Urban gamification during lockdown and social isolation - from the teddy bear challenge to window expeditions

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Abstract

The first wave of the COVID-19 pandemic that affected many cities around the world during the spring and summer 2020 was often met with regulations requiring people to lockdown, to quarantine or to respect social distancing. Urban spaces often became off-limits and depopulated, filled with borders isolating people confined at home. Nevertheless, in these trying times new forms of urban gamification surfaced, allowing citizens to engage their surroundings playfully, to connect with others and to escape these dire situations. In this paper, we propose an overview of the many playful activities that emerged in the cities hit by the pandemic, organised according to the urban borders they engage (windows, balconies, rooftops). We then focus on how several borders can be engaged by the same play practice, through a gamified application called *Window Expeditions*, which aims at participatory data generation, while addressing some of the issues related to isolation and reduced mobility of its users. In the conclusions, we discuss the potential role of urban gamification during the pandemic and, in particular, its ability to comfort, connect, increase curiosity and encourage exploration.

Keywords

Urban Gamification, COVID-19, Borders, Liminal Spaces

1. Introduction

Urban spaces afford various playful practices, ranging from street sports to fairs and location-based games. This is not a new phenomenon: playful practices have been hosted in urban spaces throughout history, since they are essential parts of urban life and often necessary for the functioning of society (cf. Bakhtin's carnivalesque [1]).

With current advances in urbanisation and increasing digitalisation of urban infrastructure, city planners are gravitating towards emerging frameworks such as Smart Cities. These frameworks often lack social components; academic literature therefore proposes balancing the cold technocracy of Smart Cities by using urban technologies as a way of introducing playful elements, ultimately moving towards the idea of Playable Cities [2].

Urban play has indeed the ability to gamify cities as it is able to promote a playful attitude [3] in the way we experience public spaces. Urban gamification is a recent formulation in the larger field of gamification that encompasses all practices that transform and resemantise the spaces of a city in a playful way [4]. Well known examples of citizens making use of playfulness in an urban setting to transform and reappropriate them include *parkour* [5][6] flash-mobs [7], pride parades [8] and various forms of pervasive play such as location based games (e.g. Pokémon Go [9] and its hybrid uses [10]). Urban play sometimes also acquires a political dimension. Issues such as the privatisation of public space, the uprooting of citizens due to the development of Information and Communication Technologies, dynamics of gentrification, and the creation of ghettos based on race or income, challenge what Lefebvre [11] famously called "the right to the city" of their inhabitants. Some suggest that a possible solution to these issues could be based on playfulness and games, which would help ensure citizens' rights by promoting the creation of a Ludic City [12]. But what happens when the very public spaces that can afford and host play suddenly become off-limits? How can urban play be expressed in a time of quarantine, lockdown and self-isolation? This paper aims to answer these research questions by investigating the new forms that urban gamification took during the lockdown related to the COVID-19 pandemic. In particular, we offer an overview of emerging playful activities in urban spaces throughout the spring and summer 2020 to shed light on the mutations it entailed. In order to do so we first propose some keys of interpretation that should allow us to describe these new forms of urban gamification. Further, we propose a semiotically-informed overview of several examples collected from around the world. Finally, we present and discuss *Window Expeditions* - a gamified application (created independently from this study) dedicated to reducing perceived isolation by encouraging the contributing and sharing of landscape descriptions. Our

analysis of the application will allow us to understand how several borders can be engaged simultaneously by a single playful application.

2. Urban borders and liminal spaces

Cities can be understood as wholes - they have specific traits, features, characters - but are simultaneously a conglomerate of objects of varying scales such as neighborhoods, buildings, street grids, urban furniture, vehicles and other infrastructure [13]. Cities are therefore striated spaces [14] that is, they are spaces morphologically organised by interior structures, limits and borders.

We cross many of these borders in our everyday lives: they are often porous spaces that might go unnoticed. However, the COVID-19 pandemic changed the nature of many of these spaces. As the virus travels with and within citizens, many cities and nations adopted regulatory strategies making border crossing harder by reinforcing the striated nature of urban spaces. In other words, bona fide borders (meaning borders that emerge naturally from a physical discontinuity (cf. [15]), often also become fiat borders (administrative or socially constructed borders, imposed on the real world, but without a physical identity other than that emerging through behaviour). The morphological fragmentation of urban spaces thus gave rise to mental and behavioural fragmentation. In many cities more or less intrusive forms of lockdown were instated, greatly altering people's daily mobility. People were forced to stay inside or to only travel through urban spaces when absolutely necessary, reinforcing the borders between inside and outside, between private and public space. In addition, the few people allowed outside reinforced the borders around their bodies: they wore different kinds of protective items such as masks, face shields and gloves.

Even though the circulation of individuals was hindered in hopes of combating the spread of the virus, the circulation of meaning was not equally impeded. We observed that urban gamification appeared to crystallise exactly around these borders. Whilst entailing a separation by definition, these borders also became new (or renewed) spaces of play during the pandemic - and therefore spaces to meet or interface with others.

According to Lotman [16], borders should be considered spaces of translation and of communication between different domains. They delineate spaces that are culturally and symbolically peripheric, but that are at the same time often very creative and innovative. Human settlements, according to the Russian semiotician - whether archaic villages or ideal Renaissance and Enlightenment city plans - are often isomorphic with the structure of the cosmos of their culture [16]. The centre reflects the

centre of their symbolic universe, presenting the most important administrative and religious buildings, whose centrality reflects their position in their respective society. The peripheral regions of the city on the other hand represent chaos, an upside-down world, inhabited by "monsters". In European medieval cities for example, the miller, the executioner and sometimes the blacksmith, who were perceived as linked in some way to infernal powers, were relegated to the outskirts of settlements. Today, similar segregating tendencies can be observed with immigrants, minorities or lower classes, also sometimes considered as "peripheral" people [16].

Lotman's conceptualisation of borders as spaces of translation is particularly interesting when dealing with urban play during a pandemic. While regulated and reduced mobility led to a reinforcement of existing borders or to an emergence of new ones, borders became one of the main points of contact between inside and outside, between private and public spaces. The fact that these borders can assume many shapes was reflected in the way in which architectonic features such as windows and balconies became the main analogue spaces to socialise with others and, at the same time, the centre of many playful practices (from singing on balconies to displaying teddy bears in windows). These borders were thus not only points of contact, but also "peripheral" spaces whose users were often creative and innovative.

Anthropologically, urban borders can be considered liminal spaces, a perspective that is complementary to that of Lotman. Liminality describes spaces, times and situations that "are betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremonial (sic)" [17, p. 94]. Liminal spaces are, by definition, border spaces (from the Latin word *limen*) and of in-between-ness, where indeterminacy reigns. Considering urban borders as liminal spaces has two main advantages for our approach. First, liminal spaces have a lot in common with playgrounds, since they can be seen as "magic circles" [18] and therefore as spaces particularly prone to host play, which thrives in indeterminacy [19]. Second, the state of precariousness and in-between-ness experienced during the beginning of the COVID-19 outbreak, being suspended between an "old normal" that is irremediably lost and a "new normal" that is still difficult to imagine, is also an experience of liminality. These two considerations reinforce our hypothesis that during the lockdown and self-isolation caused by COVID-19 the many borders crossing a city were ideal hosts for playfulness. On the one hand, the pandemic reinforced and hardened these borders, while simultaneously increasing their liminality because of the situation's indeterminacy. On the other hand, the liminal nature of these borders is precisely what makes them particularly susceptible to host playful practices - something that happened fairly often during lockdown and quarantine, as we shall see

in the next section.

3. An overview of urban gamification during lockdown

Many of the playful practices of urban gamification that occurred in the spring and summer 2020 took place exactly around the urban borders we have just described. The majority of examples presented in this paper were not directly experienced by the authors due to COVID-19 related laws and regulations. However, seeing the popularity of introducing playfulness as a means of coping with quarantine and isolation, many of the presented examples enjoyed widespread popularity in online communities such as *Imgur*, *9gag*, social networks or in messaging applications such as *WhatsApp* and *Telegram*, being recorded, shared, imitated, reimagined and reshared.

This overview, does not aim to be exhaustive nor neutral, but it is rather an attempt to exemplify the variety and complexity of the many faces that urban gamification took during moments of lockdown, quarantine, and self-isolation. To systematise the many playful instances that we have collected, we focus on the borders they inhabit and have crystallised around. With this we aim to highlight the variety of borders that have been subject to urban gamification and to explore how the same borders can be exploited in various playful ways.

3.1. Balconies

Balconies are extensions of the private into the public space, often literally suspended above the latter. This makes balconies especially interesting borders for people to engage with during lockdown, since they offer some form of escape from the confinement of isolation at the same time as they facilitate social interactions. Balconies were particularly prominent liminal spaces in Mediterranean countries such as Italy and Spain hosting several playful activities such as singing, playing music, DJ sessions and improvised concerts. These practices were popularised and shared on online platforms and were soon imitated and reimagined in many cities and contexts. These practices were not only captured and shared but reproduced as parodies where cultural or geographical differences were used as comic elements when trying to imitate the Southern Europe balcony singers. Examples were found featuring German[1] and British[2] singers who were met with mockery and insults, or Norwegian balconies completely covered in snow[3].

In some cases the creative ad-hoc nature of hosting these individual events transitioned to a more organised

practice where people would participate in a shared event at predefined times. In Finland, for example, every Friday at 6pm people would blast the famous techno song "Sandstorm" by Darude from their balconies (or sometimes gardens) and dance in goofy or funny ways, highlighting the performative side of these playful practices[4]. The central importance acquired by balconies during COVID-19 is reflected by the way they were used as "meeting places" during significant national events and celebrations. For the anniversary of Italian liberation from Fascism, for example, a Nationwide flash-mob (as the organisers called it, evoking a playful performance often used for political protest [7]) was organised where citizens sang the resistance song *Bella Ciao* together, each from their individual balconies. During the pandemic, hence, balconies became spaces to connect with others and to reinforce a feeling of fellowship and community.

3.2. Windows

In contrast to balconies, windows physically separate the private spaces of home from the outside world. The act of looking outside one's window requires the observer to be inside (and, vice versa, the act of peeking inside someone's home through a window requires the observer to be outside said space). This highlights the bidirectional characteristics of windows affording looking outside as well as inside. Windows are often bridges between public and private spaces and especially the affordance of looking inside private spaces adds a degree of intimacy to windows. This intimate nature of windows is highlighted by elements obscuring visibility (e.g. curtains, blinds, mirrored glass) as well as metaphorical uses of the term (e.g. "window to the soul"). Open windows during the pandemic often allowed for playful activities similar to those that were observed on balconies. We will, however, here focus on how the see-through features of windows have been exploited for playful purposes.

There are several ways of engaging playfully with a window. In fact, even just looking through a window - which can be a very ordinary activity that is not playful *per se* - can become playful if approached with a certain attitude. A young guest of the BBC radio program The Listening Project[5], for example, explains how, during lockdown, looking through a window became one of his favourite activities, something he would do every day for half an hour, a moment of self reflection (almost a static *flânerie*), but also of exploration and even of interaction with nature.

Playing with the windows themselves - considered as interfaces between private and public space - is nothing new. Dutch windows for example, are traditionally large, uncovered, and feature elaborate playful decorations [20].

During the first wave of the pandemic, the Teddy Bear Challenge (in Finnish, Etsi Nalle) made a similar use of windows to afford a playful experience of the city during social distancing. The Teddy Bear Challenge was purposely created in Finland (and, to some extent, spread to Germany, the US, New Zealand and Australia) as a way of cheering children up, as they were particularly affected by the situation [21].

The idea behind this playful activity was quite simple: people would display teddy bears at their windows, and whoever is strolling through the city would have to find as many as possible. This can be described as a form of toyification, as by placing toys in places that are not traditionally reserved for them gives birth to a feeling of general playfulness [22].

A coordinated lighting of windows was also often used for playful purposes. Again, this is nothing new since light spectacles and even video games[6] have been displayed using windows in some way. During lockdown lit windows were used to create shapes such as hearts in Las Vegas[7] and teddy bears in Helsinki[8], as well as to create light shows as in Wuhan[9] or, in a more bottom up way, in many Italian cities[10].

3.3. Rooftops

Rooftops are less obvious playful spaces than windows and balconies. In many cases they are shared by all inhabitants of a building, making them semi-private spaces. For these reasons they are quite peripheral spaces, even in normal times. Nevertheless, during the COVID-19 outbreak, there have been many instances where rooftops became playgrounds.

Several videos of people playing sports on rooftops were found online. In Finale Ligure, in Italy, two young girls played a tennis match from their respective rooftops, 15 metres above the ground and across an 8 metre gap. The video attracted enough attention to be featured in a popular TV show, where professional player Fabio Fognini promised to meet the two young players after the pandemic[11]. Another popular video shot in the Dominican Republic[12] shows a few young people passing around a baseball ball from the top of different buildings. In both cases, it is the morphological configuration of rooftops, which on the one hand enforces social distancing (by physically separating people on different rooftops), while on the other hand affords a larger space to act within, turning these spaces into possible playgrounds.

The fact that rooftops were scarcely populated spaces also during the pandemic, acquiring almost an intimate dimension, allowed other forms of playful interaction to emerge, such as the highly mediatised COVID-19 romance in New York[13]. The story, in brief, included a man seeing a woman dancing alone on a rooftop, an exchange of messages from rooftop to rooftop via drones, and a date in which the man wore an inflatable transparent ball. The difficulty of communication between rooftops, then, became the basis for inventing new, playful ways of contacting each other using technological gadgets.

3.4. Bodies

While human bodies are not necessarily considered urban spaces, they feature clear borders that separate them from the city and delimit a private and intimate sphere. These borders, such as our skin and clothing, were strongly reinforced during the pandemic. The necessity of preventing the virus from spreading was met with the use of numerous items meant to protect these borders, such as masks, gloves, face shields and suits. The shortage of some of these items was often addressed with improvised and playful solutions such as people using bras as masks and water tanks as face shields.

However, the borders of the human body are also, traditionally, a space of writing, often used as a way to respond to a need of self-expression. This brought about both the creation of fashionable masks[14] as well as of playful costumes as forms of protection. People dressed as Darth Vader or wearing inflatable T-Rex suits were spotted in several cities, highlighting the carnivalesque spirit [1] that imbues liminality.

Costumes were another means to challenge enforced lockdown regulations. In Spain, the lockdown regulations permitted dog owners to take them outside. This sparked creative approaches for challenging these uneven borders, as people walking plush dogs[15] or wearing a dog costume[16]. However, the defiance of these acts, and the fact that they seemed to mock the seriousness of the pandemic were met by a harsh response in both cases.

Costumes were also used to challenge the loosening of lockdown measures by trying to scare people away or to remind them of the seriousness of the situation. In Florida, a lawyer dressed up as the Grim Reaper and walked along reopened beaches to stand up against a government he believed was not taking the situation seriously enough[17]. Similarly, in Hellesdon, UK, a teenager was spotted walking around in a Plague Doctor costume, with all probability he was trying to make a similar

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[6]https://bit.ly/UrbGamLock-Tetris
[7]https://bit.ly/UrbGamLock-VegasLight
[8]https://bit.ly/UrbGamLock-HelLight
[9]https://bit.ly/UrbGamLock-WuhanLight
[10]https://bit.ly/UrbGamLock-ItaLight
[11]https://bit.ly/UrbGamLock-RoofTennis
[12]https://bit.ly/UrbGamLock-RoofBall

[13]https://bit.ly/UrbGamLock-RoofRomance
[14]https://bit.ly/UrbGamLock-FashionMask
[15]https://bit.ly/UrbGamLock-Plush
[16]https://bit.ly/UrbGamLock-Costume
[17]https://bit.ly/UrbGamLock-GrimReaper

point[18].

3.5. Public spaces

During lockdown, many public spaces became off-limits and people were only permitted to leave their home with a valid, certified reason. Additionally, several people in cities without lockdown decided to self-isolate, again avoiding public spaces. This required a restructuring of the playful activities that generally take place in public spaces. For example, Niantic modified the rules of the popular AR pervasive game *Pokémon Go*, as to make it playable from home. Niantic did not want to encourage users to violate the lockdown, nor did they want users to stop playing the game, therefore they readjusted the game so to allow some forms of remote play and interaction. Rule changes involved an increase in the spawning rates of Pokémon, less limitations for trading remotely with friends, and an extension of minimum distance needed to participate in Gym raids. Players were also able to obtain in-game resource packs through daily specials compensating the impossibility to gather resources by walking through the city as well as remote passes to participate in raids. The social interaction features, which Niantic introduced in the last years, were repurposed so as to be available without co-presence.

Other games requiring simultaneous presence in urban spaces, such as larp games (live-action role playing games) were often cancelled. However, new forms of larping evolved taking the new situation into account. *The Monster We Don't Know*, for example, is an international web-based game that involves parallel sessions and combines traditional larping with solo players and players that play online. The creator (interviewed for this article) calls her game an "urban platform", and claims that it was a way to respond to the needs of players who were eager to connect, escape, experience, and to have fun in a way that wasn't stressful.

While games that traditionally took place in the urban spaces were redirected or adapted, new playful activities started to take place in the deserted cities. One of the most evident examples was the toyification of statues: anonymous players decorated statues in several cities making them wear surgical masks or holding rolls of toilet paper - a playful mockery of the shortages of this particular item in the early phases of the pandemic.

3.6. Parks and playful spaces

As we have seen, liminal spaces often became spaces to play in, especially when borders were reinforced by the pandemic. What about spaces such as parks and stadiums which, in normal times, are meant to host playful events but which, during the pandemic, were partially or completely closed? These normally accessible spaces were suddenly positioned outside the borders - i.e. outside the spaces that are freely accessible to citizens - and became unavailable to most. This, however, did not stop them to be used in playful ways, although different from those originally intended.

Some of these spaces were populated by replicas of people. This happened mostly in stadiums in which sporting events were permitted, but where live audiences were banned. In Taiwan, an empty Baseball stadium was filled with an audience made of cardboard cut-outs and drum-playing robots [19], while a South Korean Soccer team received a heavy fine for populating their stadium with well-dressed sex dolls[20].

In some cases, municipalities took measures to ensure that playgrounds would not be used during the lockdown. The San Clemente Skatepark, for example, was filled with sand to dissuade skaters from using it and instead stay at home. However, by filling the skate park with sand, new playful affordances were introduced and the skate park was immediately exploited by dirt bikers, who reappropriated the space for their own use[21].

3.7. Security announcements

Communication always involves some form of *contact* through a channel [23]. During the pandemic, the authorities privileged forms of communication from a certain distance for safety reason, thus reducing contact with the public to the minimum. In these messages, playfulness was also commonly employed. Several of these initiatives from many different countries were filmed and spread quickly online. In Spain volunteers of the Spanish Civil Protection used music and dances to cheer up the residents[22]. In the city of Noreña, the police read a "letter by Pikachu" to entertain children isolated at home[23]. Similarly, in one of her speeches New Zealand's Prime Minister Jacinda Ardern addressed her country's children, reassuring them that the Tooth Fairy and Easter Bunny were considered as essential workers, although they might have had issues getting to every household. She then acknowledged the fact that many windows in the country display teddy bears in their front windows and suggests adding an Easter egg too, so as to organise an "egg-hunt" for the neighbourhood kids[24]. Many other initiatives made use of the Dancing Pallbearers meme[25], where a Ghanese tradition is used to mock risky

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[18]https://bit.ly/UrbGamLock-PlagueDoctor

[19]https://bit.ly/UrbGamLock-RobotAudience
[20]https://bit.ly/UrbGamLock-DollAudience
[21]https://bit.ly/UrbGamLock-SandPark
[22]https://bit.ly/UrbGamLock-AnnDance
[23]https://bit.ly/UrbGamLock-AnnPika
[24]https://bit.ly/UrbGamLock-Bunny
[25]https://bit.ly/UrbGamLock-Meme

behaviours, in order to urge the citizens to stay at home. In Brazil billboards appeared depicting the pallbearers and a slogan saying "Stay at home or dance with us"[26]. In Cuddalore, in India, the police prepared an advertisement video in which actors recreated the dance where agents are holding a motorcyclist on a stretcher[27]. In the city of Buenaventura, in Colombia, the police recreated the scene live in the city streets, with four agents dancing with a coffin while playing the meme's music[28].

3.8. Digital urban spaces

While most urban borders were reinforced during lockdown, quarantine and self-isolation, the need to communicate from a distance, working from home and distance learning resulted in an increased use of virtual spaces to interact and work with people including teaching and learning. If, as Meyrowitz claimed [24], media influences our sense of place, the opposite also holds true: changes in our way of using space influence how we use digital media.

What is particularly interesting is that this border between analogue and digital worlds had also become a liminal space of play. Examples include cheeky backgrounds for online meetings and videos or screenshots of humorous or unexpected situations happening in such meetings and shared online[29]. Playfulness and games have also been used as ways of bringing people together, to create a sense of urbanity and collectiveness in online spaces. Simple pop-quizzes or basic games such as *Skribbl* became a way of creating moments of conviviality and connection[30]. Finally, several digital spaces originally created as games started hosting a number of educational activities such as the free educational version of *Minecraft*, that was downloaded 50 million times during the pandemic[31] or work meetings around a virtual campfire in *Red Dead Redemption 2*[32]. Digital technologies with their ability to host human interactions in virtual spaces arguably became a new space of urban gamification.

While all the outlined borders are gamified according to their specific features, every individual practice has to be viewed in a holistic way, as part of the larger trend of playing with borders during the pandemic. Every playful activity must be understood as contextualised by all the others, reinforcing each other and orienting the interpretations of the citizens towards a playful dimension of reality (directing the citizens attention towards the play affordances of the urban spaces). A single practice,

furthermore, can involve several borders and spaces, making use of their different affordances and morphological features.

4. Window Expeditions- Borders in a gamified application

The *Window Expeditions* application was developed by the second author of this paper as a direct reaction to the COVID-19 pandemic. The application revolves around the collection of natural language descriptions of the environment, as experienced by participants from their windows and balconies, during (and after) lockdown. It replaced plans for a location-based outdoor game, which were suspended as it became increasingly difficult to justify sending participants to explore and experience - often off limits - public spaces. As such, *Window Expeditions* provides an ideal example of the bona fide and fiat borders introduced above. *Window Expeditions* was not conceived to test the ideas proposed above, but discussions at the GamiFIN2020 conference led directly to the collaboration reported in this paper. In what follows we discuss firstly the implementation and aims of the application, before delving into some of the data collected to explore how borders were manifested in *Window Expeditions*.

4.1. Application overview

The application *Window Expeditions*[33] was developed and implemented as part of an ongoing interdisciplinary project in landscape perception and preference research. The project aims to investigate how landscapes are perceived and imbued with meaning, how landscapes change over time and how they influence our behaviour and well-being. The primary goals of the application are twofold: 1) to be able to produce user generated data whilst keeping the safety of participants and reduced mobility due to the pandemic in mind and 2) to reduce the feeling of isolation by exploring and sharing the world still available to us. The application was designed and tested as a gamified crowdsourcing project allowing users to contribute data and to explore other users' contributions while offering a quiz feature. The application was tested with a selected group of 20 users who were asked to give feedback for further development. The users were selected by the developers and contacted through private channels to ensure a heterogeneous group of testers in two languages. In total, 19 of the invitees registered (10 German speaking & 9 English speaking; ages: 11 yrs - 78 yrs; 8 male 11 female). In the following, we present a walk-through of how these users were able to engage with the application

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[26]https://bit.ly/UrbGamLock-AnnDanceWithUs
[27]https://bit.ly/UrbGamLock-AnnMoto
[28]https://bit.ly/UrbGamLock-AnnMusic
[29]https://bit.ly/UrbGamLock-Backgrounds
[30]https://bit.ly/UrbGamLock-VirtualPub
[31]https://bit.ly/UrbGamLock-Minecraft
[32]https://bit.ly/UrbGamLock-RDR2

[33]The version of the 10.06.2020 was analysed in this paper. Current version: www.windowexpeditions.com

and link specific features to the borders they interact with.

Due to the nature of the application, in the design phase particular attention was paid to data privacy, an increasingly important issue in academic research projects. Particular attention was given to informing the users about data protection efforts and transparency on data usage. After granting free and informed consent, the first step for a user is to register with the application and provide limited demographic information such as age and gender. All data is encrypted and stored on a server in Zurich, Switzerland to ensure data privacy and compliance with data protection regulations. Once registered, users can choose to either write and share short descriptions of the world outside their window or balcony or to take part in a quiz where they try to guess the physical location of spaces described in other users' descriptions.

Users who choose to contribute landscape descriptions are asked to first set and confirm their current location on an interactive online map [34]. The application transforms their exact coordinates to a hexagonal grid cell to ensure that exact locations are never transmitted or saved, thus preserving privacy through obfuscation. After providing their general location, users are prompted to "take in" their surroundings from a balcony or window until a countdown has finished. They are then presented with a free text input field and a short informational text. The application incentivises users to write more than mere bullet points or lists of landscape features by clearly stating that they should write whole sentences and by allowing any use of natural language. After a successful submission, users are rewarded with points. Users are only permitted to submit one contribution per day but are also incentivised to contribute on multiple consecutive days through a daily streak system which rewards users with an increasing number of points for each consecutive day they contribute, allowing them to compete for their rank in a leaderboard. Due to the dynamic nature of our surroundings (e.g. weather, seasonal changes, wildlife) consecutive contributions to the application are not mere additions to or edits of previous descriptions, but new and independent contributions. This allows users to explore changes within and between different areas of the world.

Besides contributing landscape descriptions, users can also participate in a quiz. Within the quiz feature users are shown a random user contributed landscape description (e.g. "Üetliberg is green and nice. The sun is reflecting on a big building. There are lots of children outside. They are quite noisy.") for which they must guess the location within a predefined area. The closer the guess to the location of the contribution, the more points are awarded. There is no limitation on how many times a user can participate in the quiz.

Although the application was developed parallel to but independently of the urban gamification overview described above (section 3), the game mechanics still revolve around several of the borders that we have identified as key play spaces during the pandemic, in particular windows and balconies as well as the borders between digital and analogue spaces. The application is clearly a form of urban gamification as it adds a playful element to the way we experience and communicate public spaces. In order to delve further into the aspects of urban gamification during COVID-19 and the use of borders and liminal spaces, we highlight key features of *Window Expeditions* and the borders they interact with, using selected categories described in our overview above.

4.1.1. Windows, Balconies and Rooftops

Window Expeditions successfully turns users' attention to the perceivable world available from home, albeit from afar. Users are encouraged to explore their immediate surroundings from their windows or balconies and communicate what they discover with a textual description. The application thus actively engages with a variety of borders mentioned in the overview. One of the most obvious borders are the bona fide borders of windows affording seeing through. Instead of windows being a physical barrier marking the extent of action possibilities at home during a lockdown or quarantine, the application aims to shift the users' gaze through the transparent yet physical bona fide border of a window towards an environment a user can experience. Similarly, the application encourages users to look at balconies and rooftops not as liminal spaces between new emergent borders, but as look-outs, as places from where the world can be observed. The gamified application thus draws attention away from the negative connotations these newly manifested borders have by emphasising another more enjoyable aspect. Users are invited to "take in" their environment and in doing so may start to discover details and nuances not noticed before. This assumption was confirmed by participants stating that, while using the application, they appreciated bird songs or noticed colours in the landscape that they had not noticed before. These findings are in line with the mentioned BBC interview (cf. section 3.2).

4.1.2. Digital Urban Spaces

The application transcends the borders between physical and digital worlds by having users transform their perceived lived environment into an abstract digital twin consisting of a textual description and a location. Users have to reproduce their surroundings using language allowing them to explore various styles of textual expres-

sion. Since users are given expressive freedom by allowing any form of natural language, the contributed data is extremely heterogeneous, with contributions consisting of between 5 and 303 words. Users not only describe what they see, but they also mention other perceptual dimensions including sounds, smells and memories. The separation between the physical and digital space, between the world outside our windows and that inside the app, offers a Lotmanian border as a space of communication that is also a space of creativity. Players write their descriptions according to the instructions of the game and, by doing so, they need to restructure their perception of the urban spaces. They have to select what they want to describe, which kind of emotions they want to convey, and with what kind of words. This is a true operation of *translation*. The urban spaces are hence not merely reproduced in digital striated spaces but are presented as lived and experienced places. The morphologically organised interior structures of cities are laden with meaning and imbued with personal experiences, even in the digital realm.

4.1.3. Public Spaces

The first wave of COVID-19 changed people's everyday mobility and reduced visits to public spaces and hence, interactions with others. This is where *Window Expeditions* offers a new approach to experiencing public space since it does not encourage players to go outside. Quite the contrary - the application helps them to interact with the public spaces in different ways, namely through their senses (e.g. looking, hearing, smelling etc). If the players' bodies can not access these spaces, their senses are free to wander, to explore and to dwell outside. The application implicitly encourages players to escape their homes and experience "the outside", engaging spaces that would otherwise be off limits. Worth mentioning are the additional borders that emerge between the perceptual dimensions: as opposed to 'sight' the dimensions of 'touch', 'smell' and 'sound' have a considerably shorter range. In other words, 'touch' needs contact with the haptic sensory system (the body of the perceiving individual), 'smell' and 'sound' decrease rapidly with distance (e.g. "listening to the sparrows chirping outside") and are heavily influenced by topography, whereas 'sight' is commonly far-reaching when not obscured (e.g. "it is a steep, thickly wooded hill with a long ridge that dominates the horizon"). The application thus not only interacts with urban borders and liminal spaces in a playful manner, but also sheds light on the various borders and limits of our senses and how these are reproduced in writing. Moreover, as the examples in our overview clearly show, many creative forms of social exchange were introduced during the pandemic (cf. section 3) to reduce the impact of social isolation. This was also observed in *Window Expeditions*.

Not only did exploring other users' contributions afford a motivational incentive to participate, but, in their feedback, users also mentioned a feeling of togetherness and belonging. Inducing a feeling of belonging or being part of a good cause has further been found to increase intrinsic motivation to participate in crowdsourcing and citizen science projects [25] as well as games [26]. Exploring other users' contributions allowed players to escape their own isolation through their imagination. This sort of vicarious traveling, in which users would "experience" urban landscapes through each other's descriptions, was made possible thanks to the narrative infrastructure created for and with the application, and which substituted the off-limits areas of real world public spaces with a creative digital replica.

5. Limitations

The informed overview of playful activities during lockdown and social isolation that we have presented in this paper is obviously not exhaustive. While it would be practically impossible to account for all cases of urban gamification during the first wave of COVID-19, we believe that those presented here are enough to offer a clear idea about how many of these playful strategies insisted exactly on the urban borders reinforced by the pandemic. Maybe change to: We recognise that focusing on urban borders is merely one of the possible approaches of investigating playful practices during lockdown. Future research should therefore not only focus on other forms of play during the extraordinary circumstances of COVID-19, but also explore other means of interpreting this phenomenon. The investigation and exploration of the application *Window Expeditions* is also accompanied by a number of limitations. Despite the fact that one of the authors was involved in the development of the application, the application was not developed to test the ideas regarding urban gamification proposed in this paper. Therefore, this paper does not aim to engage with the design decisions and limitations of the implementation or use of the application. In addition, it should be noted that the application alone is not suited to broadly investigate questions of how applications were gamified during the pandemic. We do however believe that by exploring and analysing the application we can shed light on particularly interesting forms of playful engagement with a selection of mentioned emergent urban borders.

6. Discussion and conclusions

Window Expeditions is an interesting case study as the core gameplay revolves around interacting with a subset of the borders discussed above. The window itself transforms from a mere bona fide border between the inside

and outside world, between private and public spaces, into a main game element affording the perception of the worlds and spaces we have mentioned. Windows, balconies and rooftops suddenly become a way of escaping the constrictions of quarantine, not physically but remotely, for example by gazing or listening. The expedition is therefore both *to* and *through* the window as players engage, interact with, and take in the landscapes available to them from a distance in arguably novel ways. It offers a potentially playful way of engaging with the outside, exploring spaces, taking them in and taming them, while staying safely inside.

Similarly, the contributed landscape descriptions highlight the border between the physical and the digital worlds. Players translate the physical world they perceive and experience during their expedition into a subjective textual representation which is arguably a form of digitisation of the urban space. During gameplay these digitised urban spaces may have become surrogates of the real world. This was quite common during the first wave of the COVID-19 pandemic as digital spaces became places where people met and socialised. In *Window Expeditions*, the quiz provides a form of indirect contact with other players, allowing players to experience the world from other perspectives. The players unable to go outside, become citizens of a hybrid, mixed urban space, that extends to the digital domain and that is composed of a multitude of perceptions of different cities. Even though people lost their "right to the city" through quarantine and isolation, they were able to reappropriate some of their lived everyday landscapes by writing a description about these and guiding the readers inner eye towards subjective nuances.

Our case study differs from many of the presented examples in the overview in that it is not a bottom-up playful activity that has emerged spontaneously from the situation. Rather, it is a deliberate attempt to use playfulness to ease some of the issues of a lockdown while simultaneously testing a novel approach to collecting landscape descriptions. Nonetheless, the application seems to confirm that, during the pandemic, borders were indeed ideal spaces to afford play and to respond to needs of connection, fellowship and self-expression.

The pandemic and the various forms of lockdown it entails sparked several creative and playful approaches of urban gamification. However, we must not forget that the first wave of COVID-19 pandemic not only reinforced bona fide borders, but also intensified the many inequalities that characterise the urban spaces and, while doing so, often created or emphasised fiat borders in the process. Examples include varying housing conditions (having a garden, a larger living space, a balcony, a nice view etc), different working conditions (being able to work from home, being forced to go out, belonging to the essential workers, being able to have a steady income while in

quarantine etc) and the digital divide (owning laptops for each family member, having enough bandwidth etc) which all potentially increase urban segregation and intensify social and economic inequalities. Situations of privilege were amplified and society became more segmented, reinforcing differences instead of removing them. The romanticisation of lockdowns should therefore be critically reflected upon in the light of these inequalities, whether emergent or reinforced. In our overview we have identified a number of playful practices in different contexts. While some practices were clearly only accessible by more fortunate individuals, playfulness became a way of dealing with many issues related to the pandemic, even in poor neighbourhoods. We therefore believe that play and urban gamification have been positive forces during lockdown for a diverse set of people. While the activities themselves and their implementations have varied considerably, they seem to afford new ways of connecting with other people, of escaping the hardships of isolation, of finding comfort in toys or playful objects and of taking in and (re)discovering our surroundings. Urban gamification, whether emergent and bottom-up or purposefully designed, has clearly been a beneficial force in these extraordinary times, helping adults and children cope with regulations and ever-changing borders as well as tending to some of their basic social needs.

While we are writing these lines, several countries are in a new lockdown as a reaction to the second wave of the pandemic. While social isolation and distancing bring along similar issues as observed in the first wave, the playful interactions with urban borders and spaces seem to have decreased or stopped altogether. The sedimentation of the safety practices in a "new normal" seem to have defused the play potential of the situation. The fist wave's lockdowns and quarantines had a *liminal* nature. They presented us with new and unexpected situations to which we did not know how to react. This left considerable space for playfulness, as the latter thrives in indeterminacy and novelty. When the regulations become ordinary, however, the space for play is reduced. Urban play during the first wave of the COVID-19 pandemic, hence, was not only crystallised around urban borders but was also afforded by a temporal border between the old normality before the outbreak, and the new normality of our cohabitation with the virus. Nonetheless, despite having to adapt to new circumstances during the transition to this new normality, we see potential for new forms of urban gamification or the re-imagination of some emergent playful practices to help us settle into this new form of normal and make it friendlier and more human. *Window Expeditions*, for example, has seen a steady increase in activity in the fall of 2020, future research might tell us if this was due to the fact that it offers a means of exploring far away places when travel is restricted and discouraged. While for many of us the transition to this new normal

is challenging and hard, some of the emergent playful activities endured and playfulness can still help us feel creative, connected, and comfort us until the pandemic is over.

Acknowledgments

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