The Appropriation of a Digital Speakers' Corner: Lessons Learned from the In-the-wild Deployment of Mégaphone

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ABSTRACT

Interactive digital technologies embedded in urban spaces typically tend to be used to deliver news, context-relevant information and commercial advertisements. To design urban technologies that will serve other ends, we first need to know how people might want to interact with them. Using an ethnographic approach, we collected field data in order to better understand this. This study presents some of the findings of our qualitative evaluation of MÉGAPHONE, an interactive artistic installation deployed in a public space in downtown Montréal, Canada. In this paper, we provide thick descriptions of our detailed field observations and interviews with participants conducted over the ten-week deployment with a deep focus on how users appropriated this system. Our results highlight *four public interaction strategies* as a set of abstractions that suggest how people might want to make use of interactive public installations: place-making, self-representing, first-person news reporting and bootstrapping online presence with digital recordings.

Author Keywords

Interactive public art installations; urban technology; voice-activated interaction; civic engagement; appropriation.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous; J.5 Arts and humanities: fine arts.

INTRODUCTION

From the rise of citizen journalism to the mobilizations made possible through Internet, it has been widely claimed that digital media has the power to revitalize free speech, the public sphere, political activism and social participation. Until recently, the tools most associated with this claim were online media platforms and social networking services (SNS) such as FACEBOOK™, TWITTER™, YOUTUBE™,

microblogs and discussion forums. Our lab investigates this paradigm offline by asking: How could interactive digital urban technologies be used to facilitate new forms of social, cultural and political interaction in *real public space*?

Today, with engineers and artists around the world envisioning outdoor new media architecture that make urban technology centers of attraction in dedicated urban settings, we are seeing more and more examples of how interactive systems can support civic participation in the fabric of the city. These changes come with the promise of digitally-interactive public spaces enabling new forms of technology-mediated social participation (TMSP), activism and civic engagement in the 21st century [7, 10].

Using an ethnographic approach, this paper takes a close look at a few of the public interventions that took place during the deployment of an interactive art installation designed as a digitally-augmented "Speakers' Corner" and agora. Originally an iteration of a prototype created by local artists, MÉGAPHONE was deployed for the very first time in 2013 during a period of ten consecutive weeks in Montréal, Canada. We offer a qualitative analysis of our detailed field observations conducted with a deep focus on how users appropriated this technological outdoor artifact.

Our study outlines *four public interaction strategies* which were used over and over again by the different end user communities who appropriated MÉGAPHONE over its three-month deployment: place-making, self-representing, first-person news reporting and bootstrapping online presence with digital recordings. To provide grounded examples of how these abstractions found their expression during free play with MÉGAPHONE, our results are presented as thick descriptions of four specific interventions. By bridging high level concepts with *in situ* digital practices, our study seeks to provide designers with novel insights on how people might want to make use of interactive public installations, in particular, voice-activated large screen technology.

This paper is structured as follows. We first review related work. We then describe the installation in detail. We follow this by contextualizing our methodological approach and field evaluation in relation to the deployment. Next, we present our results as thick descriptions. Finally, we discuss the design implications of these results. The study concludes by summarizing our findings and future work.

RELATED WORK

A multitude of large-scale display prototypes have been designed with the intent of configuring new social spaces and enabling more participatory forms of public interaction. We discuss some of this work in relation to MÉGAPHONE's three functions: fostering copresent interaction, encouraging civic participation and restructuring public space.

Screen-Based Systems to Foster CoPresent Interaction

One of the early prototypes of a system designed to enable public interaction is OPINIONIZER, a shared wall display that people could post their views and opinions onto by typing words at a keyboard placed on a table near the display [2]. Brignull & Rogers observed patterns of physical and social engagement around the system during two short social events. This study generated a canonical public interaction flow model. It also identified the honey-pot effect as an important social affordance: "the progressive increase in the number of people in the immediate vicinity of where people were typing in their comments, creating a sociable 'buzz' in the area" (2, p. 20). Two other significant findings were, first, that the OPINIONIZER proved to be a highly effective ice-breaker since it made people socialize with others they did not know, and second, that although using SMS text messages to post comments might reduce social embarrassment, it might risk limiting social interaction.

In contrast, SAPPORO WORLD WINDOW (SWW) is a screen-based application designed to encourage private, social-cocooning by making collocated online social interaction possible through users's mobile devices [3]. Deployed in Japan, this system places emphasis on maximizing privacy and minimizing social embarrassment to stimulate urban interaction, rather than enhancing face-to-face interaction (3, p. 512). Made up of six large public screens installed on the wall of an underground passageway, SWW used various social media services (YOUTUBE™, FLICKR™, TWITTER™, etc.) to create an open social media mashup of interesting locations in and around the city of Sapporo for pedestrians to discover. An exploratory study of SWW revealed three major insights: even though it involved private messaging, users expressed they would more likely use the system as a group than on their own; locally produced content was felt to be better suited for this type of platform; and the screens augmented the *functions* of the underground space [18].

Screen-Based Systems to Encourage Civic Participation

DISCUSSION IN SPACE is a system designed to turn a large digital public display into a public platform that collects public opinions and promotes civic discussions on a local urban planning project [16]. Citizens can contribute their feedback in-place by using SMS or TWITTER™ from their mobile phone. The main hypothesis tested in this study was whether this platform could engage citizens that do not generally participate in the civic process. Schroeter found that although most participants showed reticence at sharing their views, some of them confirmed that they had contributed ideas and feedback that they otherwise would not have expressed face-to-face or via online social media.

Offering a very similar prototype service built upon a large public interactive display, UBINION also seeks to provide a pervasive technological tool through which young people whose voices are not otherwise heard can provide feedback on topical municipal issues [9]. These personalized opinions and comments are fed into a popular online social networking service (SNS) — FACEBOOK™, with text comments replicated on TWITTER™ — to allow others to take part in online discussions on these issues and to increase interaction between youth and city officials in an extended virtual space. The evaluation revealed that respondents preferred giving feedback collaboratively with friends (honey-pot effect); the system was most efficient when it was deployed in environments that were playful and sociable; that a live feed from an integrated webcam attracted more users to the display (Schönböck's mirror metaphor); that being able to use the displays semi-anonymously gave the system added value in comparison with an SNS; and that UBINION arguably helped bootstrap its online community and successfully engage users.

Screen-Based Systems to Restructure Public Spaces

CITYWALL is a 2.5 meters wide multi-touch display installed on a shop front window in a high pedestrian traffic location of Helsinki, in Finland [15]. Simple to use, it allowed people to navigate in real time on FLICKR™ to move, scale and rotate photos two-handedly on the screen. Using ethnographic observations, the researchers observed that multi-user interaction was the primary type of interaction at the display; that many groups used the display as a stage for performing or playing games (playing pong with photos); that the multi-touch interface brought people together in support of social interaction; that pedestrians approached and negotiated the space surrounding the display by taking up roles which led to collaboration or conflict; and that a large display size attracted the audience.

The SPREAD.GUN and SMSSLINGSHOT are two distinct public space installations designed to ephemerally change the nature and use of public spaces [6]. Both use a projective device (a large cannon and slingshot) to playfully enable users to load and display their digital text messages onto large scale media façades. As with MÉGAPHONE, these projected installations could only be deployed after dusk and reconfigured the space in front of the façade by opening them up for social interaction, with SMSSLINGSHOT more successfully enabling what Fischer and Hornecker call *Shared Encounters* (6, p. 307). The stated intention behind these two urban interventions was: "Our initial idea was to create an ancient Greek agora like situation, where the communication channel employed by advertisers is opened up to the public, creating a digital speaker's corner" [6, pp. 308-309). Although this appears to be the same concept as that of MÉGAPHONE, in fact, these systems are substantially different since their input is textual rather than voice-based.

Figure 1. "Speakers' Corner" and small media façade.

Figure 2. View showing large media façade and agora.

In fact, this is what distinguishes MÉGAPHONE from all of these prototypes: its system is designed for voice-activated interaction. MÉGAPHONE was primarily intended to be an interactive digital agora, a place in the heart of the city where people could assemble to practice the art of public speaking and listen to their fellow citizens. The artist who conceptualized the installation drew his inspiration from the traditional soapbox "Speakers' Corner" in Hyde Park. However, the technology designers who created it also wanted it to be a multisensory installation. They envisioned public speaking and listening as a social and aesthetic experience that brings people together and transforms public space [Alexandre Lupien]. The overarching goal was thus to create public interaction *and* shared experiences.

Our study contributes to the extant literature by interpreting field data on how people interact with a large public screen when interactivity occurs solely through voice and sound. By conducting this *in situ* qualitative research on the first monumental-scale voice-activated "Speakers' Corner" and agora deployed in real public space, our goals are: first, to inspire designers to think of new possibilities for urban interventions; second, to suggest ways people might want to make better use of interactive public installations; third, to offer insights on their cultural, social and political potential; and fourth, to spur reflection on what affordances end users might need in similar systems. Furthermore, in relation to large screens, our field findings validated every one of the results expounded in the related work described above.

MÉGAPHONE AS AN INTERACTIVE DIGITAL AGORA

MÉGAPHONE is an artistic site-specific architectural scale installation designed with numerous components and output interfaces: audio patch, French/English speech recognition software, loudspeaker units for amplification, responsive stage lighting and two media façades (see Figures 1 and 2).

The MÉGAPHONE I/O Interfaces

Although the MÉGAPHONE installation is multi-faceted, it rests on a simple user interface design logic, which consists of a microphone as the only input device and four sets of output interfaces. This Shure Model 577B SONOBAR

microphone is directly connected to a long red funnel-shaped megaphone that rests on a 2.5 meter-high post. The stand is in the center of a hexagonally-shaped 4 meter-wide wood platform, which makes up the "Speakers' Corner".

Once the sound signal has been captured, processed, and analyzed, it is redirected to four distinct output interfaces: (1) eight amplifying loudspeaker units including one unit integrated into the red megaphone artifact; three units embedded into the sides of the wooden platform at ground level and four units perched around the agora 3.6 meters high; (2) a set of four VL3000 digital stage lights placed 6.5 meters-high behind the agora benches, triggered solely by sound input; (3) a 12m x 5m small media façade projected on shipping containers by one Christie projector; and (4) a 105m x 29m large media façade projected on a monumental building by eight Christie projectors (4 doubled sections).

MÉGAPHONE's Live Mode and Sleep Mode

MÉGAPHONE's output interfaces are designed to function in two different modes. The first is the *sleep mode* which is the default mode. The second is the *live mode* which is activated whenever a participant uses the microphone. Live mode is automatically deactivated after more than thirty seconds of silence. These two modes are the switchboard that coordinates the four sets of output interfaces. They constrain the possible functions of the large media façade.

In essence, MÉGAPHONE is an installation that amplifies the voice of users who speak into its microphone. However, a speech recognition system which can transcribe and analyze the speaker's words has been customized and integrated into the system architecture to enable different types of interactivity through the four sets of output interfaces.

Eight Loudspeaker Units

The sound captured in the microphone is divided into two signals: the first is sent through an audio patch that analyzes it to extract generative parameters for graphic display, while the second is processed into the sound console for output into the eight loudspeaker units which simply serve to amplify the speaker's voice in real time in live mode.

Stage Lighting

In live mode, the stage lighting takes the form of a bright PAR LED spotlight on the speaker and red ambient lighting in the rest of the agora. In sleep mode, red ambient lighting floods the "Speakers' Corner" platform while the rest of the agora remains lit by normal ambient street lighting.

Large Media Façade

Conversely, the large media façade was the output interface that was the most used for free play. Hence, when we mention "the media façade" in our four cases, we are specifically referring to this one. While the microphone is the keystone of MÉGAPHONE, the large media façade is its cornerstone as its function is to consolidate the installation. The designers originally intended it to be a means of visually representing the interventions in real time *and* to provide an archive of spoken words: at times, a living wall, at other times, a sleeping one that displays past speeches. Visible from many streets away, it would publicize the subjects debated in the "Speakers' Corner" in downtown Montréal and draw people in. In fact, it was the component that drove the appropriation process during the deployment.

In live mode, the large media façade filled up with some of the speaker's key words following a delay of about 30 seconds. The words appeared in white over a background that changed colors (ranging from yellow to indigo), based on the amplitude of the voice captured by the microphone. White curlicues of variable thickness appeared as dynamic visual patterns programmed to represent, in real time, the amplitude and rhythm of the voice as it was processed. In sleep mode, the large façade displayed the words that had been recently spoken most often in a grid-like pattern of red, white and black rectangular boxes. The size of these boxes was proportional to how often a word was used, with bigger boxes containing the words that had been uttered most often. The color reflected how often words had been uttered with red for the words most often pronounced; black for those at the second priority level and white for the third.

During the ten weeks of the deployment, the words from every speaker's interventions were compiled into a database for display on the media façade, which became, every evening, like a giant digital palimpsest archiving the most popular concerns voiced by citizens. When sleep mode extended for more than 5 minutes, the display also showed the words that had been spoken most often over the whole period of the deployment. The same design scenario was used for the color of boxes and fonts: red fonts for the most recent words; then, black; then white for the least recent.

DEPLOYMENT

In 2012, a Montréal-based public-private technology partnership put out a call for projects inviting local artists to propose architectural-scale outdoor artistic installation designs. Selected as the finalist in this public competition, a team at Moment Factory conceptualized, created, installed and deployed MÉGAPHONE in the Quartier des Spectacles's

Promenade des artistes, a small plaza downtown between September 4 and November 4, 2013. To carry out their project, the designers were given full access to this public space, to its digital infrastructure, to public funding and to specially-trained technicians during the deployment.

Methodology

The Principal Investigator (PI) is a junior researcher in a HCI media anthropology lab which specializes in multi-sited ethnographic research methods and collaborative methodologies [12]. Using a multi-sited design approach, the PI built and maintained epistemological relationships *with* (rather than *of*) different stakeholder communities in order to study the design process through the constructivist lens of what Schön calls "reflective practice" [4].

Previous research on the design of interactive digital urban technologies emphasizes the importance of identifying and aligning the interests of the multiple groups of stakeholders involved in large scale interactive public installations [5]. In a multi-sited design approach, a researcher is sent to observe each of the sites in which people play a role in the creation, production, distribution and reception of a sociotechnical structure. This allows the researcher to get a sense of how the overall structure is crafted by describing how different stakeholders make and use artifacts, and how they dynamically influence one another in doing so [21].

Field Evaluation and Data Collection

Prior to this research in 2012, the PI had undertaken a preliminary survey of the Quartier des Spectacles's digital infrastructure and interviewed its key informants to better understand their media façade toolbox model [8]. Before the field evaluation, the PI became familiar with each of the collaborative partnership's stakeholders by attending some of MÉGAPHONE's production meetings and onsite testing during the four months that preceded its official launch, as well as by conducting some semi-structured interviews with several of its members. During the entire deployment, the PI was immersed within the MÉGAPHONE installation, at times participating in the interventions, and at other times, adopting the ethnographer's "fly on the wall" approach to make observations about audience reception and how people appropriated the installation for their own purposes.

Field data was collected during a total of 37 days over a period of ten consecutive weeks from 7 pm to 11 pm, on Wednesdays, Thursdays, Fridays, Saturdays and one Monday. During interventions, the PI sat on different benches in the installation space and walked around the plaza, unobtrusively observing speakers, spectators and passersby from different vantage points; she took detailed field notes, photographs and videos of the interventions and noted how people used the space, especially during open mike sessions. At the end of every night, the PI would speak with the onsite staff to note their observations. In the three months that followed the deployment, she conducted

post hoc interviews lasting from 60 to 90 minutes with 5 experts involved in the project *[E]* and 21 participants *[P]*.

Interventions
The collaborative partnership that coproduced MÉGAPHONE provided a website on which people could reserve one-hour long sessions to use its "Speakers' Corner". Weeks before the launch, different activist groups, performance artists, poets, intellectuals, journalists and students reserved their session online. Empty slots automatically became "open mike" sessions during which free play generally occurred.

Out of the 96 sessions of the 10-week deployment, 54 of them were reserved by end users who had prepared their interventions in advance. The 42 others were "open mike" sessions which could last between one to four hours. It is noteworthy that 4 open mike sessions were spontaneously used to present unscheduled, well-prepared interventions: a municipal party used it to present their political platform; an important politician delivered a speech in response to a crisis; local activists made a guerilla-style appearance and a local teacher's union denounced their working conditions.

Because pedestrians constantly walked in and out of the installation, sometimes sitting for an hour, sometimes for only a minute, an exact count of end users is impossible. However, every fifteen minutes, the PI did a rough head count of the number of people who were standing around, or sitting on, the benches of the agora during the ten weeks of the deployment. The average number of people present during scheduled interventions ranged between 10 and 200, while during open mike, this number was between 0 and 60.

During the 37 days of deployment, over 4800 people used the agora space to participate in the installation either as speakers or audience members. Out of all those, well over 1000 of them interacted with the system by speaking into the microphone. Most used MÉGAPHONE as a traditional "Speakers' Corner", but much to our surprise, many also used it in unforeseen ways. In the next section, we report on how some users appropriated the technology and space.

RESULTS
The most salient observation made during the ten week public deployment of MÉGAPHONE in an uncontrolled urban setting was that during "open mike" sessions, end users often appropriated it for purposes that went quite beyond those intended by the designers. We were able to validate this with the designers before, during and after the deployment. Designed around the playful use of technology and space, MÉGAPHONE simply sought to revive the art of public speaking and give citizens a platform for free speech.

However, every evening presented unanticipated forms of interactions with the system, evidence that the design of MÉGAPHONE was sufficiently pliant to accommodate the needs of not just one, but of many user communities. In this paper, we propose to look at the appropriative process by describing how four different groups of users interacted through MÉGAPHONE to achieve their specific goals.

Out of the scores of usages we observed in the field, we chose to present only a few select cases of how different end user communities appropriated MÉGAPHONE because, first, we deemed them to be meaningful gestures; second, they allow us to make thick descriptions of specific usage that say something new and unique about how people engaged with the installation in unforeseen ways; and third, all of them illustrate the *four public interaction strategies* outlined in this study: (1) place-making by physically and symbolically occupying the space; (2) self-representing through self-publication; (3) using the installation as a news channel to make personal content public; (4) using digital recordings of interventions to bootstrap online presence. Although these public interaction strategies were deployed in all four of the following cases, we chose to give a thick description of each one in the case it played a larger role in the appropriation of the media façade.

A Live Commemorative Urban Media Façade
On October 2, 2013, several activists showed up impromptu during an open mike session. They represented a grass-root community group committed to opposing the increasing police brutality and repressive force applied against people participating in street protests. About twenty of them sat on the benches in the agora space, while three others stepped up to the "Speakers' Corner". That evening, the activists occupied the space and used MÉGAPHONE's imposing media façade as a commemorative monument. During an intervention that lasted over twenty minutes, they took turns reading a manifesto followed by a list of the names of the seventy young men who had died as a result of police brutality between 1987 and 2013. Little by little, some of these names started to appear on the façade as they spoke.

The activists thus transformed the urban setting around MÉGAPHONE into a memorial space to pay homage to the victims and make a public plea for peace. They used the architectural-scale media façade as a commemorative monument in two substantially different ways, which both supported the stated intentions behind their intervention.

First, the names of the deceased were temporarily inscribed in real time onto the monumental façade until the interface was wiped clean a few minutes after the last speaker hung up the microphone. Second, these same names were permanently written into the system's archival database, designed to keep a record of all of the words transcribed by the speech recognition software throughout the whole ten weeks. In sleep mode, two displays alternate with one another: one proposes the "most recently spoken words", while another shows the "most frequently spoken words".

Place-Making: Physical vs. Symbolic; Implicit vs. Explicit
While in live mode the use of the façade explicitly lays claim to both a physical space (the material appropriation of a giant screen interface on the plaza) and a symbolic space

(alluding to the meaning of the words represented onto this interface), in sleep mode, we are confronted with a far more complex situation whereby whether the names appear or not is to be decided, on the one hand, by how accurately the speech recognition software processes them, and on the other hand, by an algorithm that selects which words will be published.

Consequently, some names may be published while others never will. In addition, even the published names will not always be displayed. In sleep mode, the system is constantly updated to select only the words that are either recently spoken or most frequently spoken. Thus, if the names are not repeated during the ten-week deployment, they may never again appear on the façade, while remaining forever inscribed in the database. In such a scenario, the database becomes a digital mausoleum where the deceased invisibly rest in peace: an implicit symbolic space [11].

These dual uses of the façade, namely the physical vs. the symbolic and the explicit vs. the implicit, are made possible by MÉGAPHONE's design affordances. But they also serve to illustrate how the notion of territoriality can take unexpected forms when end users appropriate a system in public space. Theories on *territoriality* have been widely used to study interaction with shared interfaces [17, p. 300]:

> Human territoriality researchers generally agree that territories serve to help people mediate their social interaction through laying claim to a space…or through association of a space to a person due to repeated use...

However, from a design perspective, we would suggest that it may be more appropriate to apply the concept of *place-making* to locative media [1]. While territoriality places the emphasis on who owns or shares the space, place-making speaks to how people can create its meaning through storytelling. Place-making is a narrative speech act which remembers and imagines past events to create symbolic and physical associations to a place. Yet, it is not only a way of remembering the past, it is also a way of constructing social traditions and identities and "history itself, of inventing it, of fashioning novel versions of 'what happened here'…a venerable means of *doing* human history" [1, pp. 6-7].

"The police HQ was two blocks away so I knew that they would be able to see the names of the victims displayed on the façade. But what we really wanted was for these names to be projected onto the façade of their building." [P20]

P20's comment suggests a design implication that several of our other interviewees brought up: the desire to have access to a similar contraption or components that would be mobile, portable, or easily dismantled and reassembled.

Place-making narratives speak to specific emplacements evoking that *this* event happened *here*. While the activists used the MÉGAPHONE to tell the story of men who were killed by police in different places in Montréal, they gave these victims an audible and visible presence in *this* space by calling out their names, suggesting digital technology can be used to appropriate sites for public representation.

A Live Alternative News Source in Public Space
During the ten-week deployment of MÉGAPHONE, a local daily newspaper reserved and organized a total of five one-hour interventions on Wednesdays evenings from week #5 to week #9 inclusively. Each of these interventions saw the daily's journalists use the "Speakers' Corner" to present their editorial comments on a wide range of topics, which included climatic change, local arts and culture, the new economic and political paradigms, urban planning for human scale, the historical roots of political corruption in the city and public order policing during activist protests.

Over fifty people showed up to participate in the session dedicated to this last issue on the evening of October 30, 2013. Several of them had been invited by the managing editor of the newspaper to give their detailed testimony of how they had been unfairly arrested, charged, treated by the judicial process, profiled and discriminated against during demonstrations. Serving as an intermediator, one activist whom we interviewed [P15] was asked to help identify and recruit speakers who would tell stories that had not been heard in any mass media channel and were compelling enough to bring injustices to light. Thus, instead of having their own reporters editorialize on October 30, the newspaper editor asked the protesters to publicly present their own stories.

First-Person News Reporting in Public Space
There has been a great deal written on how the Internet and digital devices have facilitated online citizen journalism in the past decade. During the deployment of MÉGAPHONE, we found that digital technology could actually support first-person news reports and testimonies in real public space. We believe that this type of offline citizen journalism may present a new epistemological and ontological paradigm. Our interview with P15 provided evidence to support this:

"When people hear these false stories reported on mass media news channels, they don't question whether it's true or not, and therefore they don't seek to find out what really happened….when the newspaper approached me about organizing an evening on the subject of police presence on the streets, my first idea was to have victims of obvious prosecutorial misconduct publicly testify…my main goal was to bring their stories out in the open because I knew that if people heard their version, they would get it…in fact, we had been looking for ways to out these stories..."[P15]

Asked if MÉGAPHONE helped them achieved this, he adds:

"One of the problems I see with MÉGAPHONE is that it tends to attract people who are already well informed or actively engaged…in the end, our interventions that night were worth the effort mainly because of the media coverage it received the next day in an article run by the daily." [P15]

P15 explains that he had been routinely publishing every fact and event related to these injustices on his own FACEBOOK™ and TWITTER™ newsfeed which are followed by about 18,000 subscribers worldwide. However, when the daily published a 1000-word article that included a large photo on their particular intervention at MÉGAPHONE, it allowed him to republish that link, create a greater buzz around these testimonials and give them a new legitimacy by virtue of the fact that they were now being covered in a highly respectable news outlet: *"people tend to believe the version published in 'official' news sources." [P15]*

Here, we see that this form of offline citizen journalism has its greatest impact when it is documented and republished in paper-based or online newspapers, or else broadcast in mass media channels to be later posted online as "official" news. In this context, MÉGAPHONE offers a publicly visible place where the telling of a news event could be staged live and later garner attention from a real critical mass online.

"MÉGAPHONE is not a space for formal presentations or conferences. It's a space that lends itself to telling stories, giving personal accounts and sharing experiences because its theatricality spurs the curiosity of passersby." [P15]

According to HCI researchers, the power of interactive screens in public space "stems from their ability to frame situations" and to "transform urban areas into the most impressive stages the world has yet seen" [10]. Our own observations showed that end users often used MÉGAPHONE as a live stage *and* as a live studio to record interventions.

One of the experts we interviewed about the deployment of MÉGAPHONE suggested that designers could support this by adding to the installation a few cameras that would provide an accessible archive of the interventions online [E4]. Most of the 21 participants we interviewed also felt that such an online archive would be desirable and useful. However, many expressed concerns about who would film and control this audio-visual content. Some thought that the camera could be a feature of the installation itself, while others preferred the idea of participants using their own digital devices to record the interventions and post them online.

Our own field observations strongly support the latter. Most people had a smart phone or camera with which they documented the speakers' interventions, the façade and the installation space, and we found numerous cases of interventions being made public on websites, online blogs, FACEBOOK™ pages and other social media (TWITTER™, YOUTUBE™, etc.). Given the critical role that media ownership now plays in journalism [14], we would suggest citizens retain as much control as possible in this process.

A Live Crowdfunding Platform in Public Space
During an open mike session on November 2, 2013, a local musician showed up with her violin about twenty minutes before the beginning of a free one-hour stand-up comic show that had been programmed weeks in advance and had

thus drawn into the agora a very large audience. For several weeks, this local artist had been using a crowdfunding site called INDIEGOGO™ as a means to fund the recording of her third album. She explains that, around that time, contributions had been stagnating around $2,500:

"I had exhausted my social media contacts as well as my email lists and my friends, so I was looking for a rooftop to shout out from to boost the fundraising…I went down to that space just thinking I would ask people…it just became a happening…and not just a happening, it became an event…and there was an audience…you can't just walk past MÉGAPHONE and not see anything…it's huge!" [P14].

She describes the installation space as "laid back, relaxed and accessible" [P14] and how watching a man use the Speakers' Corner before her was reassuring. Once she took the stage, she realized that she needed someone to hold the microphone for her while she played the violin. She asked the person closest to her, a homeless man often present at MÉGAPHONE, to hold the microphone while she performed:

"All of a sudden, I had a partner in crime and this was somebody who I would not normally meet or talk to, but it was somebody who happened to be there." [P14]

After explaining to the audience that she was a local artist trying to raise money to produce her next album, she played one of her own compositions from this album. Her live performance was captured with a video camera by a friend.

Bootstrapping Online Presence with Digital Recordings
Two weeks later, the artist used her FACEBOOK™ page to share the link to this new videoclip, which she had just posted on her INDIEGOGO™ webpage to breathe some new life into her fundraising campaign. Between October 17 and November 14, 2013, the artist had raised $2,796 on INDIEGOGO™ using a self-produced home movie in which she playfully introduced excerpts from her next album. Between November 14 and December 6, 2013, the period during which the video of her performance at MÉGAPHONE was made available online, this amount increased to $5,010.

The artist remarked that she did not make much use of the large media façade because it did not have the kinds of affordances that could support her needs. For instance, although she noticed that some of her words randomly appeared on the façade while she spoke, she actually felt that they did not add anything new to her intervention. When asked how she thought it could be made useful for artists to crowdfund, she reflected on her own intervention:

"When I step up to the mike and announce who I am, it would be great if the name of my band, and my website or FACEBOOK™ URL could appear on the façade." [P14]

During her interview, she discussed at great length how artists' online and offline presence *"feed off each other"* and how *"the best way to communicate to my audience is by using both"*, while placing a great deal of emphasis on

the idea that *"I don't get the same results unless I am doing both at the same time"* [P14]. She added that whether the large media façade published key words that people could use to do a web search on her, or whether it provided URL addresses or QR codes of her websites or social media pages, at the very least, it should enable people to find out more about her music, her concert dates and her albums.

Furthermore, she expressed that online presence had certain limitations that MÉGAPHONE could potentially overcome. The artist felt that playing in public at MÉGAPHONE allowed her to create an initial "buzz" that exposed a new audience to her music. She felt that directing these people to her online presence was a way to build on the momentum of that buzz. This case illustrates how a public space installation such as MÉGAPHONE can complement *and* bootstrap an end user's online and offline presence by using two distinct public interaction strategies: (1) digitally recording an offline intervention to webcast it and (2) using the media façade to publicize online sites during a live intervention that allows end users to reach new, diverse micro-publics in real space.

A Live Social Media Platform with Embodied Interaction
One of the most unexpected uses of MÉGAPHONE occurred during open mike sessions. In his canonical presentation on the use of YOUTUBE™, media anthropologist Michael Wesch claimed that the function of digital text in Web 2.0 is to link people through the sharing of user-generated content [20]. He argued that anonymity, a sense of physical distance and ephemeral dialogue enables new forms of TMSP because on such SNS's, people have the "freedom to experience humanity without fear or anxiety" [20, 29m09s].

During the deployment of MÉGAPHONE, we often observed similar forms of participation except for the fact that they were happening live, *without* the anonymity, the sense of physical distance or the ephemeral dialogue (since their words were published and archived on the façade). Only some of the spoken words are compiled, but as a participant remarked, they index the theme and language of speakers.

"We could see what the conversation was about from afar, and which language it was taking place in." [P10]

In fact, during open mike sessions, it seemed MÉGAPHONE was being used like a live offline SNS bearing a startling resemblance to FACEBOOK™. Individually or in small groups, people would walk up to the mike and share content with whomever was present in the agora or on the street: a short news item; important facts or events that had not been announced in mass media channels; their latest favorite film, show, band, book, piece of poetry; personal anecdotes; their current status expressing how they were feeling or what they were thinking at that moment. In response, audience members would generally "like" each intervention by applauding or nodding, and when they formed a critical mass, it was not unusual to see some of them come up and comment one after another on someone's content, much like a thread of comments that follow a FACEBOOK™ post.

Self-Representing Through Self-Publication
The first time we saw this happen was on the evening of September 12 after the first guest speaker, a university professor gave a talk on "economic democracy". During this 20-minute intervention, many passersby would stop to listen or even sit in the agora. In the hour that followed, seven people came to comment on the subject of his talk. The first man explained that he often felt hopeless and wished that society invested in people rather than progress. The next speakers built on this idea. There were about 30 people in the agora; most stayed for the following session.

During the next sessions, ten university students presented their ideas on urban planning improvements. Following this 30-minute presentation, there were 48 people in the agora. Again, audience members came to offer their opinion on the session topic, but this time, the "discussion thread" segued into far more personal commentaries. For instance, one person spoke about how people should be friendlier to one another, less judgmental and more supportive. One at a time, several people responded to this by giving concrete examples to support this idea (we should smile, say hello, never openly pass judgment, etc.). Of the seven audience members that had spoken in the previous session, five came to speak again, sometimes several times. In addition, six new people came to speak. All in all, two spoke once, seven spoke two times, two spoke three times and two spoke four times, much like a FACEBOOK™ discussion thread.

Although it always took a different form, this phenomenon occurred several times over the course of the deployment. We noticed that people who had participated in these events tended to come back regularly, once to twice a week. Although the media façade was appropriated in diverse and creative ways, it was always used as a *self-publication* tool to support interventions. As one participant stated:

"I think that MÉGAPHONE is a civic necessity and every city in the world should have one…the digital features give it a performative dimension with the façade making our spoken words appear gigantic and fill up the public space." [P8]

While MÉGAPHONE's voice amplification system fulfilled people's need to be heard by others in physical space, the media façade provided a giant interface for them *to be seen*. When we think of screen interfaces, we generally think about how they can give us digital presence in an online virtual public space [19]. But without an online connection, MÉGAPHONE's screen interface offered users a real physical presence by publishing some of their words in the city:

"There are many reasons to speak at MÉGAPHONE: political, social…but there are also selfish reason, like, I say words, they appear on the façade, I take a photo and I can say 'I was here'…for once, people have a space in

which they feel listened to…for some people, this satisfies a need to strengthen their ego; that too is important…" [P9]

Indeed, many people photographed their words on the media façade to republish them online or to keep them as a souvenir, but participants often stressed the value and importance of experiencing an embodied digital presence:

"I wouldn't want the MÉGAPHONE experience to go beyond real time and space. This is what makes it special." [P9]

Embodiment did not take away from the role of the media façade as a self-publishing tool. In fact, it seemed to add to it. For instance, many tourists used the installation to create digital postcards they would send abroad in real time. The evening of September 25, 2013, a man used the façade to post a message for his friend back home and asked the PI:

"Can I post a message on this giant 'noticeboard' for my friend Brian in England who is bedridden in the hospital? I want to send him a get-well-soon message by email." [P22]

He repeated the words "Brian", "get", "well" and "soon" over and over until they appeared on the façade. He then photographed a digital image of it and emailed it to his friend abroad, on the spot. When the PI encouraged him to keep talking, he glanced uneasily at his wife: *"People don't usually express interest in hearing me speak…" [P22]*

DISCUSSION

MÉGAPHONE is a public space installation whose design is articulated around a microphone and speech recognition software that output to four sets of interfaces: loudspeakers, responsive stage lighting and two media façades. This system architecture essentially determines our *baseline* of what people can do with it. The designers intended to create a system that would allow users, on the one hand, to contribute content through public speaking, and on the other hand, to take away content by listening and observing. They also wanted participants to socially interact.

Conceptually speaking, the designers had high hopes that words captured during the ten weeks of deployment would form a meaningful archive of what participants had said, thus reflecting what mattered to citizens in autumn 2013. They had plans to later perform an in-depth content analysis that would reveal these themes as matters of public interest that could be taken up for debate on the MÉGAPHONE website, in mass media, in online social media and among activists. However, they never really followed up on this.

While our baseline for comparison of how people interact with MÉGAPHONE is determined by these intentions and the perceived affordances of the design, our field observations revealed behaviors around MÉGAPHONE that were far more nuanced, interesting and diverse than what designers had expected, and arguably intentionally designed for. Although it is true that people did use the installation to simply "say something out loud in public", we carried out our study under the assumption that it is the unique ways in which

they did so that can make MÉGAPHONE useful and valuable. Whether MÉGAPHONE was utilized or not for the purpose it was originally intended, what was clear was that the design was not driving usage of the technology as much as human agency was. Put at the disposal of the general public, MÉGAPHONE became a *tool for people to interact with other people* through technology in real time and in public space. Participants made this very clear during the interviews.

Those who appropriated MÉGAPHONE not only developed a liking for it, but they also came back to use it several times over the course of the ten weeks. Of the 21 participants that were interviewed, all unanimously expressed the desire to see it as an installation permanently available to the public. This strongly suggests that there is a need for this type of interactive digital "Speakers' Corner" and agora. As interviewees have remarked and given the predilection for users to come back, we could arguably expect people to slowly develop a *culture of participation* for MÉGAPHONE and begin to form offline networks around it. There are a number of implications for design that we can derive from our results. We link some of these to past research:

- The *live* character of the platform is its key affordance;

- People may use such installations for identity-building place-making and forming new communities as we saw;

- A platform like MÉGAPHONE seems to offer a new type of digitally-enhanced social media for public space;

- A database that archives public interventions can be used concretely, symbolically, explicitly and implicitly. Its inherent value is that it may constitute a public record;

- A platform that can be used to report and town-cry news events or stories in public space could provide a new digitally-enhanced news channel for citizen journalism;

- People may use such installations to record their public interactions and later relay and leverage them online; the stage lighting was crucial in supporting this practice;

- A monumental media façade provides a giant screen interface that can be appropriated for self-publication *and* for self-representation to make one publicly visible [5];

- Even if the *sound amplification devices* could have been analog components, their importance as output interfaces should not be underestimated; audible from far away, the resounding voices of users throughout public space motivated people to use the microphone and attracted passersby to the agora, as did the *monumental façade*. The *urban furniture* and *responsive lighting* enhanced their effect, creating immersive, embodied experiences. Those four elements defined the interaction space [5];

- A multimodal installation like MÉGAPHONE supports crossmodal interaction [8]. Although the system entirely relies on sound input, it uses a number of design affordances to transduce audio input into impressions that appeal to different senses (sound, vision, proprioception);

- By enabling an enhancement of sensory experiences, such installations could place more emphasis on creating shared experiences over merely delivering content [6];

- An installation that includes an interactive screen often has a theatrical character and functions like a stage [10];

- Appropriation is leveraged by multifaceted designs [13].

CONCLUSION

This paper presented our qualitative field evaluation of MÉGAPHONE, which aimed to describe how city dwellers interacted with this installation in-the-wild. After discussing related work and describing the installation, deployment and our methodology, we presented thick descriptions of four cases to outline four public interaction strategies: (1) place-making by physically and symbolically occupying the space; (2) self-representing through self-publication; (3) using the installation as a news channel to make personal content public; and (4) using digital recordings of the public interventions to bootstrap online presence. From these, we then derived a set of general principles that could help orient and envision the design of such urban technologies.

Our forthcoming work on MÉGAPHONE will include an interpretational study in which we deeply analyze our semi-structured interviews with the 21 participants to identify entry and access points for design, as well as a study in which we compare longitudinal video captures that tracked people's movements in the plaza during the deployment.

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