Sharing music in public spaces: social insights from the Musikiosk project (Montreal, CA)

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ABSTRACT

We argue for a reconsideration of the role of public sharing of music and technology in urban, public settings, based on the results of research involving an interactive sound system. While current legislation in Quebec prevents the playing of amplified music in public, with the support of a Montreal borough, we developed and installed an open, free sound system (Musikiosk) allowing users to choose and play their own music into a pocket park off a busy commercial street. The park and system usage were systematically studied in an interdisciplinary research project, framed by current debates on the relationship between music, publicness and the use of interactive music technologies in public spaces. It combined observations, questionnaires and interviews with park users and residents, which are analyzed through the lens of use patterns and engagement. Results indicate that both users and non-users of the system evaluate Musikiosk as a welcome addition to the park and as a benefit to its conviviality and dynamics, by allowing users to share their music in a novel way and thus to appropriate their park acoustically. Findings further indicate that the process of shared music consumption is an essential advantage of the system, extending the range of park functions and encouraging interaction and different forms of social dynamics by also attracting new users. The positive reactions to Musikiosk show the need for a reevaluation of existing norms and regulations on public space use, particularly in relation to new forms of publicness through the sharing of music and technology.

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1. INTRODUCTION

Music is a medium through which people from different cultures and backgrounds can communicate, share experiences and affirm their collective and individual identity. New technological developments allow listeners nowadays to have greater access to mobile music devices that allow them to carry their musical choices "in their pocket" and to engage in mobile listening behaviors in the intimacy provided by highly personalized environments delineated by their headphones. These new musical experiences are particularly interesting in light of an increasing trend toward control exercised in monitored public spaces (1), where rules are continuously created to prohibit a growing list of behaviors considered disruptive (including playing amplified music in public). It is in this context that we address the question of how users of public spaces participate in the control of music production and consumption in these spaces by making use of a democratic, open and free music system. While various initiatives aim to deal with the challenges of offering access to users of various spaces control over their soundscape or designing self-regulated and interactive technologies that fit a public space

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setting, open and free sound / music systems have not been developed and installed, to our knowledge, in an unsupervised outdoor urban space. Furthermore, systematic empirical studies combining different methodologies to research the implications of such urban interventions over the acoustic environment as well as over the users of the space (be they users of the system or not) have not been performed.

In this paper, we bring together research to study the intricate relationship between music and public social life and the extent to which musical technologies embody, mediate and influence the power relationships between owners and users of public and private spaces. We put particular emphasis on how users negotiate their musical choices in a public context and how they relate to the other users of the space. In Section 2, we discuss how mobile music devices have shaped new forms of mobile listening and musical experiences and how they remain deeply social and a form of manifesting control over one's soundscape. We continue by discussing the role of music as a social force and the importance of allowing users to participate in the process of music production and consumption in public spaces. Building on the work of DeNora (2), we focus on the *process* of music consumption in public spaces rather than on the outcome (i.e. the types of music played or chosen by users). We do so by employing a process model of engagement (3) to study how users engage with the technology that allows them to control the process of music consumption in a public spaces setting.

We present Musikiosk (Section 3), an interactive sound system set in a public space that allows users of the space to engage and participate actively in the process of shaping their soundscape or what DeNora (2) would call "the 'soundtrack' for ongoing (and future) action" (p. 20). Musikiosk is an example of how an open, free and interactive music system can be integrated in a public space and empower its users to reclaim their space, supported by original empirical data.

We report on the findings of a multi-stage and mixed methods data collection process, including ethnographic observation, questionnaires, and structured and semi-structured interviews with users of the system, non-users (present when the system was in use) as well as with residents in the neighborhood to study the process of assessment and engagement with the Musikiosk (Sections 4 and 5). Section 5 includes an overview of use and perception of Parc du Portugal, a review of the Musikiosk engagement process and an overview of the perceived effects of Musikiosk over the park. For an overview of the quantitative results from questionnaires on the effects of Musikiosk on users and non-users, viz. reference (4).

2.   MUSIC, BEHAVIOR AND TECHNOLOGY IN PUBLIC SPACES

The rise of ubiquitous computing technologies, the subsequent miniaturization of portable devices and widespread access to the Internet have lead to changes in how users engage with their public spaces (5). Some researchers argue that such mobile devices extend the personal space into the public realm and encourage the creation of "personal islands" in public spaces, with some considering that they challenge what exactly is public about public spaces (reference (1), p. 31) while others emphasize the need to reevaluate the minimal conditions of publicness altogether (6). This holds particularly true in relation to mobile music listening, where the Walkman of yesteryear could help the user tread the fine line between the "here and there, […] what [s]he hears and what [s]he travels through" (Ibid. p. 329-330), technologically mediated by their headphones. However, Bull (5) argues that, while seemingly an asocial and solitary exercise, mobile music listening is "deeply social" (p. 133), as users remain embedded in their surroundings, both aesthetically and behaviorally, even though their demeanor might challenge existing norms of social behavior. By listening to the music of their choice and blocking out or attempting to dominate the sound of the city, users of such devices employ strategies of " 'control' or […] management of [their own] experience" (Ibid., p. 134-135).

The role of music as a social force and its influence on personal and collective behavior have been studied extensively, in relation to shopping behaviors as well as on sociability and loitering behaviors in public spaces (e.g. 7, 2, 8, 5, 9, 10). If music has such a strong, documented impact over behavior and can be used as a tool to control one's experience, control over music in a public context becomes "a source of social power" (reference (2), p. 20). With the rise of novel forms of musical experience as described above, facilitated by various technological changes, centrally set musical policies are being challenged and users are increasingly being granted the possibility to participate in the process of musical production and consumption in public spaces (among others, see reference (11) for the Jukola

system, the Fono DJ table[6] and "Play Me, I'm Yours!" artwork that included the installation of street pianos[7]).

Even if technologies designed to be interactive, open and to allow users to control aspects of their environment exist in public settings, a key aspect to be considered is *engagement*. What convinces users to engage with technologies altogether, what keeps them entertained or intrigued, why do they stop using the technology and what convinces them to try it again? In the field of Information Science, *engagement* is defined as "the quality of user experiences with technology that is characterized by challenge, aesthetic and sensory appeal, feedback, novelty, interactivity, perceived control and time, awareness, motivation, interest and affect." (reference (3), p. 949). O'Brien and Toms (Ibid.) outline a systematic process approach to research engagement, defined by four stages: point of engagement, engagement, disengagement and re-engagement. If we analyze, as DeNora (2) suggests, music consumption as a process, we can apply the four stages of engagement with interactive technologies to researching how users of public spaces engage with interactive musical technologies in their spaces.

Given also the well-documented relationship between music and identity (viz. e.g. reference (12)), should users decide to engage with such musical technologies, they are able to utilize their spaces in innovative ways and share their music with others in the space. They are thus encouraged to engage in processes that affirm their identity and belonging (8). In this public manifestation of identity, users engage in *responsible listening* practices (13); a combination of internal needs (e.g. desire to impress friends or to listen to music) and external considerations (e.g. presence of others, noise regulations) mediate a user's choice of music and even their decision to engage altogether with interactive technologies.

3. THE DESIGN OF MUSIKIOSK

Montreal by-laws, adopted at a neighborhood level, prohibit the playing of any type of amplified music in a large array of public spaces including the street, parks and other green spaces[8]. That does not mean that public spaces are devoid of music; music from shops and other indoor and outdoor commercial ventures shape the soundscape of streets, illustrating the fact that currently, public spaces are mostly shaped by commercial and governmental interests and less by urban dwellers themselves (1).

In this context, Musikiosk was the result of a collaborative effort between university and city partners to develop an interactive and self-regulated system that allowed users themselves to transform and shape their soundscapes and, through it, their public spaces. Conceived as a soundscape intervention, Musikiosk was installed in the gazebo of Parc du Portugal, an urban pocket park in Montreal, for two months in the summer of 2015. The park is one of the few parks in Montreal with a gazebo structure and it is situated in a lively neighborhood off the busy commercial street of Saint Laurent. The gazebo in the park provided an adequate structure for the installation of Musikiosk due to the closed form of the kiosk that protected the installation and its visitors from sun, rain or wind. It also contained the sound quite well, limiting its propagation in the park and the disruption of the lives of nearby residents; the output of the system was barely audible in other parts of the park.

Musikiosk allowed people to bring their own sounds into the public realm by providing an open, unsupervised connection to an outdoor speaker system that was free to use. Users could connect to Musikiosk with any device equipped with an audio jack, including MP3 players, cellular phones as well as some musical instruments.

The device's custom technology included the development of sound level calculations to automatically adjust playback levels to be appropriate based on the time-of-day, automatic system logs for the researchers to monitor usage frequencies, and automatic power down during predetermined nighttime hours as agreed with the city (14).

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[6] Fono DJ table. Information available online at:
http://www.theverge.com/2014/4/9/5596238/fono-dj-table-is-solar-powered-for-parks. Accessed May 5th 2016
[7] "Play Me, I'm Yours" artwork. Information available online at: http://www.streetpianos.com/. Accessed May 4th 2016
[8] Official Website of the Plateau de Mont Royal borough – section "Environment et salubrité – Pollution". In French. Available online at
http://www1.ville.montreal.qc.ca/banque311/content/le-plateau-mont-royal-%E2%80%93-bruit. Accessed May 1st 2016.

4. METHODOLOGY

We began by conducting observations and questionnaires in Parc du Portugal 10 days before the installation to understand the patterns of daily use of the park over a range of times of day and weather conditions. The patterns of use of the park were observed in a systematic manner, to document the activities that users perform in the park on an everyday basis as well as the groups of recurrent users and their profile.

During the intervention phase, we asked users of the system and non-users (present in the park while the system was in use) to complete questionnaires combining open and closed ended questions on their perception of the park overall, their evaluation of their soundscape as well as their opinion on the system and its appropriateness for the park. This yielded 30 completed questionnaires with users of the system and 56 with non-users. Given the bilingual nature of Montreal, questionnaires both in English and French. In this paper, we report only on responses to a set of the questions in the questionnaire i.e. those focused specifically on the Musikiosk. We continued with systematic observations of the park to observe whether there were any noticeable changes in the dynamic of the park due to the installation of the Musikiosk.

We also completed ethnographic observations during special events that the research team organized to increase the visibility of Musikiosk in the neighborhood; they took place on Tuesdays, starting from 5PM. We focused on observing how users engaged with the system and others present, how they negotiated the use of Musikiosk, how other users of the park reacted to the system and what was the overall dynamic of the park during the events.

Ten in-depth interviews with users of the system (in English) were conducted. A few months after the system was taken down, we completed four interviews with residents living in the vicinity of the park in which Musikiosk was installed (in French). One of the interviewed residents used Musikiosk herself and in her interview, we also addressed questions related to her experience of the system. The interviews were transcribed and coded by a bilingual researcher and subjected to content and discourse analyses.

5. FINDINGS

5.1 Parc du Portugal

Systematic observation of the park, before and after the installation of the Musikiosk system has led to different ways of defining the park, based on its patterns of use and its different users (15).

First, as a *neighbourhood space*, it attracted different groups of frequent users, including: a group of Portuguese elderly users, various-sized groups of employees from businesses nearby observed mostly around lunchtime (between 11:30 am and 2:30 pm), users with a lower socio-economic status (homeless), lingering on benches throughout the day and seeking shelter in the Musikiosk gazebo at night, and other frequent users, including individuals and pairs observed in different occasions in the park, usually in the same time frames (late afternoon, early evening). Most of these users performed activities requiring social interaction (mostly talking, either standing or sitting on a bench), either in pairs or in groups of different sizes, usually taking place in the late afternoon throughout early and late evening. A small number of frequent users engaged in solitary activities (e.g. reading, "people-watching", sometimes sleeping). These also were scattered throughout the day, with a higher frequency in the late afternoon and early evening. The frequent users linger for long periods of time in the park, coming and going in different moments of time, but giving it an overall dynamic feel.

Second, it functioned as a *hiatus space*, due to its proximity to Saint Laurent, with its businesses during the day and nightlife during the evening/night, as well as being situated right behind a bus stop on a popular bus line. The park hosted a number of users that linger for shorter periods of time throughout the day, performing both solitary and socially interactive activities, using the park as break to e.g. wait for the bus, wait for friends, have a cigarette, etc. Users of different ages and both genders performed these types of activities and they were fairly well distributed throughout the day whereas during the evening (e.g. after 7PM) it was mostly youngsters, solitary but also in pairs or groups, using the park for temporary activities like having a cigarette, a drink, a phone call or a conversation.

Third, the park was also a *circulation space*, again due to the proximity to Saint Laurent but also due to its proximity to a more residential neighborhood. A high number of people were observed crossing the park in their everyday trajectories, both on foot and on bikes, alone or with others.

The systematic observations were combined with the responses of Musikiosk users on their

evaluation and perception of the park, to provide a holistic understand of Parc du Portugal. Particularly for users who were not familiar with or frequent users of the park and who visited it mostly to try the Musikiosk system, it was generally assessed as an unwelcoming neighborhood park, not very convivial and somewhat intimidating. One user comments: "I feel like there's a little bit of cliques here and there, and that you feel like you're interrupting something when you enter the park from the main entrance, because it doesn't feel like there's regulars who do see newbies coming in" (M2). The non-users that were approached in the park had a more utilitarian approach to the park, as the majority of respondents stated that they used the park due to its location, including its proximity to their home, their workplace or to the bars on Saint Laurent. The activities they describe as engaging are consistent with the findings of the systematic observations for the time frames when the questionnaires were completed; a large number of users of the space refer to having lunch, resting or spending time with friends.

5.2   Musikiosk engagement process

We structure the analysis of the process of music consumption mirroring the process of engagement described in Section 2, considering the point of engagement, the engagement itself, the point of disengagement and reengagement (actual or hypothetical). We analyzed the written data along a number of topics that were salient in the responses of the respondents: communication, interaction, sharing, self-policing (which we connected to "responsible listening") and identity. Issues like behavior, engagement and control are also discussed, in relation to the aforementioned topics, to reflect also on the users' overall assessment of Musikiosk as well as to see how they touch upon their attitude and perception of the park itself, both usually (for those who have used the park before) and after the Musikiosk experience.

5.2.1 Point of engagement

While over half of those answering to questionnaires and interviews were invited to test the system by the research team, their decision to engage with Musikiosk was still dependent on their expectations from the system.

Musikiosk was associated for a majority of respondents with the idea of sharing of music and listening music *together*. The act of sharing was the biggest factor in convincing users to engage: "it's cool to listen to music with people in a park" (M5). Another user was more outspoken on her reasons: "Not sure that if I just came here to read my book and I turn on the music, that I will actually enjoy the experience more. It's really a matter of this being a social experience of sharing music" (M2). One user emphasized that the sharing aspect of Musikiosk is also a key element that can convince others to engage, by the power of example; "if [Musikiosk] is just a thing [in the park], people might not touch it as much, if they don't understand there's something going on. […] like you want to have something that brings people in, then they call their friends, they tell two people who tell two people [etc.]" (M6)

The sociability of the experience was outlined by more than half of respondents, who mentioned playing their musical choices for their friends or those joining them at the time. One user considered Musikiosk to give him an: "opportunity to be outside & listen to music among friends, instead of going to a bar" (MQ24, originally in French. Author's translation).

The other reasons cited for using the system stroke a relative balance between social arguments, like meeting friends, and personal arguments, including curiosity, the novelty of the system as well as the desire to "listen to good music in a park and to be able to decide what I play" (MQ14, originally in French. Author's translation). One user's explanation for why she did *not* engage with the system in one point stood out: She mentioned she had visited the park before but failed to use Musikiosk on that occasion because: "[I felt] people come together and enjoy the quiet [in the park], it seems like they were enjoying the silence and the quietness." (M2). What made her *not* engage was the ambiance of the park at the time and the lack of suitability of music as an addition to that situation. We expect such extreme forms of responsible listening to be more often and potentially drive some users to decide against engaging with the system altogether due to their perception of the park and its expected rules of public conduct.

More generally, the decision to engage depended on the extraversion of users i.e. how comfortable they were in interacting with others and publicly affirming their identity through their music choices. One user confessed: "I think if [my friend] wasn't there, I wouldn't do that, I wouldn't feel […] comfortable enough just to approach a bunch of people and unplug their stuff or ask somebody […] 'can I change the music?'" (M7)". If users do find themselves alone in the park, the less extraverted

ones are still willing to engage with the system, provided there were no people to share their experience with: "If there was nobody, I would just play whatever is playing on my iPod and just feel, I don't know, more relaxed. If there was nobody, I would definitely use it" (M7).

5.2.2 Engagement

When users decided to engage with the system, they displayed forms of responsible listening, describing first their internal doubts or questions on their choice of music. One user reminisced: "[I was asking myself] 'What should I put [on]?', 'What would fit this kind of situation?' " (M7). In deciding how to negotiate between the internal needs and the external constraints, two users (M2 and M8) outline the criteria they used to select the music that they considered was suitable for playing. One of them considered the genre of music, that, in their perception, was "universally appreciated" (M2) thus adequate for a public space setting (also considering the type of users of the space), deciding in the end to play "very soft, non-aggressive classical music". The second user (M8) confessed that while he had a wide selection of genres in his device, when choosing one of them, he took into consideration those using the park at that moment, as they would have to share his musical experience. It appears that the issue of responsible listening is intimately related to how users connected with their impromptu audience. He stated that "I admit I had heavy metal stuff that I like on my MP3 player and I thought of playing that stuff but […] not everybody likes to hear that […] people […] learn to be more considerate of what the space is being intended to be used for […] Music is often a group experience too." (M8). These statements confirm Haake's (2010) findings on responsible listening patterns as being situated at the intersection of the external and internal realm that influence the choice of the listener: first, the *perceived social norms in public spaces* (external constraints), and second, the user's *identity* (internal constraints).

First, users expect others to understand that public spaces exist, among other things, for sharing, negotiation and responsibility. M8 joked: "I wanted to play something that would show how awesome my music tastes were, but also be something that a lot of people would enjoy and dance to". While the open nature of the device was a concern for one resident (R2) and two users (M7 and M1), the other users of the system were appreciative of the distribution of control over the system among users, rather than imposed by the developers of Musikiosk or the city itself. One user comments: "go for it [Musikiosk], have fun, do whatever, as long as they understand there's rules there, don't be mean and loud and obnoxious cause there are people who live around it, but generally, live and let live, right?" (M6). Some argued that the democratic choice of music is even more justified as the system is installed in a public space: "You cannot be here all the time to kind of control who comes and who goes. […] [People] would have to comply with the same regulations that you have in the neighborhood […] It's a public space so whoever is here in the streets should be able to use it." (M7). Another user continues: "I feel like it's such a strong message, giving power to those who use this park, because in a sense, you give a tool, and you – I mean, there are limitations to that tool, but you tell people 'use it' and 'enjoy it' and it inspires people. […] it makes it much more dynamic between the different types of people that use it. I'm really for that idea of good incentives, like being positive instead of negative and saying "you can't do this, you can't do that", just giving a tool to someone and being like 'do what you want with it, we trust you', it's nice." (M10).

Second, responsible listening is also connected to identity i.e. users' own musical persona and their affirmation of identity, whether it is aligned with expected social norms or not. This topic is also related to the democratic choice of music in the public space, as one user concluded: "if somebody likes their rap, their pop music, that the rest of the population doesn't appreciate, they can still use it, it's freedom of speech" (M2).

The reactions of users validate (or not) users' musical choices or their ability to "read the crowd" and, by extension, their musical identity that they shared with those present. While most users failed to see any reactions from the others in the space, some concluded that "they really didn't mind. Because they were just continuing to do what they were doing [..]" (M1). The ones that did observe positive reactions were enthusiastic in their responses, even reporting on having interacted and communicated with the others in the space. Five users (R1, M3, M6, M7, M9) describe how they enjoyed observing others overtly appreciating their choice by dancing. One of them remembers: "actually there was one moment like one song, people started to dance and I was like 'okay!' " (M7).

5.2.3 Disengagement

Once the users felt their experience with the Musikiosk ran its course, they decided to disengage. Some users offered details on why they disengaged with the system, most of them citing time constraints or the fact that they stopped by Musikiosk only to play a few songs or show the system to a friend, while on the way to somewhere else. The most common reason for disengaging with the system was related to the positive affect that they accomplished what they had wanted to. They related this feeling again to sharing and interaction, in the sense to allow other users to engage with Musikiosk and share their music. Users described a number of situations in which they showed their willingness and interest in communicating with other users of the space to explain and promote Musikiosk – in a sense "passing on the baton" so others can also make use of the system. "We started to talk with some youngsters that were drinking in their corner, it's not people that I would have approached *a priori*, but we decided to explain to them what to do, because they were listening to their own music but did not realize that they could make use of [Musikiosk] for that." (R1, originally in French. Author's translation). Furthermore, due to the usability of the system, users expressed confidence in explaining the instructions for using Musikiosk to newcomers

The use of the Musikiosk lead to impromptu interactions between users of the system and other users of the park, the latter being either interested in the music played or in the system itself. One user describes such a situation, where he was approached in two consecutive moments by strangers motivated by interest in first, his music choice and second, in Musikiosk: "a few people that were walking by came up and asked what the track was. One person wrote it down and then two people that were sitting on a nearby bench, came up and were like 'what is this? How do we make it work?' " (M3). One user summarizes this potential for interaction of Musikiosk by stating: "if anything, [Musikiosk] creates more opportunities for chance encounters or just moments of inspiration." (M10).

Such interactions became obvious during the events organized by the research team; in such gatherings, Musikiosk became a platform for musical exchange, either with other users they were familiar to or with other users of the park invited to engage with the system. They negotiated the musical choices they considered suitable for the situation and they remained respectful towards each other's musical selections; all songs were played through until the very end, at sound levels that allowed for discussions and chatter inside the gazebo. Musikiosk thus also became a reason for socializing; those attending rarely came along, often bringing along friends, drinks and snacks, remaining even after having engaged with the system and interacting with other users of the park.

5.2.4 Re-engagement

When asked to reflect on whether and why they would engage with the system on another occasion, there was consensus among users. The Musikiosk experience allowed them to relate to their park and their music in novel ways. The relationship between the private and the public realms became blurred: their private music became a public affirmation of their identity, shared with others in the space, and their public space became more private and intimate. One user stated: "when [the music] is only here, it really feels like it is a public space, but at the same time, it's intimate." (M7). Most continue by describing hypothetical situations on how they would use Musikiosk. What they describe is rarely exceptional or markedly different from their normal patterns of use of public spaces in general: "[I could suggest to my friends that] we could just grab coffee and come here and listen to some music" (M7). Another respondent states: "Well, it is fun, I mean, come on, you sit there and instead of just sitting there, awkwardly staring at people, you kind of just sit there, awkwardly staring and them with music. And sometimes they talk back to you and you go 'hey, I'll show you!' " (M6). These statements show how users find new ways of appropriating their daily spaces through the opportunities offered by Musikiosk and how mundane activities can be improved with adding music that can be shared with friends or, to a lesser extent, enjoyed alone.

5.3   The effects of the Musikiosk experience

We discussed the overall Musikiosk experience with users, non-users and residents. With users, we focused on how the Musikiosk experience changed their perception and potential future use of the park and whether Musikiosk was appropriate for Parc du Portugal. With non-users and residents we similarly addressed the perceived appropriateness of Musikiosk for the park they were currently using as well as how the existence of such a system could change their use of the park.

While the overall assessment of the Musikiosk system was positive among users and it was unanimously considered appropriate for the park in which it was installed, non-users and residents raised some concerns on the system; a number of non-users considered it "unnecessary", disturbing the "silence" of the park. This could also be a bias due to how our questions were worded; among hearing the phrase "sound system", some users imagined an invasive loudspeaker system that would overpower the ambiance of the[9]. One resident was mostly concerned with the type of users it attracted and with the fact that while the system was shut down overnight, it encouraged lingering behaviors that were disruptive and forbade her from sleeping (R2).

Despite these concerns, users of the system and a large proportion of the non-users considered that a system like the Musikiosk had a positive effect over their perception and enjoyment of the park. This was particularly true for those who were not frequent users of Parc du Portugal and who had initial reservations on its conviviality and friendliness. One user stated that the Musikiosk experience changed their initial impression of the park; "There's a thing there that I have associations with and that my friends would occasionally be at, as opposed to, usually when I use this park before, I'd be by myself and I wouldn't really be talking to anybody" (M9). Another use considered that the change in perception was not only at a personal level, but that Musikiosk had an effect over the dynamism of the park itself: "I do think [Musikiosk] helped [to improve the park's conviviality], it brought people in, definitely. And you know, when there's more people in a park, people tend to want to be in that park too, which is nicer" (M6). In general, users considered that the park became more interactive, dynamic and eventful and that these changes would transform their previous patterns of using the park: either linger longer in the park or use it more frequently, in a more social setting.

Overall, the majority of users and non-users felt Musikiosk provided them with novel ways of interacting with the space; one user states they enjoyed the fact that the system allowed them to appropriate their space (MQ1), another that it permitted him to "bring a piece of yourself to an open space" (MQ8), a third stated it enjoyed "the principle of sharing one's musical tastes" (MQ 13) while a fourth concluded: ""you finally enjoy your own personal music like that, on real speakers, instead of headphones or earbuds, outside" (M8)

The findings from interviews and questionnaires portray a relatively big change in the assessment of the park and indicate that users of the Musikiosk perceive a tangible transformation of the ambiance of the park. These findings are only marginally confirmed by observations. After the Musikiosk system was installed in the gazebo in Parc du Portugal, we continued our systematic observation of the park use; prior to the intervention, observations indicated that the gazebo was rarely used; only a few occurrences had users moving a picnic table in the gazebo and having lunch there. Given that the Musikiosk brought a large number of new users to Parc du Portugal, we focused on two dimension of park usage: changes in the patterns regular users and the patterns of new users.

First, in relation to regular users, as far as it could be observed, they did not change their patterns of use of the park, performing the same activities during the same time frames and with more or less the same frequency. Furthermore, they expressed no visible interest in the Musikiosk system when it was in use; there was no visible reaction either to the music played through the system or to the groups of people that would sometimes be in the gazebo as part of the events organized by the research team. Particularly in the case of the elderly Portuguese users, the lack of reaction could be related to the position of the Musikiosk system in relation to their "usual spot": while the system was installed in the gazebo in the northeastern part the park, their usual spot was in the southwestern side, closer to Saint Laurent, where the music played through the system was not audible. The questionnaires (4) confirmed minimal disruption on non-users in general, though, if noticed, evaluations were generally positive.

Second, in relation to new users, Musikiosk increased the levels of use of the spontaneous use of the gazebo on a daily basis, mostly by youngsters, in small groups, who used the system for hours at a time. The youngsters engaged in lingering behaviors, mostly talking to each other and listening to the music played, sitting either in the gazebo or on its steps, maximizing their listening experience. In addition, the events organized by the research team introduced new users to the Musikiosk system and increased the number of users performing socially interactive activities in the early and late evening in the park.

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[9] An example of this misunderstanding was the image accompanying a blog post on Musikiosk, which presented a digitally altered photograph of the gazebo completely overtaken by giant speakers. Blog post and image available online at:
http://www.mtlblog.com/2015/08/montreal-park-is-getting-a-massive-sound-system-you-can-control-with-your-phone/. Accessed May 16th 2016.

Among these, a number of tourists (families and some older users) were particularly interested in the system, as it allowed them to interact with new forms of technology as well as with other users of the park, creating, in their words, a lasting memory of their trip to Montreal. Among the local users of the Musikiosk, some of the participants to the evenings returned, either as users of the Musikiosk system itself (alone or with a small or large group of people) or simply as users of the park (observed in different occasions e.g. reading on a bench or having lunch). At no point during our observation sessions did we observe any negative reactions to the use of the Musikiosk, either as part of the events organized by the research team or by spontaneous users.

6. CONCLUSIONS

By empowering public space users to connect their mobile devices and other portable music devices to a public output system in a democratic manner, we challenged the alleged privateness of these devices. We instead allowed the creation of "public islands" of music, shared and managed by users, where others can join in and the music becomes both the background for action as well as a subject of communication and interaction with the public space. Users' mobile devices became devices for collective listening and Musikiosk, the technological embodiment of distribution of control: users could select and play their own music, but within limits, agreed upon together with the city officials, on sound levels and opening times. By increasing the degree to which users of spaces participate in the process of music production and consumption in a park, new opportunities and patterns of engaging with the space emerged, with users describing the park as friendlier and more convivial, and expressing more interest in lingering activities through which to appropriate the park. Musikiosk ultimately encouraged a feeling of temporary ownership of the space and a certain degree of complicity with the other users of the space, through the sharing of music as a social experience.

Overall, Musikiosk had a small effect over the acoustic environment of the park and the general dynamics of the park, partially due to the limited range of the playback system. Nonetheless, its local effects, restricted to the users of the gazebo (and those sitting on the benches around it) are more powerful, as users linger when they are using the system, interact and communicate in a friendly manner while exchanging music or impressions and seem to have an overall positive experience.

Through Musikiosk, we called into question the norms related to mobile listening in public spaces as well as to acceptable behaviors in the public realm. Musikiosk is not only an innovative system from a technological perspective, but also socio-politically. Through its use and positive evaluation by users, Musikiosk supports them in subverting the social norms and regulations set in place to monitor and control public spaces and the behaviors of their users. Furthermore, Musikiosk puts into question the notion of publicness and the role of technologies in the "future" of public spaces.

In this paper, we empirically showed how a public system that some could fear disruptive due to its open and free nature could encourage users to engage in responsible listening behaviors and share their music with others, thus leading to more dynamic and diverse patterns of public space use as well as higher levels of enjoyment of the space.

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