fully explore their interactive potential and rely to a great extent on visual output. While playing these games, the body interacts with an image that transforms itself recursively keeping the players mesmerized by the spectacle. A carefully designed interface might change this scenario. Therefore, a broader discussion on interaction is needed.

3. FUNCTIONAL AND PLAYFUL INTERACTIONS

As urban interactive installations draw from digital technology and games, it is important not only to understand state of the art technology, but also to discuss interaction and its possible development. Therefore, we might envisage two stages of interaction. First, when interacting with an interface to access a predetermined content; second when interacting with content through an interface. When interacting with a music box, for example, by winding the crank, one is interacting with the interface, not with content—the music—which is a predetermined output. On the other hand, when playing the piano, the musician creates music, an indeterminate content—accessing predetermined notes through the keys. While in the first case those interacting tend to become functionaries of the ‘apparatus’, acting as expected, in the second, they might use the apparatus to engage playfully with content.

According to Vilém Flusser (2000), ‘play’ is a means to overcome a functional relationship with the apparatus. A playful interaction means using the apparatus beyond its prescriptions, engaging with content and not only with the interface. Certainly, a music box might be used in a playful way, but its functionality is much more limiting than those of the piano. On the other hand, the pianist might become a functionary when struggling with the interface—keys and notes—or merely reproducing a song. As with the piano, current technology—such as that of video games—has potential for playful interaction, but, paradoxically, it has been mostly used in a functional way, as the output of interaction brings no novelty, let alone any social transformation. It might be said that the ‘magic by ignorance’ is no longer an issue for video game users, as the pervasiveness of technology leads them to lose interest in unveiling the ‘black box’. In fact, there is no magic at all: users become functionaries of the games they play.

Interaction in urban installations is usually designed for people to interact with interface, not with content. They are not playful in Flusser’s sense, but only to the extent that the ‘magic by ignorance’ prevails. Moreover, as discussed above, even a bodily engagement is predominantly mediated by images. The visual facilitates the user’s immediate grasp of ephemeral installations, leading to a lack of a more enduring engagement with others and with the space. In order to overcome the stasis prompted by image-based interaction with the interfaces, it is necessary to enhance a feeling of belonging. This might be achieved when people are encouraged to negotiate and physically act in a playful interaction with content by means of an interface that enables communication.

With all these in mind, a few examples of interfaces for playful interaction have been developed by Lagear since 2006. The main aim is to enhance the feeling of belonging, even if temporarily, spatialising information and communication by means of a Digital TENT (Technological Environment for Negotiated Topology). Flusser (1999b) discusses the difference between the cave and the tent, saying that the cave, from which the house is derived, is a dark secret, a place where things are possessed, while the tent ‘is a place where people assemble and disperse’, where things are experienced. In this same direction proposed by Flusser the Digital TENT intends to promote a flexible,
mobile, low-tech and low-cost immersive environment as opposed to the fixed and expensive Cave Automatic Virtual Environment (CAVE).

The Ocupar Espaços (Occupying Spaces) project is a good example of this. This project was a partnership between Lagear and the Oficina de Imagens NGO in 2006. It connected two favelas in Belo Horizonte—Aglomerado da Serra and Barragem Santa Luíca. It aimed to connect people, usually socially excluded, in these two remote favelas by means of the internet, web cameras and collaborative interactive projections. Some of the interfaces were programmed to be interacted with by means of gesture, being some of them puzzle based (Figure 4a), requiring two users to collaborate in order to move the pieces of the puzzle to form an image, and others were programmed to enable a more creative and freer interaction of people with content, such as the digital graffiti. Besides being playful and not merely functional, these interfaces were not the most successful. People were much more interested in playing with pre-recorded images of their context projected in 1:1 scale in different surfaces such as the floor and the ravine (Figures 4b and 4c). Such un-programmed interfaces triggered a much more engaging experience for the participants over the over-programmed interfaces. This indicated that the spatialisation of information and communication, and moreover the spatialisation of the interface, is much more important to create an event for playful interaction than the programming of the interface. That is, the events created are more important in promoting feelings of belonging and presence than the designed interfaces.

As Michel Foucault says: it can ‘never be inherent in the structure of things to guarantee the exercise of freedom. The guarantee of freedom is freedom’ (Foucault, 2002, p. 355). So, it is important to distinguish between interface and interaction to design interfaces open enough to enhance the possibility of promoting the feelings of belonging and presence that occur when people interact with interfaces.

4. DISTINGUISHING INTERFACE AND INTERACTION: REACTIVE, PROACTIVE AND DIALOGICAL

Both interface and interaction might be reactive, proactive or dialogical. By reactive we mean that which programmatically reacts to input given by participants (Dubberly et al., 2009). Proactive means not only reaction but a contribution to present-time changes that take people by surprise (Oosterhuis, 2002). According to Vilém Flusser (1999a), the dialogue or intersubjectivity is the main characteristic of a responsible design. Responsibility in Flusser’s sense means the openness of the design to others.

Two main interfaces are most commonly used in current urban interactive installations: reactive and proactive. Gravity, mentioned

Figure 4. a) Projected puzzle being interacted with by gestures of two people and the image of people from Barragem Santa Lucia projected on a wall at Aglomerado da Serra; b) Kids interacting with projected images of their peers playing in a staircase and a slide at Aglomerado da Serra; and c) Kids playing with the projection of a lake on the floor at Barragem Santa Lucia, Ocupar Espaços, Oficina de Imagens and Lagear, Belo Horizonte, Brazil, 2006 (no copyright)
above, is a reactive interface because it responds to user interaction with a preprogrammed output, that is, the texts sent via the Internet are displayed on a surface. On the other hand, Solar Equation, besides being a reactive interface, is also proactive. It is reactive because it enables people to interact directly with the ‘sun’ using portable devices. But it is the animated surface created by live mathematical equations that makes it a proactive interface, that is, the interface goes beyond direct responses to preprogrammed answers, ‘surprising’ the audience with new elements. However, none of these interfaces are dialogical as they have no continuity or openness to others.

The interaction promoted by these two interfaces is coincidently equivalent. In both Gravity and Solar Equation interface and interaction are reactive and proactive respectively. But this is not always the case. For instance, a reactive or proactive interface might trigger a dialogical interaction. This was the case of the pre-recorded projection in Ocupar Espaços, mentioned previously, and also the case of Ituïta.

Ituïta (a name derived from the Indian Guarani language meaning ‘stone cascade’) is an interface developed by Opera Studio in partnership with Lagear in 2012/2013. It is composed of an interactive urban LED display connected to a website and placed in the cascade at the central square of the Baroque city of Congonhas, Minas Gerais, Brazil (Figure 5). Ituïta was designed to engage people with the city’s issues in two different ways. Firstly by means of the website in which people answer questions on different monthly themes related to the city (refuse, health, transport etc); and secondly by playfully interacting in the Square with graphics that summarize the results of the online questionnaire—such graphics are animated in response to people’s movement in the square captured by Kinect sensor.

As a reactive interface, Ituïta enables reactive interaction when the user responds to the questionnaire and graphics are automatically shown in the LED displays in the Square. As a proactive interface, Ituïta enables proactive interaction when people interact with the graphics in the Square and suddenly different graphics appears on the LED displays (a consequence of the results output of online responses). Nevertheless, even if the interface is reactive and proactive triggering reactive and proactive interactions, there is also a dialogical interac-

Figure 5. ‘Ituïta’, the cascade with the bodily interactive graphic displays depicting the satisfaction of people with the monthly issue in three different scales (local, neighbourhood and city). Opera Studio and Lagear, Congonhas, Minas Gerais, Brazil (no copyright).
tion promoted by the openness of the project to human engagement.

As with the D-Tower, Ituita is also a kind of thermometer for the city. However, it moves beyond the D-Tower as it proposes a circularity of actions implied by the present-time feedback between the website and the LED displays. The answers given to the online questionnaire generate the graphics shown in the Square. At the same time, the interpreted graphics trigger discussions in the online forum, which in the feedback system influence the answers shown in the Square. Such a circularity is not limited to the Internet but might reverberate in the city if citizens really engage in the direct democracy proposed by the interface which, unlike the D-Tower, is a socio-spatial project with no artistic intention.

In the case of Ituita, the interaction is dialogical not the interface. The interface in itself does not enable the enhancement of the feeling of belonging and presence, it only stimulates people to engage in discussions about the city. The interface works only as a catalyst of socio-spatial engagement and transformation. However, it is difficult to directly connect such a feeling of belonging and presence to any interface or space. It is much more a question of the way people interact with the interface and with each other by means of the interface.

5. ENHANCING PRESENCE: BEYOND REPRESENTATION TOWARDS REMOTE ACTUATION

The first works of installation art have attempted to establish a bond with the audience by means of participation, but the user was just a pawn that complemented a script. Afterwards, artists started proposing a critical attitude for the audience, making the works interactive, as those of Lygia Clark and Hélio Oiticica at the end of the 1960s (Osthoff, 1997). However, when information technology enters the realm of installation art, it comes more of the former than the latter. The development of interface design did accelerate as fast as the advances in technology and the focus of the works are mostly on what technology can do—how to use technology—rather than on what we would like it to do—why use technologies (Thackara, 2000). Thus, there is a need for strategies to design interfaces that explore technological developments to add value to people’s lives and consequently, enhance people’s feelings of belonging and presence.

One common approach to achieving these in digital environments is based on realistic representations of physical features—so-called virtual reality. Such investigations ask how best to represent the physical world and its features for a better reproduction of physical presence, as shown by Martin Usoh (Usoh et al., 1999). However, the interfaces and environments designed are no more than poor imitations of reality and presence is not explored beyond its limitations in the physical world. In other words, the possibility of developing a means to enhance the feeling of presence taking advantage of information technology is not discussed. Nevertheless, this development is crucial in our approach to interfaces, mainly when our goal is to promote negotiation by means of remote communication. A possible way to start considering this is using principles from physical computing to promote remote actuation.

Lagar has experimented with an interface to promote remote actuation in 2011. It was an event called Long Distance Voodoo which connected people located in different public spaces and the Internet. Its main goal was to develop and test tools, using off-the-shelf hardware and software, to promote remote communication beyond the visual, such as a wearable that allowed people to be remotely touched.

Long Distance Voodoo connected people from two different countries—Brazil and Germany—, putting in evidence cultural contrasts, as people in one country stimulated dancers in the other by means of signals sent through the Internet. It should be pointed out that the dancers are part of a group that usually start their improvised movement when another dancer
touches them. Therefore, the signal sent through the Internet directly stimulates one dancer but indirectly affects the whole group. In all cases this hybrid experiment—connecting groups in two physical spaces and the Internet—promoted negotiation by means of remote actuation, enhancing people’s feeling of belonging and presence.

This ephemeral event happened physically in two remote public spaces: in Germany, in the Oderberger Straße in Berlin, in front of the KaufDich Glücklich Café; and in Brazil, at the Raul Soares Square in Belo Horizonte, using the Internet to create a dialogue between both spaces and to broadcast the event (Figure 6). Berlin was equipped with a projector displaying images from Belo Horizonte, a physical doll equipped with sensors and a computer connected to the Internet sending the output of the doll’s sensors and images from Oderberger Straße to Raul Soares Square. The latter hosted the dancers, one of whom was dressed in a wearable (equipped with actuators) and two computers connected to the Internet—one sending images from the Square to Oderberger Straße and the other receiving signals from the sensors in Berlin and activating the wearable.

The doll had five pressure sensors—one on the head and one on each arm and leg—which captured people’s touch. The doll was wired to a microcontroller Arduino that received the sensor’s output starting a Processing program in the computer at the Café and sending the sensor’s data through the Internet to a computer in Belo Horizonte. The signal was then received in a Processing program and was transmitted to a wireless radial module Xbee mounted in another Arduino placed in the wearable (Igoe, 2007). Thus, the output of Berlin became the input of the wearable triggering small vibrators producing physical stimuli on those who wore it. In this way, the performer in the public square was remotely touched by the person playing with the doll in the café. There was a LED near the vibrator that turned on simultaneously to the vibrator activating, i.e., if the right arm of the doll was touched, the vibrator and the LED on the right arm of the performer became active. So there was a correspondence between the action upon the doll, in Berlin, and the stimulus produced in the dancer, in Belo Horizonte (Figure 7).

As a technical experiment, Long Distance Voodoo successfully connected two remote spaces. Its tactile interface, between doll and wearable, between both spaces, pointed to the possibilities of remote negotiation by exploring the feeling of presence beyond representation as people established a bodily connection by means of physical remote actuation. This connection triggered spatialised communication as people playing with the doll gradually realized they could remotely touch the dancer initiating a more lasting and meaningful interaction—based on physical actuation instead of representation. The dancer participated in this conversation by reacting to the remote touch, influencing the rest of the group by reverberating the stimulus received. Nevertheless, the most important contribution of Long Distance Voodoo is the

**Figure 6. Sensor to actuator transmission and image exchange between spaces A and B (no copyright)**
further discussion it fosters regarding both the achievements and their limits related to the theoretical approach that inspired it, especially those relating to the engagement of people in both spaces.

In Berlin, it was identified that people were mostly interested in the ‘magic’ of the remote touch, not realizing its potential for negotiation and dialogue (Figure 8). The interest in the interface—the ‘magic by ignorance’—was reinforced by three main features of the installation. First, the need to look at the projection to understand what happened in the other space and therefore give meaning to one’s own action, reinforcing the logic of the visual; second, the static position of the doll, hindering the bodily engagement; and third, a technical constraint leading to a delay between the action of poking the doll and the response from the dancer, making remote negotiation difficult.

In Berlin, these three aspects contributed to an interaction which was more functional than playful. Even though Flusser states a possibility to ‘play’ by overcoming the apparatus’ prescriptions—that is, engaging with content and not only with the interface—the doll eventually worked more like the music box than the piano, limiting interaction with

Figure 7. Electronic equipments and their role in the Berlin (Space A) and Belo Horizonte (Space B). 1- stream event; 2- cameras X projectors; 3- doll X human (no copyright).

Figure 8. People interacting in Berlin with the doll having as visual feedback the image of the dancers in Brazil (no copyright)
the content and reinforcing the difficulties to avoid the hegemony of the visual.

In Belo Horizonte, however, the dancers were much more involved in the experience, focusing on the interface’s possibilities to promote conversations by engaging with people in Berlin—leading to a ‘magic by experience’. Even though the interface—the wearable—was limited, for it provided an individual and reactive experience, it allowed the dancers to interact more freely among themselves and with the space. They were prone to bodily engage in the experiment since they were already comfortable with performing in public spaces (Figure 9). They also knew beforehand the mechanisms of the wearable and used it to tease people in Berlin to further interact with them. Nevertheless, the experiment did not integrate other people in Raul Soares Square since passers-by still perceived it as a performance to watch and not to participate in, reducing the experience for those in Belo Horizonte again to the ‘logic of the visual’. Therefore, despite the possibility of actual playful interactions between those remotely connected noticed in the interaction of the dancers with the wearable, the experience ended up highlighting a functional relationship with technology, hindering any possibility of social awareness, let alone transformation.

Despite the problems highlighted above, Long Distance Voodoo has fulfilled its main objective: to develop and test an interface that allows remote touch by using low-tech and low-cost devices. As a result, it configures an important step in the research towards the development of tools for social transformation. This is most likely to happen by means of remote actuation and bodily engagement.

Following Long Distance Voodoo, the research group is focusing on developing an interface to spatialise remote actions, beyond devices—such as the doll or the wearable—that restrict interaction to a reactive individual response. Both spaces should offer the possibility of bodily engagement in a dialogical interaction. It is our belief that exploring negotiation beyond the ‘logic of the visual’ by means of remote actuation is a means of enhancing the feeling of belonging and presence. In other words, our challenge now is to try and develop an interface that reproduces the dialogical and enduring interaction of Ituita using the physical actuation of Long Distance Voodoo. This means working towards social transformation having an interface beyond the logic of the visual towards promoting the feelings of belonging and presence.

Figure 9. The dancers in Brazil wearing the voodoo device being stimulated by people in Berlin (no copyright)
6. CONCLUSION: BEYOND THE VISUAL TOWARDS REMOTE PHYSICAL ACTION

An interactive urban interface capable of fostering playful interactions should be designed to create limits or rules to enhance experience rather than prescribing actions. Its ultimate goal is to trigger people’s engagement with their production of space. For that there is a requirement to overcome the three points usually present in urban interactive installations. Instead of a contemplative and visual experience, embodiment and dialogue; instead of an ephemeral installation and a forgettable experience, permanence and memorability; instead of the ‘magic by ignorance’, ‘magic of experience’. These features are desirable to awaken people’s awareness of the collective hybrid space they might create—the third space—as opposed to reproducing individual experiences in collective installations. Such a discussion leads to the development of playful interactive interfaces for remote communication, including remote physical action. Our research group is currently concerned with discussing the relevance of remote physical action and how it might overcome the hegemony of vision focusing on negotiation as a means to create the third space and trigger social transformation. For that we intend to promote dialogical interaction with the simplest of interfaces, be they reactive, proactive or dialogical, towards enhancing the feelings of belonging and presence. It might be said that we can create interfaces open enough to help promoting these feelings, even if they cannot be inherent in the interfaces.

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Ana Paula Baltazar is a Brazilian qualified Architect, MArch, and PhD in Architecture and Virtual Environments at the Bartlett School of Architecture, UCL (UK). She is a Senior Lecturer teaching at both graduate and undergraduate programs at the School of Architecture at Universidade Federal de Minas Gerais, Brazil (UFMG), where she also co-leads the research groups LAGEAR (Laboratório Gráfico para Experimentação Arquitetônica / Computer Laboratory for Architectural Experience) and MOM (Morar de Outras Maneiras / Living in Other Ways). Her current research focuses on the role of architects as interface designers, architecture as interactive interface, immersive environments for collaborative production of space-events, the virtual in architecture, the autonomy of users in the production of space and the simultaneity of design, building and use. She has several papers and book chapters published and was awarded three research prizes and two design prizes.

José S. Cabral Filho is an architect and associate professor at the School of Architecture at the Federal University of Minas Gerais (Brazil). He received a Master and a PhD degree from Sheffield University (UK) and has been a visiting scholar at the School of Architecture at McGill University (Montreal / Canada), NTNU (Trondheim / Norway) and the Royal College of Art (London / UK). Over the past 17 years he has been in charge of LAGEAR (Computer Laboratory for the Architectural Experience at UFMG) where his research focuses on the liberating potential of ICT, seeking a far-reaching adoption of play into digital design, taking game as framework for the co-existence of determinism and non-determinism. His main interests include the philosophy of Vilem Flusser, second-order Cybernetics, as well as architectural performances and electronic music.

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Guilherme Ferreira de Arruda is an Architect and urbanist from the Universidade Estadual de Londrina (2011), is currently master’s degree from the Universidade Federal de Minas Gerais and researcher at LAGEAR / UFMG. Investigates the relationship between information and political space, with emphasis on information and communication technologies and the production of urban space.

Lorena Melgaço Silva Marques is a PhD candidate at Universidade Federal de Minas Gerais and CAPES REUNI scholarship holder (2012). Holds a bachelor (2008) and a Master Degree (2011) in Architecture and Urbanism from the Universidade Federal de Minas Gerais Brazil and a MSc in International Cooperation and Urban Development from the consortia Mundus Urbano (Technische Universität Darmstadt, Germany and Université Piére Mendes, France, 2011). Interested in the social implications of current information and communication technologies in the urban space, especially in Brazilian developing context.

Marcela Alves de Almeida is Professor at the Universidade Federal de São João del Rei. She received her PhD in Architecture at Universidade Federal de Minas Gerais in 2014. Main research issues: contemporary architecture, architecture and digital technology, design thinking, digital interfaces and contemporary culture.