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Chapter 6

Dialogue With Interfaces: Beyond the Visual Towards Socio–Spatial Engagement

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ABSTRACT

*This chapter grapples with the hegemony of the visual and its pervasiveness in current urban installations. It discusses how technology and the visual are fetishized instead of used in their dialogical potential to engage people in socio-spatial transformation. This chapter presents the trajectory of the Graphics Laboratory for Architectural Experience at Universidade Federal de Minas Gerais, Brazil (LAGEAR) in its theoretical and practical development. This chapter then discusses LAGEAR's main drives, which are the playful interaction, **the distinction between interface, and interaction and dialogue**, in order to create interactive interfaces that actually engage people in socio-spatial transformation. It presents examples of the authors' works, drawing from visually based to bodily engaging and socio-political installations. Discussion concerns the problematization that leads to the need of engagement rather than the bodily engagement. Emphasis was put on working with the socio-spatial context and proposing interfaces that take into account the process in its openness and indeterminacy instead of prescribing a product (even if an interface-product).*

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INTRODUCTION

This chapter discusses urban interactive installations as important means to engage people in socio-spatial transformation of cities. It proposes a critical view of their usual drive, which is highly dependent on digital technology and overemphasises the visual. Since the beginning of the century we have been witnessing a period of enthusiasm related to the emerging digital technologies, which is clearly exemplified in a group of texts by different authors (Graham, 2004) discussing the overcome of physical space by information and communication technology. In such a view, digital technologies overcome the gap between space and time, being omnipresent and granting a remote access to the world in real time. However, we cannot ignore that these technologies make also a fragment our aesthetic experience by overemphasising the visual. In this way, most interactive urban installations are strongly based on digital technology and are also spectacular (Baltazar, 2009; Baltazar, Cabral Filho, Melgaço, Almeida, & Arruda, 2012; Baltazar, Arruda, Cabral Filho, Melgaço, & Almeida, 2014).

This chapter revisits two papers by the authors (Baltazar et al, 2012; Baltazar et al, 2014) and updates the discussions taking place at the Graphics Laboratory for Architectural Experience at Universidade Federal de Minas Gerais, Brazil (LAGEAR). Up to 2014, when we published “Beyond the visual in urban interactive installations: dialogue and social transformation” (Baltazar et al, 2014), the critique of the visual was systematised in two main directions in the development of interfaces, developed first from 2006 and then from 2010. First, since 2006 we have been developing interfaces to connect remote communities by spatialising information and communication. This meant that interfaces were programmed to engage people in dialogue; that is, interaction is dialogical not the interface. Even if this seemed to advance the current research on urban interactive installations, people’s engagement was not enduring. Assessing the interfaces produced, the prevalence of the visual was seen as one of the main problems. The spectacle produced when people interacted with each other by means of the interfaces would catch people’s attention for a short period, but was not enough to promote people’s bodily engagement with the city by means of the interfaces. So, in 2010 our approach started to concern the development of interfaces to enable remote physical actuation by means of physical computing, moving beyond visual towards bodily interaction. This meant that the interface could also be dialogical, not only the interaction. Dialogue was present in both early developments of urban interactive installations by LAGEAR. 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 place triggers actions of people in another place. In this case the interface works dialogically regardless of the interaction of people (which most times is also dialogical).

Nevertheless, the persistent ephemerality of the interfaces was overwhelming, and there was no actual socio-spatial transformation. Even if there was a more sophisticated interaction, as people were not only interacting with each other but also with the interface, the dialogue prompted had no impact on people’s engagement with the city, even in short term. As the main assessment of this stage, the LAGEAR research group questioned the complexification of the interfaces assuming a prevalence of digital technology, and started thinking of other means to engage people in socio-spatial transformation. The main challenge, then, is to propose interfaces that avoid both visual and technological fetishisms, working towards a broader concept of dialogue, drawing from Hannah Arendt’s provocation for the resumption of the public sphere, taking into account plural interaction amongst people from different classes and social backgrounds (Arendt, 1998).

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Such a discussion is the main purpose of this chapter, while it is not present in the former papers (Baltazar et al, 2012; Baltazar et al, 2014), which is organized as follows. First, the discussion of the prevalence of the visual in architecture and the possibility of surpassing such a ‘logic of the visual’ if working with its dialectical relation with experience is presented (Baltazar et al, 2012; Baltazar et al, 2014). It then discusses the ‘logic of the visual’ in urban interactive installations and the emphasis on technological development prior to contextual problematisations of the urban spaces. From that it introduces playful interaction, **the distinction between interface and interaction in dialogue**, which are the main drives for LAGEAR’s production. Then it presents a selection of LAGEAR’s urban interactive works bringing the cumulative experience and criticism that led to interfaces to trigger socio-spatial transformation.

The works presented are the Ocupar Espaços (Occupy Spaces – a visually based, triggering dialogue between people), Long Distance Voodoo (action-based interface proposing a dialogical interaction), Ituita (which works towards the dialectics of a spectacle and an experience but fails to escape the fetishism of digital technology; it does not engage citizens with the everyday input necessary to enable the socio-spatial transformation foreseen by the technical team), and CANI (which puts the problematisation of the socio-spatial context before any digital technological development, and manages to engage people in a dialogical and plural interface directed to engage them in a discussion towards the resumption of the public sphere).

BACKGROUND

Before discussing LAGEAR’s critical path towards the socio-spatial transformation, it is important to point out the two main discussions regarding the ‘logic of the visual’ (and the possibility of a dialectics of spectacle and experience) and the fetish of digital technology.

The ‘Logic of the Visual’ in Architecture

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, finishes. According to Alberto Pérez-Gómez and Louise Pelletier (1997) the privilege of vision and hearing over other senses dates back to classical Greece, when the ‘distance’ that has marked Western science and art was established, and when Greek Tragedy separated a stage and an orchestra from spectators in the amphitheater.

The ‘logic of the visual’ – to use Henri Lefebvre’s term (1991) 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 a ‘conceived space.’ Such an impact means a clear distancing from the lived space, the space in which people are bodily engaged in its simultaneous design, building, and use, towards the conceived space in which design, building, and its 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 who 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 ascendancy 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.’”

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(Lefebvre, 1991, p. 128). However, Pérez-Gómez and Pelletier (1997) 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 into 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 it presupposes space and its meaning as representation. And 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 might not forget that the erotic paradigm proposed by Pérez-Gómez draws from Poliphilo (Colonna, 1999), which narrative 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; to acknowledge the indeterminacy of the process to trigger different actions, instead of reproducing previously set behaviours (Arendt, 1998). 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.

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 people's engagement. They highlight three main points. First, most of these installations still rely on the spectacle and propose contemplative experiences, even if collective. Second, since most of them are ephemeral, they tend towards forgettable experiences, fostering little social awareness, let alone socio-spatial 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.

We have elaborated on these three points (Baltazar et al, 2014) when analysing the urban installations: Gravity (by 2Roqs, 2009), Solar Equation (by Rafael Lozano-Hemmer, 2010), and D-Tower (by Q. Serafijin and Lars Spuybroek, 2003), showing that on the one hand they were visually based, but on the other their intentions were subjective and artistic, with no purpose of engaging people in any sort of social transformation (Baltazar et al, 2014).

However, in the last decade the Arab Spring has marked a wave of protests and uprisings worldwide. Words such as democracy, participation, and empowerment, fruits of such a socio-political mood, became central in a variety of fields, including architecture and art. Different from the early assumed visually based and spectacular urban interactive installations, we have started to witness urban installations that base their discourses on socio-political transformation, but not actually proposing a change in their visual bases (Baltazar, 2017). An example is the urban installation VoiceOver (Umbrellium group,

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Haque, 2016-2018), which is presented as a participatory platform that aims to “re-establish community engagement” (Haque, 2017, p. 87) facing our constant loss of collective power of decision-making to automated processes. What the interface actually proposes is a disguised spectacle with a discourse of experience, not even getting close to promote the dialectics of spectacle and experience.

This installation, already tested in the British village of Horden and also in London, creates a temporary communication network between neighbours by means of a light antenna, which is installed in the houses’ front window, and a radio box. People are invited to record a short broadcast about their life using the radio box, so the narratives are transmitted from house to house, connecting the residents while the sounds are translated simultaneously into beams of light, making the antennas light up creating a visual urban spectacle.

As people can speak what they want, at a first glance VoiceOver seems to offer an indeterminate experience that induces people’s engagement and participation. But there is a clear problem concerning the logic of the visual. The potential to reverberate ideas in the public space is reduced to a display of colored lights without any meaning at all, that is, people on the street cannot hear the speeches, just contemplate the spectacular show of lights, which cannot be seen as anything other than random from their point of view.

This leads us to our next point by joining the prevalence of the visual and the fetish of digital technology, which in this installation is expressed by means of a blind belief that digital technology and the spectacle are enough to trigger transformation and engage people into dialogue. Although the installation’s goal to connect people in communication networks is an important step towards social transformation, there is a greater emphasis on the visual and the spectacle (on the interface) rather than on the content of communication itself. In this sense, to give voice by transforming it into unintelligible lights is not enough. A truly responsible interface would focus on the potential to engage people in dialogical interactions, otherwise it will only reproduce a one-hand communication, without opening for new information to come out.

The Fetish of Digital Technology

Technology exerts a fascination on people’s mind that very often it reaches the level of a fetish, in the sense that people demonstrate an almost irrational interest in any technological objects. To understand such a fetish we have to understand two different things: the magical aspects surreptitiously concealed in technological artefacts; and the fragmentation of our experience that is at the core of our use of technology.

The magical perception of digital and computational technology comes from the fact that from a layperson’s perspective their functionality defies the causality of the natural world. These technologies apparently present a split between the action that triggers an event and the effect resulting from that event. To a certain extent, this is the description of the black box concept used in Cybernetics. Seen as a black box, technology becomes magical and seductive, leading to a widespread fetishism.

The fragmentation of our experience – focusing on one body sense at the expense of the others – not only abolishes the synergy and synaesthesia of our senses but imposes a bodily disengagement that became a characteristic of our living with technologies. This bodily disengagement, coupled with the illusory disembodiment of information, allows for a recursive increase of technology development. In fact, one of the hallmarks of digital and computational technologies is that their development allows and promotes further development of the technologies themselves. This recursivity ends up accelerating the

technological progress in a linear fashion, where a new model substitute the old one, be it an artefact or a piece of software.

The fetish of technology leads to the acceleration of its development as its sole purpose. As if we were enchanted by the possibility of competing with gods or supernatural forces. Thus, we frequently have huge advances in technologies that do not respond to necessity, or even that is not desired at all. That turns into progress for the sake of progress. Thus, we often see high technologies used with the mere purpose of amusement (distraction), in the sense of empty spectacle, without reaching the fulfilling recreation of proper play, without moving towards the dialectics of spectacle and experience.

LAGEAR'S MAIN DEVELOPMENTS QUESTIONING THE FETISH OF THE VISUAL AND OF DIGITAL TECHNOLOGY

The main drives of LAGEAR's investigations are the playful interaction, the distinction between the interface and the interaction and dialogue.

As urban interactive installations draw from digital technology, it is important not only to understand the state of art of technology, but also 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 (Baltazar and Cabral Filho, 2010). Certainly, a music box might be used in a playful way, but its prescriptions are much more limiting than those of the piano. On the other hand, who plays the piano might become a functionary when struggling with the interface – keys and notes – or merely reproducing a song. As the piano, current technology, such as that of video games has a potential for playful interaction, but paradoxically, it has been mostly used in a functional way, as the output of interaction brings no novelty, let aside social transformation. It might be said that the 'magic by ignorance' is no longer an issue for video game users, as the pervasiveness of technologies 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 consume.

Urban installations are often designed for people to interact with the 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. If the visual facilitates people's immediate grasp of ephemeral installations, leading to a lack of a more enduring engagement of people with each other and with the space. In order to overcome the stasis prompted by image-based interaction with the interfaces, is needed to increase people's 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.

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For that, instead of discussing the production of an interface-product – which might be reactive, proactive or dialogical – we propose to firstly discuss the interaction one is willing to promote by means of the interface. As already discussed (Baltazar et al, 2014) both interface and interaction might be reactive, proactive, or dialogical. By reactive we mean that which programmatically reacts to input given by participants (Dubberly, Haque, & Pangaro, 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.

A good example of LAGEAR’s experiment that made us learn to separate between interface and interaction, and value more a dialogical interaction rather than a dialogical interface, was Ocupar Espaços (Occupy Spaces). This project was a partnership of LAGEAR with the NGO Oficina de Imagens in 2006, connecting two favelas – shanty towns in Belo Horizonte – Aglomerado da Serra and Barragem Santa Lúcia. It aimed to connect people, usually socially excluded, in these two remote favelas by means of the Internet, web cameras and collaborative interactive projections. A few interfaces were programmed to be interacted with by means of gesture, being some of them puzzle based (Figure 1, right image), 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 free 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 (Figure 1, central and left images). Such unprogrammed interfaces triggered a much more engaging experience for the participants than the overprogrammed 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 to promote the feelings of belonging and presence than the interfaces designed. In other words, the interaction in this case was dialogical, not the interface.

The emphasis on promoting dialogue between people became the research group’s most important drive meaning that we must avoid reproducing the fetish of the visual and of technology in the interfaces we produced. With time we have developed different experiments that have indicated that the priority is to understand the context and help promoting socio-spatial transformation, instead of starting from the discourse of social transformation and fall into the trap of representation, by prioritising the visual and the technological development. We have learned that perhaps an analogical game might be more effective

Figure 1. LAGEAR and Oficina de Imagens. Ocupar Espaços (Occupy Spaces) (Copyright 2006, LAGEAR. Used with permission)



in engaging people than a very sophisticated interface based on the spectacle and digital technology. The most important is that the interface enables new information to arise, opening up people's imaginary and engaging them in dialogue with each other and with the interface. Now that we have presented *Ocupar Espaços*, a visually based interface triggering dialogue between people, we will present other projects developed in LAGEAR drawing from the main drives discussed above: Long Distance Voodoo, Ituita and CANI.

The next sub-items present a few examples of LAGEAR's developments drawing from the main drives discussed above. We have already presented *Ocupar Espaços*, a visually based interface triggering dialogue between people and will now discuss Long Distance Voodoo – an action-based interface, proposing a dialogical interface – Ituita (Stralen, Baltazar, Melgaço, & Arruda, 2012) – an interface working towards the dialectics of spectacle and experience but failing to escape the fetishism of digital technology, not engaging citizens with the everyday input necessary to enable the socio-spatial transformation foreseen by the technical team, and CANI – putting the problematisation of the socio-spatial context before any digital technological development and managing to engage people in a dialogical and plural interface directed to engage them in a discussion towards the resumption of the public sphere.

Long Distance Voodoo

LAGEAR has experimented with an interface to promote remote actuation in 2011. It was an event called *Long Distance Voodoo*, connecting 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 different countries – Brazil and Germany, putting in evidence cultural contrasts, as people in one country stimulated dancers on the other by means of signals sent through the Internet. It must be said 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 *Kauf Dich 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 2). 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 dressing 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: on the head, each arm, and each leg, which captured people's touch. The doll was wirely connected to a microcontroller Arduino that received the sensor's output starting a Processing program in the computer at the Café 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

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Figure 2. Sensor to actuator transmission and image exchange between spaces A and B (Copyright 2011, LAGEAR. Used with permission)



physical stimuli on who wore it. In this way, the performer in the public square was remotely touched by the person playing with the doll in the cafe. There was a LED near the vibrator that turned on at the same time the vibrator became active, i.e., if the right arm of the doll was touched, the vibrator and the LED display 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 3).

As a technical experiment, *Long Distance Voodoo* successfully connected two remote spaces. Its tactile interface, between doll and wearable, between both spaces, pointed 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 realised they could remotely touch the dancer initiating a more lasting and meaningful interaction which was 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 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.

Figure 3. Electronic equipments and their role in Berlin (space A) and Belo Horizonte (space B) (Copyright 2011, LAGEAR. Used with permission)

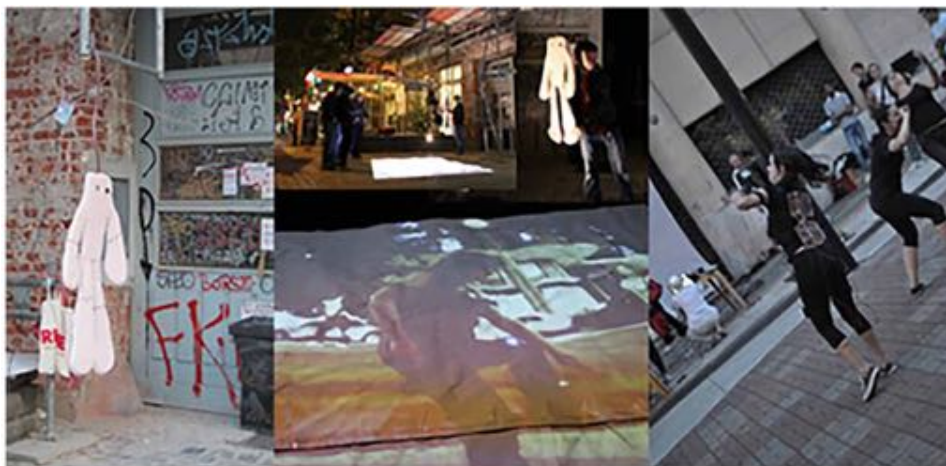


In Berlin, it was identified that people were mostly interested in the ‘magic’ of the remote touch, not realising its potential for negotiation and dialogue (Figure 4). The interest in the interface—the ‘magic by ignorance’ – was reinforced by three main features of the installation. First, the need 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 answer from the dancer, making remote negotiation difficult.

These three aspects contribute to a more functional than playful interaction in Berlin. 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 as the music box than as the piano, limiting people’s interaction with 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, focused 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 more freely interact among themselves and with the space. They were prone to bodily engage in the experiment, since they are already comfortable with performing in public spaces (Figure 5). 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, 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 to technology, hindering any possibility of social awareness, let alone transformation.

Figure 4. People interacting in Berlin with the doll having as visual feedback the image of the dancers in Brazil and the dancers in Brazil stimulated by people touching the doll in Berlin (Copyright 2011, LAGEAR. Used with permission)



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Figure 5. The dancers in Brazil wearing the Voodoo device being stimulated by people in Berlin (Copyright 2011, LAGEAR. Used with permission)



Despite the problems above discussed *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. However, these were not enough to trigger socio-spatial transformation. It is important to say that the fetish of technology has clouded our judgment in this specific installation. Even if we can foresee possible future developments of remote actuation to overcome the fetishism of the visual, this might not be done taking technological development as all there is. We have discussed this experiment in a more optimistic tone (Baltazar et al, 2014), believing that “exploring negotiation beyond the ‘logic of the visual’ by means of remote actuation is a way to enhance the feeling of belonging and presence.” However, we have learned that socio-spatial context needs closer attention and for that an enduring and dialogical interaction needs attention. This leads us to *Ituita*.

Ituita

Ituita (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, placed in the cascade at the central square of the Baroque city of Congonhas, Minas Gerais, Brazil (Figures 6 and 7). *Ituita* was designed to engage people with their city issues in two different ways. First by means of the website in which people answer questions regarding different monthly themes related to the city (waste, health, transport etc); and second by playfully interacting in the square with graphics that summarize the results of the online questionnaire—such graphics are animated responding to people’s movement in the square captured by Kinect sensor.

As a reactive interface, *Ituita* enables a reactive interaction, when the users respond the questionnaire and graphics are automatically shown in the LED displays in the square. As a proactive interface, *Ituita* enables a proactive interaction, when people are interacting with the graphics in the square and suddenly different graphics appears on the LED displays (output of online answered questions). Nevertheless, even if the interface is reactive and proactive triggering reactive and proactive interactions, there is also a dialogical interaction promoted by the openness of the project to people’s engagement.

Figure 6. How Ituita works (Copyright 2012, LAGEAR. Used with permission)

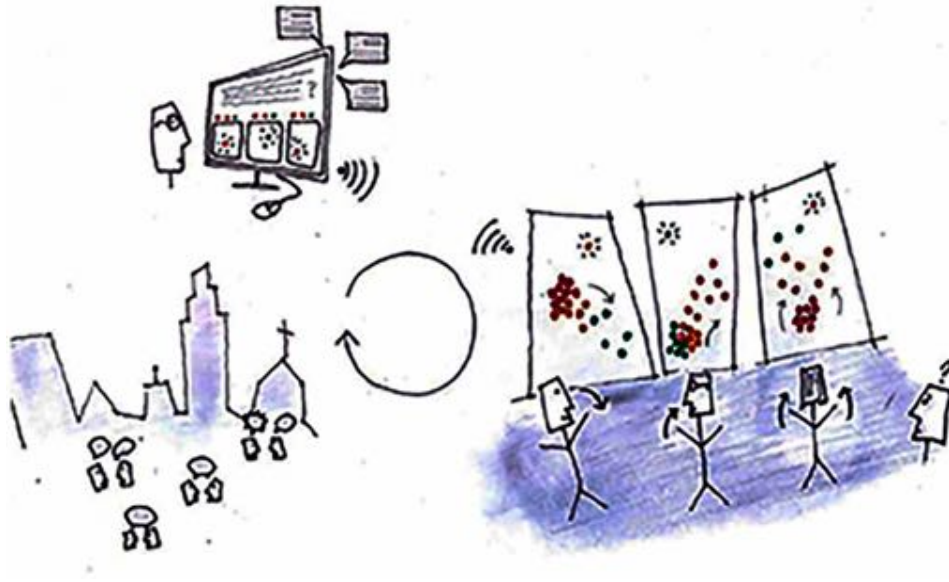


Figure 7. The inauguration of the central square in Congonhas, with Ituita working (Copyright 2013, LAGEAR. Used with permission)



Ituita is a kind of thermometer of the city, and proposes a circularity of actions implied by the present-time feedback between the website and the LED displays. The given answers to the online questionnaire generates the graphics shown in the square. At the same time the interpreted graphics trigger discussions in the online forum, which in a 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 people really engage in a direct democracy proposed by the interface.

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In the case of *Ituita* interaction is dialogical not the interface. The interface by 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, such a feeling of belonging and presence is very difficult to be directly connected 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.

If on one hand *Ituita* moves towards the dialectics of the spectacle and experience, as it proposes an open and indeterminate experience beyond mere contemplation, on the other it was not enough to engage citizens in dialogue with themselves regarding the city. The main problem was the belief that an interface that is open to dialogical interaction would be enough to trigger dialogue between people without a strong political support to make it knowledgeable by all the citizens. A possible solution for that would be to make the design process itself dialogical.

Once people are included in the process, they might understand the potential of the interface and, in the case of *Ituita*, might be compelled to feed the questionnaires with more contextual issues, more dear to them, instead of the generic prescribed issues we have programmed. This has led us to our next development.

CANI (Catas Altas Network of Ideas)

Ituita was essential to rethink the processes when proposing an urban intervention for socio-spatial transformation. While on the one hand *Ituita* has shown technology's potential to provide a hybrid dialogical interface (between the panels in the central square and the website), on the other hand it has proven its failure to engage residents in dialogue. The main weakness of the interface lies in the lack of dialogue between the proponents and the population, both during the design process and the disclosure and dissemination process. In addition to requiring a certain complexity of interaction, the subjects covered by the interface did not encourage dialogue. *Ituita*, therefore, relied heavily on technology while leaving everyday (and socio-spatial) issues in the background.

In this way, the urban interface CANI, developed in Cata Altas, also a small town in Minas Gerais, had as its main focus the problematisation of the socio-spatial context before any digital technological development. In addition to the previous experiences already mentioned, the process was inspired by Hannah Arendt's concepts of public sphere and political action (Arendt, 1998) that approached the idea of social transformation. For the philosopher, there are three human conditions: work, labour, and action, the last being the political activity *par excellence*, corresponding to the human capacity to unleash the new. While work and labor do not necessarily depend on the relationship between people, action responds to human plurality and has an adequate space in the public sphere. However, for Arendt, the collection of individual wishes on the public domain – she sees it as (one of the causes of) the rise of the social – is one of the main causes of the decline of the public sphere, while the blurring between the public which is the domain of the citizens, and the private which is the domain of the individual prevents political action, that is, social transformation.

So, we can say that CANI aims to engage people into the direction of the resumption of the public sphere, this means to open possibilities of dialogical interactions between plural individuals coming from different classes and social backgrounds about common issues, so they can act politically as citizens.

Catas Altas, a small town in Minas Gerais (about 4,000 inhabitants) was chosen for the experiment because of the patent need for citizens to articulate themselves, once they suffer from the presence of two of Brazil's biggest mining companies: Vale and Samarco. It is a critical situation, because while the population depends on the jobs created, the mining companies consume the natural wealth of the region from which the city depends to boost tourism and generate independent jobs, among other things. So, Catas Altas is a good example of a community where the disconnection between the residents prevents political action (or social transformation).

CANI's main strategy to incite social transformation was to encourage a dialogue between citizens based on the socio-spatial complexities of the place. And for this, the first step was to gain knowledge about such complexities under the watchful eyes of those who know most about the daily life of Catas Altas: the residents themselves.

During ten months, participatory activities were carried out in order to articulate the residents in their plurality since the beginning of the process, and to know the most of the community's socio-spatial complexities. In this way, the inhabitants of Catas Altas were not mere objects of study, but the main characters, since it was the interaction with them (and between them) that defined each subsequent step of the process. So, as we aimed to build a dialogical interface that incites dialogical interactions, the process itself was dialogical, that is, uncertain but always contextualized.

The first proposed activity was a photography workshop that had two goals: to enable an initial approach to the daily life of the city and to set in motion a group formed by young people interested in discussing and changing the city. We focused on this group because youngsters may have spare time to engage with such a project and because they may also potentially expand the discussion within their own family and friends circles. A young female inhabitant, whom we met previously and who was very interested in discussing the city she lived on, became our local expert and helped us articulate this group. By means of a pamphlet distributed by us at the end of a school session, we advertised the workshop, and it was clear that her involvement enthused students to participate because they already knew her. Thus, she became an important link between the researchers and the participants, specially in the early stages of the research. At the workshop day, there were 10 participants. They took pictures of places or situations that they found interesting and, later, the images were projected into a wall. The participants were asked to make comments and to relate the pictures to a fabric map laid out on the floor and a discussion about their city followed. They were then invited to formalize a group interested not only in discussing, but also changing the city. All upcoming activities resulted from decisions of the group members themselves. Over the next months out activities were carried out, such as a video workshop to film interviews with the older residents to remember the stories of the city, manufacturing flyers questioning the relations in the city, and even an open air cinema club. The researchers' job was to do the logistics for the activities that are happening and to observe people interaction. Unlike interviews and surveys, all these activities revealed the important issues that sometimes people themselves can not express formally.

The open air cinema club has proved to be an important interface both to articulate people and to let us know more about the dynamics of the city. Altogether there were seven sessions (some with more than 100 spectators), always in the public space. The movie and the place where it would be displayed were chosen by the residents themselves via Facebook.

Dialogue With Interfaces

From the dialogical process, we had three main guidelines for the design of the interface. First, it should be based on the city map because a very simple map proved to be a great articulator of people's ideas. Second, it should be designed as a portable urban interface that might easily travel to different neighborhoods, in order to articulate the maximum of residents in their plurality. And finally, the interface should return to the residents the main socio-spatial complexities that came to light during the process in order to incite dialogues.

After ten months of dialogical process between the researchers and inhabitants, we built CANI. It may be said that even though CANI's design was a top-down process, in terms of the interaction it enables, empowerment happens in a bottom-up fashion, starting from the users. As such, CANI is a result of bringing together our knowledge – technical, methodological, and theoretical – and the residents' knowledge about their everyday life. The interface, made of simple and cheap materials, is an ambulant structure composed of an acrylic display of the map of the city that can have its parts illuminated according to people's responses to the proposed questions. These questions were created based on all the information about the relations in the city collected throughout the process. After answering what is suggested on the LED illuminated panel, such as highlighting an area they feel is the most neglected in the city, the person must press a button that triggers a webcam, located on top of the interface. All answers are recorded and then a synthesis map is made available at the Internet. Figures 8, 9, 10 and 11 present the design, interface, the setup, and the synthesis of the interactions.

Each action informed about the reality of that place and allowed citizens to articulate themselves and rethink the socio-spatial complexities of Catas Altas.

CANI has been used by over a hundred residents for five days, and we witnessed clever dialogues on the issues of the city, among people who sometimes did not even know each other. It was a surprise to note that the discussion did not take place on the Internet but live, when people were interacting with the map. So people do not only interact with the interface but interact with each other. The technology served more to 'attract attention' than as a basis for dialogue. What most 'kept the eye' were the map and the related issues. These simple but contextualized questions were enough to promote dialogue around the subjects of the public but not private interests. People were talking as citizens

Figure 8. The general design of the urban interface CANI (Catatas Altas Network of Ideas) (Copyright 2014, LAGEAR. Used with permission)

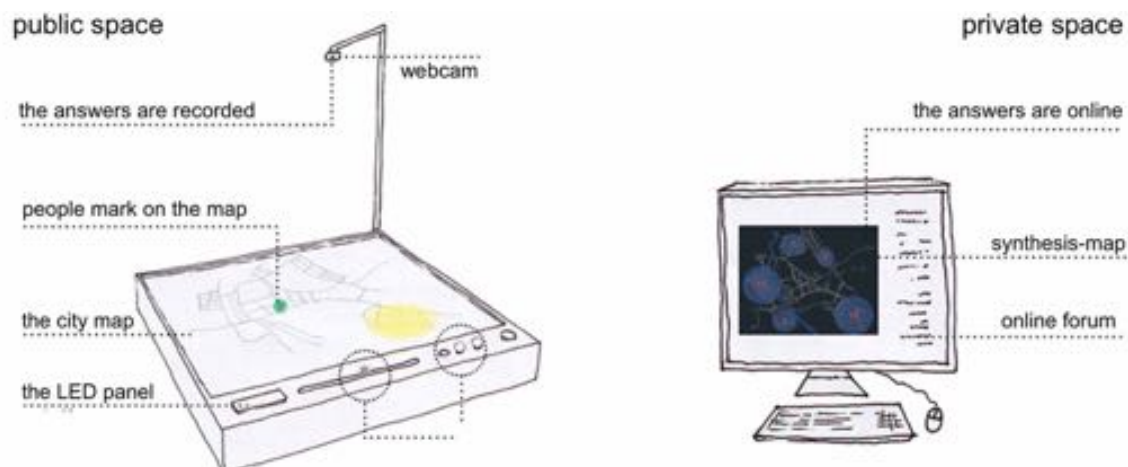


Figure 9. The drawing of the arrangement of CANI elements (Copyleft 2014, LAGEAR. Used with permission)

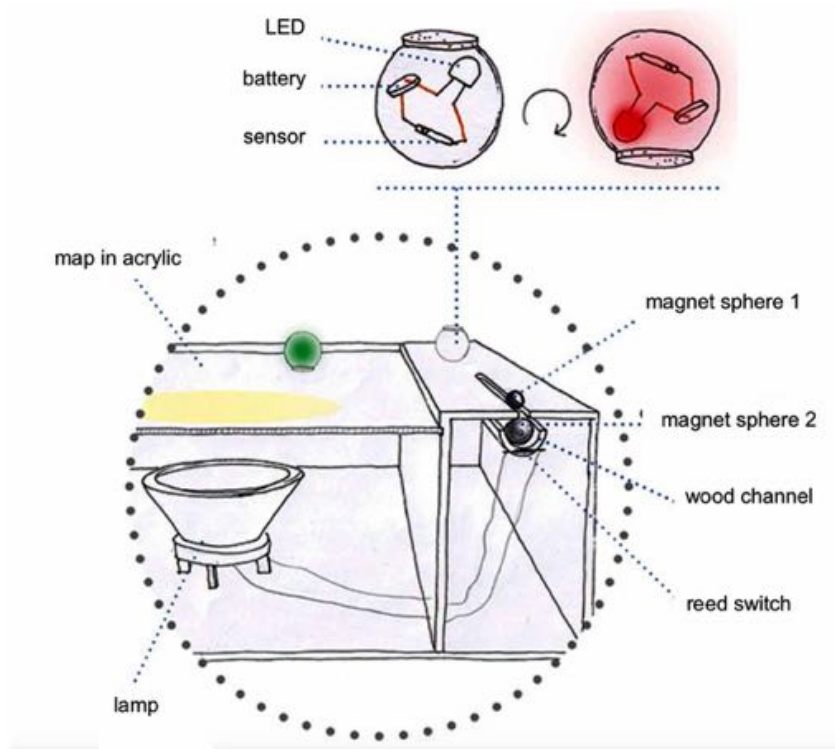
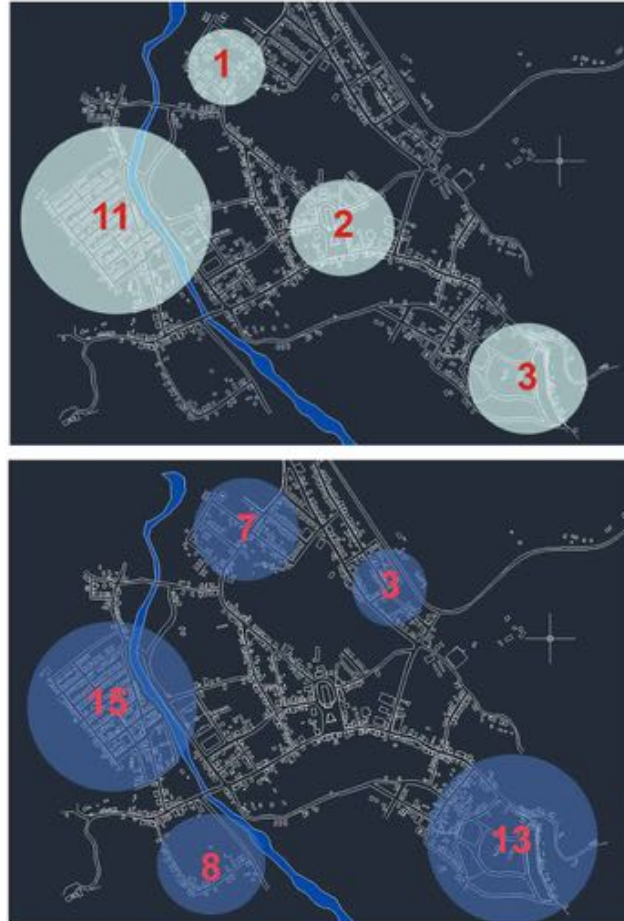


Figure 10. The arrangement of CANI elements (Copyright 2014, LAGEAR. Used with permission)



Figure 11. Systematisation of people's responses to the proposed questions displayed in a website (Copyright 2014, LAGEAR. Used with permission)



CONCLUSION

This paper discusses LAGEAR's main drives, which are playful interaction, the distinction between the interface and interaction and dialogue, in order to create interactive interfaces that actually engage people in socio-spatial transformation. Examples of the authors' works were presented, from visually based to bodily engaging and socio-political installations.

The current popularisation of discourses on social transformation has contributed to cultivate the fetish of the visual and of digital technology, as instead of focusing on socio-spatial contexts most urban installations are using the social discourse as a source of inspiration to create a spectacle based on technological development. Even if we were aware of the fetish of the visual, the dialectics of spectacle and experience was still clouding our perspective of the fetish of digital technology. To mention Cedric Price (2003), we were accepting that technology was the answer, even without asking the question. The main question we started to ask concerns how people might engage in socio-spatial transformation by means of our projects. This leads to a need to seriously problematising the contexts for which we

are developing urban interfaces and avoiding the visual and technological spectacles disguised behind empty discourses of social transformation. The most important discussion did not concern the bodily engagement but the problematisation leading to the need of engagement. This means, the need to work with the socio-spatial context and propose interfaces that take into account the process in its openness and indeterminacy, instead of prescribing a product (even if an interface-product). For that, instead of discussing the production of an interface-product – which might be reactive, proactive, or dialogical – we propose to discuss first the interaction one is willing to promote by means of the interface.

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KEY TERMS AND DEFINITIONS

Dialectics of Spectacle and Experience: The visual is not taken as merely contemplative and experience is not taken as merely active, they work in a dialectic relation, enriching each other, avoiding a contemplative finished product and promoting a seductive and enduring interaction of people with each other and with the space.

Dialogue: Exchange of pieces of information to synthesize new information as proposed by Vilém Flusser.

Engagement: Active and continuous participation.

Fetish of Digital Technology: The assumption that the use of digital technology is an end in itself, and in the context of urban installations, enough to accomplish socio-spatial transformation, but in fact it contributes to fragment people's experience.

Interaction: The way people relate to each other or how people relate themselves to interfaces and objects.

Interface: Digital-physical devices that enable human-machine or human-human interaction.

Logic of the Visual: The privileging of the visual over lived experiences, which ultimately leads to the commodification of space.

Playful Interaction: A form of interaction when one uses an apparatus beyond its prescriptions, engaging with content and not only with its interface.

Socio-Spatial Transformation: A political transformation of space having social emancipation at the horizon, acknowledging that space is a social product and that society is formed and transformed by the space it forges.