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# LOCATION-BASED MOBILE GAMES FOR PLACE-MAKING

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# ABSTRACT

The main objective of this work is to understand the role that the repetitive use of location-based services, in this case limited to the use of LBMGs, have on people's mobility and their interaction with place-making activities. The main questions I intend to answer in this respect are linked to change in mobility behaviors due to playing these kinds of games, the interpretation of hybrid spaces, and the meaning of the relationship with the places that these players come to daily interact with through these LBMGs. In order to answer these questions I decided to propose to some habitual players of the LBMG Pokèmon Go a series of semi structured walkin interviews in which they were encouraged to play the game in their usual itinerary while I asked them my questions. I later proceeded to transcribe these interviews and to subject them to a hybrid thematic analysis.

# 0. INTRODUCTION

Taking into consideration today's ever-increasing interactions between offline and online mobilities, this work aims to explore location-based mobile games (LBMGs) and their implication for place-making as a multi-faceted approach to planning, designing and managing public spaces.

Mobile applications allow us to find new opportunities to meet and manage our relationships with people and with places, even remotely, and thanks to geolocation we can interact with the places that surround us in new and creative ways. This is especially true for the case of LBMGs. They are based on the location of the user, mostly through the use of the GPS installed in smartphones. The success of this type of pervasive games can be traced back to the way they are able to extend the playground and experience of the game, providing the player another manner to participate in the world around them, which changes our understanding of physical meeting spaces and the role played by public space in contemporary urban environments.

In hybrid (Silva, 2006; Halegoua, 2020), transducted (Kitchin et al, 2014) spaces, which have to take into consideration also codes, softwares and connectivity, physical location is still recognized as a key factor. Mobile communication, for example, has always had to rely in some way on physical infrastructures to be able to work, but while these specific locations in the past could have taken on a marginal role, with the advent of location-based services like LBMGs, they have acquired a new role.

With the popularization of location-based services at large, it is topical to understand what some of the LBMGs users' current practices are and how it is possible to see them through the existing corpus of urban theory, in particular through understanding their role in processes of place-making.

Place-making is a term used to define a long-term process of improving the quality of places, however, it can also be used to describe large-scale urban regeneration transformation projects and activities that can transform the sense of a place in a relatively short time and serve as an attraction for people and new developments. In the context of this work, the focus is on creative and digital "variants" of place-making, in the measure these practices try to engage people in immersive experiences, and recognise the instrumentalised potential of art and of creative solutions.

This work takes into consideration LBMGs because they represent a mainstream example of how people give access to their localization data on a daily basis, and thus offer the opportunity to analyze their movements, even when the movement itself is not the main purpose of the experience they seek through these games.

From the perspective of local development it is relevant to consider how "playful" services and tools have implications in the interactions between public and private infrastructure and how these services can be modeled on local territories and experiences to enhance solutions modeled to specific local needs.

At the center of this work is the desire to investigate how LBMGs contribute to the creation of the city from the players' standpoint, at the level of the spatial and infrastructural interactions they undertake and at the level of interactions with other users. So the broad

research question this work asks can be summarized as *"How do players create and interact with the urban space through their (repetitive) use of LBMGs?"*.

To answer this question after having introduced how the issue has been developed in the relevant literature for the empirical part of my work I will conduct a series of walking interviews with which I will follow some players, selected randomly from dedicated games forums, during their game path. I will take into consideration one game, *Pokémon Go*, while having as a background one of the neighborhoods of Rome, where the walking interviews will take place.

Through semi-structured interviews in which I will follow the path established by the players in the context of their game session, my research is meant to capture the following nuances of the game experience. In particular, the aims of this research are:

- to understand how players transform the way they interact with the city through the lens of the game objectives, in particular in relation to exploring changes in behaviors immediately linked to the experience of playing LBMGs.

  Therefore the first sub-question of research to answer this aim is as follows:
  *"Does the use of LBMGs result in changes in routes and modes of mobility for players?"*

  To (understand) this first point the players interviewed will be asked to reflect on their habits, if they feel like having acquired specific mobility behaviours from playing with LBMGs, and whether they feel playing LBMGs has played an impact on the routes they usually take.

- to understand how players experience the hybrid and transduced spaces, what meanings they give them and how they interpret them . So the research question to answer this aim can be summarized in:
  *"How do offline and online interact in the ludic activity?"*

  In this sense, it will be necessary to interrogate how players understand the offline and online spaces, if they changed their interpretation of spaces, because of the added

layer of meaning, and of their usual interpretation of interactions between online and offline after experiencing the game.

- Connected to this is the aim to acknowledge the relationship that, through playing LBMGs, players come to have with physical space:
  *"Do LBMGs have an impact on players' relation to physical space?"*

  This question refers to asking the players if they have noticed, or actively contributed in, activities somehow related to the games, such as the creation of meeting points due to the influx of people caused by the game or the organization of local initiatives related to them.

To achieve these aims, the thesis will be divided into five chapters.

The first will consist of developing the main concepts and allow a global understanding of the LBMGs phenomenon, from the combination of online and offline spaces, to the role of the city, both as a background and as an integral and integrated part of the gaming experience, to the definitions of mobility data and place-making, through the lens of the urban theories of mobility studies.

To answer the research questions a series of walking interviews to a small sample of players will be carried out, and in the second chapter the method used for the collection of these interviews and data resulting from them will be presented.

The third chapter will present the data collected from those interviews, with a focus on the relation to the research questions.

The fourth chapter will be used to develop the key findings, to interpret them and to draw their implications, while in the fifth and last chapter will be presented the final conclusions of the thesis, in regard to the answers to the initial research questions.

# 1. LBMGs AND THE CITY AS A PLAYGROUND

The premise of this work is to look at how the phenomenon of location-based mobile games (LBMGs) works into affecting day-to-day human mobility and at what role it has into practices of place-making. This can happen in a twofold way, first changing the way people decide to interact with what's around them while engaging with the game, and also by creating occasions to build practices directly connected to the development of places.

To understand the LBMGs influence into daily human mobility and into practices of place-making it is necessary to understand a series of concepts, first of all the framework, for which my research will be mainly influenced by Sheller and Urry's "new mobilities paradigm" (2006).

One of the analytical keys on which my work is based on is the concept of the playable city, which becomes an essential component in LBMGs, not only because we have to take into account how city landscapes have responded to technological advancement, but because it is important to understand cities' stake in being "playful" and what the city represents in the context of play, as it will be addressed in the first part of the chapter.

The chapter will then present, through the lens of the "new mobility paradigm" an overview of digital geography and digital mobilities. First emphasizing the meanings attributed to space and place, and then by framing fundamental aspects through which we can understand LBMGs, like the aspect of time, the act of walking and the positioning of urban geographical and mobility studies in relation to digital technologies and the internet.

Lastly, a key part of this work will be understanding the dynamics of LBMGs, so in the final part of the chapter will be discussed in detail the history and the functionalities of LBMGs and the relation they have with practices of place-making.
For what concern the definition of place-making, which in a broad sense indicates a process of improving the quality of places, the highlight in this work will be on creative and digital "variants" of place-making, in the way these practices try to engage people in immersive experiences (Foth et al, 2015; Schupbach, 2015; Courage et al 2018), and recognise the

instrumentalist potential of art and of creative solutions (Courage et al 2018; Schupbach 2015).

As for its spelling, there are various interpretations of it, and I chose to use its hyphenated spelling because its use is often tied to the description of a socially constructed process (Basaraba, 2021), and it is the closest interpretation of what is the subject of this research. The history and mechanics of a particular game, Pokèmon Go, will also be considered, as this is what my research on the field has been focused on.

## 1.1. The playable city

It is possible to trace historical links between play, games and the city, since one can affirm that urban theories have always been steeped in elements of these practices (De Lange et al, 2015; Chisik et al, 2022, Leorke et al, 2020).

From the Roman concept of "bread and games" ("panem and circenses") to the experiential economy, cities have been thought to be entertainment and fun centers (De Lange, 2015), where the desire for joy and stimulation, the expression of one own agency and the creation of social connection respond to important societal values (Altarriba, et al, 2022).
Today, the city not only results as a place where people can play and exercise and enjoy different forms of entertainment, but also where physical infrastructures for outdoor play can make people interact in a creative way with the space of the city. This happens both in a "structured" way through the use for example of playgrounds or ball court, or in an "unstructured" way, like when subcultural urban practices like skateboarding, or parkour, take place (Chisik et al, 2022; De Lange, 2015; Veeckman et al, 2014).

Most of the views on the various concepts of "playful city" differ from one another, also in term of how integrated to people's life are instances of play, with periods in which games and aspect of play are thought to be childish and frivolous, separated from everyday life, and other in which this connection is exalted. In the last years especially the search for this connection was carried out with in mind the emergence of digital technologies' use in the urban fabric and because of the presumed link between creativity and technological advancement.

Play, in fact, has been often associated with culture generation (De Lange, 2015; 2019) for its peculiarity of providing a chance for hosting change and collaborative thinking, offering occasions to discuss topics through stories and roleplay, elements that are considered necessary in a future of participatory urban culture (Fredericks, 2020).

Particularly in the case of pervasive games like location-based mobile games are, the city has reigned as a cardinal source of inspiration for game designers. In these games, the city represents the playing board, and players can interact with urban landscapes in the unique ways the hybrid physical-digital (Halegoua, 2020), transducted binomial code/space (Kitchin et al, 2014) permits.

While GPS-enabled phones became an essential part of everyday travel, the development and adoption of location-based systems in the early 2000s emphasized social interactions with geocoded information and encouraged reflection on the meaning and relationships ascribed to the presence in places, even within the context of games.

Halegoua (2020) argues that in order to gain a better understanding of digital media, we must approach 'the digital city' by using the lens of understanding place meanings and place creations.
Following David Harvey (2008, 2012) and related scholars, Halegoua defines place-making as the process of creating a "sense of (temporary) permanence" in space and what spatiality entails.

On the basis of the general understanding that geography scholars have, and that will be explained in more detail in later paragraphs, people and things can't be understood as independent from space; in the same fashion, software and their output are to be understood as products of people operating in a set time and space.

This relation is defined by Kitchin and Dodge (2014) as a code/space dyadic relationship, a step deeper into understanding hybrid spaces, and allows one to recognize the moment in which these two elements constitute one another when space is the result of code and that code exists to create specific spatiality, i.e. when a space depends on software-driven technology to function.

Particularly relevant is the notion that in order to constitute a code/space reality a space needs to have the ability to be transduced, to be brought into being and shaped by software-mediated practices, in the case of location-based mobile games, the moment the mobile phone access a wireless network to access the game, it transduces the space the player is at. The nature of the transduction process is entirely reliant on the performances and the interactions of people, it is never fixed, and shifts with place, time and the context in which it happens (Kitchin and Dodge, 2014).

As a consequence the use of digital technology in the form of pervasive games can for example motivate players to investigate a physical, virtual reality, or augmented reality representation of a possible design of their daily surroundings (Nijholt, 2016), as well as it will permits citizens to become creative users and designers of these changes (Nijholt, 2016).

Mattern (2017) poses another interesting analysis to draw on to understand how to relate the space of the city with what happens inside it.

Cities have actually served as media through time, physically manifesting themselves as urban processes and practices. The landscape of the city must be reframed as a mixture of built infrastructure, economies, social practices and technologies, the "substrate" in which spatial relations are produced. The space of the city can't be just understood as a neutral space in which things happen but as a medium of these changes.

Being connected to the internet and implementing technological tools provide more channels in which the public can be addressed, and create an open space in which positive exchanges can happen. In fact, it has been demonstrated (Graham et al, 2019) that internet connectivity can be a helpful tool to provide an opportunity to tap into communities' social capital. By leveraging location-based systems, cities can create interactive experiences that encourage citizens to explore their surroundings and engage with one another in new and exciting ways, with the potential to revolutionize urban life and create more vibrant, connected communities. But these are only tools, and need a more structural approach.

**1.2. Digital geography and mobilities**

In hybrid, transducted spaces, physical location is recognized as a key factor. Mobile communication has always had to count on physical infrastructures in locations to be able to work, but while these specific locations in the past could have worked in marginal roles, with the advent of location-based services, like LBMGs they take on a central role.

An act that Halegoua (2020), following the steps of Doreen Massey (2005), defines as in the act of alway being present and in the state of becoming. While other definitions of place, space and place-making will come up in the paragraph, what I wanted to focus on was the idea of a strategic construction of place, which we find in Halegoua (2020), specifically the way in which people and places that find digital connections can strategically create a place, and the power relations resulting by it.

Places come to be constructed through power relations by a new kind of digital connection that makes it possible for people to communicate within these places in strategic and tactical ways; they are "performative" processes that can be approached by questioning both the final product and the process.

Massey (2005; see also Cresswell, 2013; 2014) reminds us that space is always created and unfinished. She encourages us to consider space as a creative and participatory effort, not only around us but also within us. Space is to be considered not as a static, neutral, or frozen entity, but intertwined with time and thus constantly changing, and evolving, interestingly, she adds, even when we do not occupy it.

The importance of space for Massey derives from the conception of space as the dimension in which we encounter the presence of "the other", and in fact, the characteristics that the author recognizes to space are heterogeneity, relationality and coevalness, intended as recognition and respect in situations of mutual implications.

According to this vision, it is possible to consider space not as an independent entity but as a temporary and unstable coexistence of an array of life trajectories, encounters and negotiations.

Another fundamental author regarding this "experiential perspective" of spaces is Yi-Fu Tuan (1979), which also allows dwelling for a moment on a distinction between two terms that we used in a preponderant way, the geographical distinction between space and place.

For Tuan, and this has become somewhat of a shared knowledge among geographers (Cresswell, 2013), as we assign meaning to a particular space, we make a place out of it. Space is an abstract term, is not a single entity but represents the interaction between the human body and the environment. Place, on the other hand, doesn't strictly refer to location, but takes also into consideration social status, it's a location understood through its social and geographical significance. A place is inhabited, experienced. It is known and constructed. Place refers to the sphere of identification (Tuan, 1979).

Another dimension of place is its view as a variety of "locales" or "settings" (Elliot et al, 2010), that are not necessarily tied to specific locations, as in the case of vehicles or internet cafè, which are both a location in space and a transduced place, in virtue of their role of being a place in which people go to be connected to the internet.

Another important consideration that comes from Agnew (2005), is that places are also defined through "itinerants", such as commuters, migrants or travelers; their mobility is one way to contribute to how places develop and operate.

 Technology has transformed our understanding of both space and place, as the ability to connect with people and places digitally has fundamentally changed how we interact with the world around us.

In recent years, the rapidly growing interest in geographic information systems (GIS), remote sensing, GPS, and digital technologies in general, has increased the importance of space. For instance, by the 1990s it had become clear that GIS was in many ways imposing itself on its users and their ways of thinking (Halegoua, 2020).
Turner (2006) recognized this broader trend in the notion of neogeography, a new vision of the discipline of geography, in which everyone was both a consumer and producer of geographic information, and in which the distinction between expert and amateur was becoming less and less clear. Maps could now be created essentially free of charge to meet needs that were individual and transient, presented through devices as small as a cell phone; they can now directly augment the user's real-time perspective.

As a result, digital geography must be understood as a way of reorganizing the interaction between geography and digital studies, with digitality acting both as an object and as a subject.

In McLean (2020) we find the concept of a "more-than-real" life, in contrast with the mainstream understanding of the digital as not being part of "real life"[1].

To fully understand these implications it is not possible, or sufficient, to talk about monolithic digital or digital geography (McLean, 2020; Hollett, 2017). Many different digital geography scholarships exist, a branch of which concentrates on digital mobility.

One of the main concerns of this scholarship (McLean, 2020) regards how the digital has not erased the importance of space and place in the constitution of mobility systems, practices and experiences.

On the other hand, scholars (McLean, 2020; Blank et al, 2012; Mendoza et al, 2022) have also drawn attention to various ways in which the mediation of digital technologies in mobility practices has accentuated existing social inequalities and created new stratifications, mostly regarding information inequalities , gaps and biases on how the world is represented, concerns about universal accessibility, especially for minorities in the western world, concerning race, gender, class, disability, and because of most structural problems in poorer countries.

Mobility, as one can imagine, has to do with the act of movement, of moving from one location to another.

Being on the move is a core experience of human behavior, though, it was only in recent years that social sciences began recognising the importance of movements of individuals and communities (Cresswell, 2011), as it was starting to be recognized that patterns of mobility blend with information as well. (revise)

Creswell (2014) rationalizes mobility mostly in the context of "three relational moments", the first is understanding mobility at face value, as an objective experience, then comes the

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[1] It is common on internet chatrooms or on social media to use the abbreviation "irl" (in real life) when describing something that has happened in the real world and not on the internet, or to refer to people they encounter physically as "irls", drawing a clear distinction between their internet and real spaces.

understanding that representation of mobility produces meanings, and finally, that mobility is embodied in people's experience of the world.

An important aspect that has to be taken into consideration is that movement comprehends both the elements of time and space and that both these elements can't just be taken for granted, because they are simultaneously the context in which movement (and so mobility) take place and its own product.

Cresswell (2011) even makes the case that in recent discourse and research mobility and movement represent both the centre and margin of modernity, with the way time and space are handled through technological developments and their consequences on people's lives.

Holistically speaking, the field of mobility emerged as a criticism (Cresswell, 2011). It sought to emphasize the centrality of often dismissed systemic movements of people, from work to leisure, to family life and, above all, to question the forces that encourage, block and that are resulting from these movements.

In the early 2000s a "new mobilities paradigm" (Sheller, 2020) emerged, including a rich text of transdisciplinary research, and in their description of it, Sheller and Urry (2006) affirm that moving coexists with a series of other activities, such as specific forms of talk, work, information gathering, or that involve simply being connected. In Sheller and Urry's consideration, this leads to the abandonment of the usual understanding of people only being able to do one thing at a time in a linear order. This vision discards traditional notions of spatiality and scale and linear understanding of time and temporality.

It is through this awareness that Sheller and Urry re-discover new meanings for places. From a fixed spatiality they go for an advanced understanding of places as the result of specific performances that wouldn't know how to exist except by a specific combination of time and place, connections through networks, and of the "systems of differences" implemented by the placement of people, objects, and technologies.

People's lives come to be understood as the result of "various nodes in multiple machines of inhabitation and mobility" (Sheller, Urry 2006, p. 16).

Precisely about this concept of an existing spatio-temporal environment it is possible to consult the previous work of Hägerstrand (1985), who coined the existence of a space-time path in which the people's actions are consumed.

Through his framework it is possible to record, describe and analyze the ongoing changes in today's world, how daily occurrences need to be analyzed from the perspective of their location, in the context of their scheduling and depending on people's daily needs.

From their part, Hägerstrand and the time geographic approach as a whole (Ellegård, 2018) mostly concentrate on demonstrating how these mobilities are often hindered by limitations, which in turn are not the result of choices not independent of space or time.

In this sense, time-geography does not dwell in exercises of predicting which decision will be made, but reveals the possibility or, better, the limitations of the possibility of these decisions.

Most findings (Ellegård, 2018) seem to agree that the use of smart mobile media increases the relevance of "parallel activity", that is the act of conducting online activities in addition to other activities, as in the case of using social media or working on your laptop while commuting. In general, this is the case when online activities are consumed to fill slots of "wasted time" (Ellegård, 2018).

This in particular will be one of the discussion points in relation to LBMGs in the next sections, since it would be interesting to understand how players manage to divide their time, whether they have the impression of "filling a gap" or what their interpretations of leisure time are.

The field of mobility, in its "new paradigm", comes to examine the fundamental role of movement in regard to social institutions and practices (Sheller et al, 2006).

It looks at different modes of movement and analyzes their complex combinations, as it doesn't only study people's physical movements, but also takes into account the physical movement of objects, as well as movement regarding information and communication (Cresswell, 2011; Elliot et al, 2011).

In this perspective, mobilities studies especially highlight how mobility includes complex movements and mooring assemblies and challenges the idea of space as a simple container for social processes (Sheller et al, 2006).

Creswell (2008; 2010) proposes some categories to dissect more specific aspects of mobility, all defined by their own politics and all producing hierarchies in time and place.

For this purpose, mobility is divided into what is described as its constituent parts. They are six and comprehend: motive force, velocity, rhythm, route, experience, and friction. Each one of them answers specific questions and helps us eviscerate the numerous meanings and factors of mobility.

Important consideration has also to be given to the practices of movement, and therefore of mobility. The focus is mostly on walking, since it is the most congenial to LBMGs. As a process, it has been thoroughly examined in the field of mobility (Cresswell, 2014; Silva, 2006; Hjort, 2015), and many are the interpretations of it; some hints have already been shown through de Certeau and Lefebvre.

Some of these interpretation sees walking as the product of places (Middleton, 2011a; 2021;), other research it as it is an ordinary practice of everyday life, and for this reason worthy of interpretations (Middleton, 2018), the action can highlight reflections on walkers, their habits and their behaviours, and it can be the focus of artistic practices. Walking can also be the mode in which the research takes place (Middleton 2021; 2011b), an embodied space to consider and try to answer research questions. Focusing on walking also implies experiencing the physical limits and capacities of places, and coming into contact with socio-economic differences (Middleton et al, 2019). These differences can also be physical or related to other impairments or obstacles, that create room for different interpretations or abilities to move, understand and interact with surroundings (Middleton et al, 2019).

In de Certeau's work we find understandings of pedestrian walks as "tactics", they are translated into a form of political resistance to "higher ups" as city planners and architects. Taking from this, a lot of works relate to the importance of achievements resulting from "walking together" (Middleton, 2021), and questioning what makes a "good pedestrian" (Wunderlich, 2008; Middleton et al, 2019).

Other works instead decide to investigate the "emotional work" (Middleton 2008; 2021; Cresswell, 2006) involved in gaining access by those groups which suffer from frustration, and anxiety and that are stressed due to a mobility system that does not meet their needs or that complicates their daily mobility. Other research (Wunderlich, 2008; Cresswell, 2006; Cresswell et al, 2011; Bull, 2006; 2020; Wunderlich, 2013) focuses on the experiential

aspects of urban walks, to explore the meaning of what actually happens during people's movement and doesn't assumes that all of the human experiences of travelling are the same. Walking practices are important to consider in the way they vary in practices, purposes, speed, and rhythm, and foster more or less creative and more or less critical relationships with urban spaces.

An interesting point that Sheller and Urry make, particularly of relevance for the theme of this paper, is the introduction to inherent entanglements observed between online and offline spaces.
In the new paradigm, these two systems of online and offline are shown to be extremely interwoven, to the point that individuals can even come to exist beyond just their bodies, leaving traces of themselves in the cyberspace/informational space (Sheller and Urry, 2006). As also Hjorth and Pink (2017) point out it is through how these key interactions play into each other that we can effectively consider, reflect, and rethink our mundane and intimate practices and how we dynamically perceive and make "place".

Digital technologies enable new types of content to be produced and shared, through the creation of new microcultures associated with this type of content. They seem to be, nowadays, a fundamental condition of social life.

Mobile maps, not only "turn-by-turn" navigation classic ones, but also all those services that base their engagement on places, such as sites for the review of premises, to find rooms for rent, social media influencer profiles that recommend or that reproduce "enviable" locations, other types of LBMSs, and also LBMGs, are incorporated into everyday life; they shape spatial relationships, influence people's cognitive mapping of urban space and contribute to forming a sense of place.

As for what concerns LBMGs, in a "more-than-real" perspective, they allow users to recognize where they are and what their surroundings offer in terms of goods and services, reconstructing their experience of the urban landscape (McLean, 2020).
These services make for a "smart" mobility (Elliot et al, 2011), a narrative created by each individual about where they have gone, what activities they have done and what services they have consumed. The result is a possibility of change in behaviors and practices of mobility.

But that's not all, through automated geolocation information collection and display through different mapping, or "mapping-adjacent" services, or the creation of geocoding documents of places through cloud-based reviews applications such as Yelp, or similar social media sites, participants are generally celebrated as contributors to influencing the meaning of places and other people's mobility (Halegoua, 2020; Hjort, 2015).

This process is, of course, not free of criticalities, as the mobility of navigation technology users is unconsciously controlled by algorithmic logic and image of space and places owned by third parties, which can end up normalizing the privatization of public space and promote market-oriented attitudes towards urban search (Halegoua, 2020).

## 1.3 The rise of LBMGs

The way in which people can interact with the space around them has radically changed in recent years, from the development of mobile devices to the pervasive use of social networks and gmaes. In particular, attention has been reflected in the interest in the dynamics of those games developed to be not only entertainment, such as the serious and pervasive games and the increasingly marked gamification of processes. The spreading of smartphones equipped with GPS since the late 90's and early 00's, the use of internet connectivity and the inclusion of sensors, made it possible to change the way users experience space, especially through gaming activities.

One important characteristic that smartphones have, the reason for their never-ending popularity is connectivity, which refers to the ability of the device to access the internet or to connect and communicate with other devices and be able to exchange information.

Another important aspect of the online experience is social network services. They mainly consist of various users, who interact through the creation of a profile and social links.

This is an important aspect, because it also permits the introduction of social games, a type of online game in which the user plays, typically with other players through social networks. Social games are usually developed both as browser games and as mobile games, which are, after all, one of the many pieces that led to the development of more complex game dynamics

such as those of location-based games (Huang et al, 2018; McGonigal, 2010; Hunicke et al, 2004).

When the first mobile phones came to be they were referred to as cellular phones. This term, "cellular" allude to the fact these devices could communicate, through voice calls, thanks to exchanged signals between a base station and a mobile station of a specific cell (a specific covered area individuated by a larger geographical area) (Križanović, 2023). But mobile phones have come a great way since those times.

The first-ever smartphone, or better the first attempt at smartphones as we know them today, was the 1993 IBM prototype "Simon" that in addition to doing voice calls could send an email. However, it is with the 2002 BlackBerry "5810" that the modern smartphone was born. And, at last, it was with the 2007 Apple iPhone that the standard modern mobile phone equipped with a multitouch screen has come to be (Križanović, 2023).

Other than the integration of accessing the internet through mobile phones, or smartphones, groundbreaking developments have been the introduction of the use of built-in GPS and also the ability to install a myriad of applications, through mobile app stores, like the Apple Store and Google Play.

Geolocation is the process through which an electronic device can be associated via latitude and longitude coordinates to its geographic position so that certain information can be associated with a specific point on the Earth's surface (Milner, 2016).

In relation to internet connectivity, having access to geolocalization features emphasize the dynamism of the information shared, the possibility to know people's locations, and also their opinion and feelings about places.

Geolocation, especially when integrated with the smartphone, can be easily considered as one of the most revolutionary fields of development in the social and economic field. Mobile phones can benefit from three systems in order to access the geolocalization features, namely, integrated GPS devices, the use of the IP address (Internet protocol) assigned to the device by the ISP (Internet service provider) and the data relating to the telephone cell to which the device is attached (Shell, 2014; Goodchild 2007; Li et al, 2020; Ruijer et al, 2020).

GPS stands for Global Positioning System. It is a civil satellite positioning and navigation system operated by the United States government and is freely accessible to anyone using a GPS receiver device. Through a dedicated satellite network of artificial satellites in orbit, the system provides mobile terminals or GPS receivers with information on geographical and time coordinates; the localization is made possible thanks to the transmission of a radio signal by the satellite and through the processing of these received signals by the receiver. The current degree of accuracy is of the order of meters (Shell, 2014; Milner, 2016).

At the same time as these types of technologies were developing, the new possibilities they introduced were being exploited by various fields, one of them being the gaming world, with the introduction and evolution of video games and digital games.

The rise of digital games starting from the early 2000s has led in turn to the increase of research in the field of the game industry, also and perhaps especially in relation to other fields such as education, marketing, studies on business dynamics, health, and involvement in the public sector (Raftopoulos et al, 2013; McGonigal, 2011; Hunicke, 2004; Huang et al, 2018; Gordon et al, 2014).

Even if the mass application of these principles on online games is recent, the origin of games for educational purposes, or more generally of games not strictly related to entertainment, is not. It is possible to trace this tradition either to the early 18th century, with war simulations of the Prussian army (Schell, 2008), or to the early 20th century with the creation of board games (Schell, 2008).

To tie this tradition with computer games we have to look at early military computer simulations, in particular, the one that occurred in the 1950s at Johns Hopkins University, in the United States.
It is believed that the term "serious game" was used for the first time by the developer of military computer games Clark Abt in 1971. We refer to a serious game generally when these games have the characteristic of being interactive for one or more players, can be used on any platform, and present characteristics so that is clear they have been developed with not just the goal of being forms of entertainment (Raftopoulos et al, 2013; Huang et al, 2018; Gordon et al, 2014 Sheahan).

Even if LBGs are based on entertainment, the location-based gameplay makes it possible to incorporate other aspects in a unique way through the scale of what Avouris (et al, 2012) have defined "traditions" (ludic, pedagogic, and hybrid) or what others consider the distinction between "serious games" or "entertainment games" (Sheahan, 2021; Marczewski, 2013).

However serious games are not the only genre of games that wants to bring the aspect of play into new contexts, situations, and spaces. We find in fact pervasive games, like LBMGs, but before further examining them a brief evolution of the phenomenon of increased or augmented reality is due to be presented.

The first attempt at increased reality (Carmigani et al, 2011) dates back to the 1950s when Morton Heilig hypothesised "The Cinema of the Future", in which he foresaw an immersive experience for the viewer, who had to be involved with all senses in what they were seeing. In 1955 he described his model which was then prototyped in 1962 as "Sensorma". The first system of augmented reality was born however in 1966 when Sutherland realised a screen prototype mounted on the head of the user from which it could be seen through.

Paul Milgram and Fumio Kishino (1994) introduced the concept of mixed reality, that is, a continuum that goes from the real environment, the physical world, to the virtual one. In this way, the real world is extended and augmented, this model of mixed reality provides a "local virtuality", while extending the virtual world with the physical one, and in the same way, the real world, by sensors interacting and modifying the state of the virtual world.

In 1997 Ronald Azuma wrote the first essay on augmented reality defining it as a combination of real and virtual both structured by 3D techniques, and that are able to interact with each other in real-time. This particular field has become of interest of study also by amateurs, and it is in this context that around the end of the 90s software toolkits were introduced to support its bottom-up development (Carmignani et al, 2011). The most famous of these was the ARToolKit, which was released in 1999. The beginning of the new millennium has so seen the rise of the first outdoor game that supports augmented reality.

ARQuake, created by Bruce Thomas, as an "augmented" version of the popular at the time game Quake[2].

Camera-based systems have since become the basis for augmented reality support technologies (Lavrentievaet al, 2020), and this is the common solution implemented in the development of LBMGs that take advantage of the already present mobile phone cameras (Avouris et al, 2012; Hjort, 2015; Syed et al, 2022). In recent years, AR has also been used in the mobile sector thanks in particular to libraries like Wikitude and Metaio that can provide tools for developers that simplify the approach to augmented reality (Krings et al, 2020; Syed et al, 2022). As time passes the new technologies supporting reality are increasing, as we can see with the development in the field of smart glasses and other wearable devices. Location-based or location-aware games are defined as games that are based on the location of the user, mostly through the GPS installed in the smartphone.

This type of pervasive game is thought to extend the playground and experience of the game, allowing the user to experience the world around them in a different way (Strydom, 2018; Chisik et al, 2022; Courage et al, 2018; Hjort et al, 2014; Firth et al, 2013; Halegoua, 2020; Benford et al, 2005). Through the smartphone's sensor previously encountered it is possible to acquire users' information and enhance and adapt to their context their game experience.

In this way, players are not relegated to the traditional gaming console; the video game is potentially available at any location, at any time, thus making the gaming experience intertwine with the real world. A characteristic of these games is the fact that some of the game activities take place taking into great consideration the surrounding space. Players can be invited to interact with what surrounds them, like being led to move to a specific area, be asked to inspect artifacts, take photos and record videos or sounds. These technologies thus assume a dual function, as they not only transform how we inform our understanding of place in everyday life, but they also reinforce the idea that place is more than a physical geographic location, and is instead a construction of narratives, shared memories, and social practices (Hjort et al, 2014; Firth et al, 2013; Halegoua, 2020).

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[2] It's possible to see it at ARQuake: Interactive Outdoor Augmented Reality Collaboration System
http://www.tinmith.net/arquake/#:~:text=ARQuake%20is%20an%20Augmented%20Reality,inputs%20to%20control%20the%20game.

These games usually are multi-player and often, as we have seen, rely on city streets and urban environments as game settings. There are many types of LBMGs, and a first distinction to make is between mobile games that can be played in many different places and last long periods of time and mobile games that are designed to be played in specific places and times (Hjorth et al, 2014; Hjort, 2015). To the first group belong games like ZombieRun or Pokemon Go, while the second group mostly refer to games developed to enhance the experience of specific venues, like museum itineraries and such.

So, while most of the LBMGs are mainly designed to capitalize on the enjoyment of players, there are circumstances in which there are other implicit outcomes and, often, other explicit goals, i.e. learning certain topics.

LBMGs are implemented considering three basic technologies (Steiniger et al, 2015; Huang et al, 2018). First, the display, through which players can experience the digital counterpart of the game as they move in the context in which they are located. The second important technology is wireless communications, which is all the technology that enables players to communicate with remote servers and with other players, including connectivity technologies as well as Bluetooth and NFC. The last important technology consists of all the sensors that are necessary to capture players' context, like GPS, cameras, microphones and other types of sensors.

The result of the use of these technologies is a strong interaction between real physical space and game activities in virtual space, with the game space being the interpretation of the reaction between these two spaces; and new player experiences are made possible thanks to the fact that the game takes opportunities and poses constraints onto the physical space. It can be argued (Okabe et al, 2005) that mobile phones owe their popularity to their three fundamental roles, they are mobile, they can be "worn", and they are personal/private.

This spatial knowledge, which is able to exploit historical, cultural and landmark contexts is acquired with a variegated range of approaches (Wilken et al, 2014), like crowdsourcing, geographic information system (GIS), user-generated content (UGD) like volunteered geographic information (VGI) or geographic information retrieval.
These can be contributions to maintaining large existing data sets (Lemos et al, 2009; Sengupta et al, 2020), or data mining, that is the extraction of information from big and complex datasets. A difference that is also worth mentioning is that simple data collection

and maintenance considers the citizen as a sensor while acquiring these data through human knowledge considers the citizen positioned as a source of knowledge of their location.

However, often these new approaches are criticized for heterogeneous quality, uncontrolled contexts, lack of validation, and ambivalent impact on privacy (Alavesa et al, 2017; Lu et al, 2021; Loertscher, 2020).
In fact, the implications and risks associated with revealing one's location in real-time become evident as locative media become a familiar feature of mainstream culture, and as location awareness becomes the default setting for many devices. And, it is shown from related research (Yang et al, 2019; Zhang et al, 2020; Zhao et al, 2016; Goodchild et al, 2007; Harris, 2012), there are several approaches used to determine the location of a mobile device: GPS, Wi-Fi, cell tower triangulation, single-cell tower, and IP.

Even if as a whole location-based services have been available on mobile devices since the early 1990s, it has only been in recent years that location features have become common in smartphones, available to people who would not have purchased a dedicated GPS unit in other ways, and in some countries this union of features and services has a much richer history than in others (Okabe et al, 2005; Hjorth et al, 2014).

Much of the first wave of experimentation of this union from the late 1990s onwards took the form of hybrid reality and location-based mobile games (De Souza e Silva 2004; 2006), and much research has been conducted to understand how they question our experience of coexistence in the context of everyday spaces.

One of the ways the playing experience is transduced between the physical and digital game-space is fusion and copresence and can be described as "ambient" (Hjorth et al, 2014; Hjorth et al, 2020).
Indeed, terms like ambience or ambient, often used to describe components like sound and music, are been integrated in discourses surrounding computing and science. The term refers to a style of electronic music used to create a mood or feeling, but generally it is used to describe the diffuse atmosphere of a place.

In Hjorth and Richardson (2020) the concept of ambience has been developed within the context of mobile games, in particular as it is possible to relate the two not just in terms of the

presence of a certain kind of soundtrack but elevating this aspect as an integral part of games finish and quality.

We can consider Botfighters as the first LBMG; a game that worked through SMS, but earlier examples of LBMG as we know them today are games like Pac-Manhattan (US), Proboscis's Urban Tapestries (UK), various Blast Theory projects (UK), Mogi (JP), and Urban Vibe (SK), truly able to combine GPS and mobile internet connections (Hjort et al, 2014).

These first LBMGs were characterized by projects like Blast Theory (Del Gaudio, 2021), which aimed to demonstrate that games and mobile communications research needed to have a more ongoing and continuous debate on what constitutes play boundaries (Hassan et al, 2020). These types of games intentionally challenged and transgressed notions of regular video games, in favour of transforming urban spaces into playful spaces. More recent LBMGs are more concentrated on the aforementioned aspect of ambient play, amplified through practices such as taking and sharing photos through the phone camera.

In addition to the rapid development of mobile gaming applications through the Apple Store and Google Play, mobile games have also expanded to other ways of exploring and experiencing outside the mainstream market (Halegoua, 2020).
The use of location in LBMGs is subjected to the implementation of several game patterns or a combination of those.In Lehman (2012) we find a description of the most used patterns, called Search and Find, Follow the Path, Chase and Catch, and Change of Distance.

The most popular pattern is Search and Find. In the games that use this pattern, players have to find a specific geolocation.This can happen both by giving hints to players and involving an actual search or by guiding players to the location by using some kind of navigation system within the game, requiring players to move to certain coordinates or letting them find some objects or buildings.

Similar to Search and Find there is the Follow the Path pattern. This pattern also requires for players to reach a destination, but the focus is shifted to the way the player is able to reach it.

The Chase and Catch pattern is built so players find themselves hunting a moving object in the game world, which can be another player as in the tag game or a virtual object only existing within the virtual world of the game.

Change of Distance is the less used game pattern between the four. Based on it the players' goal is to either get closer to a location or go further away, as it is just the movement that matters in this scenario.

Other identified sub-genres of LBMGs (Alavesa et al, 2017; Laato et al, 2019) comprehend scavenger hunt/treasure hunt, in which players do various tasks in the real world and report them to others, location-based MMORPG's, that are based real maps, spatially-aware games, that are designed to interact with specific surroundings, geolocation games, that utilizes the users' location in gameplay but doesn't track them, movement, dependent games, based on user movement, and at last miscellaneous games, which do not fall into any category.

To narrow the field for this research it seemed best to identify a single LBMG that was popular enough, both to guarantee participation in the interviews as well as to better focus on the research results, without having to differentiate between different game modes and scopes.

The decision fell on the use of Pokémon Go, both because of its popularity since its release date in 2016 and because of the familiarity of the researcher with the game.

Pokémon Go is a 2016 augmented reality (AR) LBMG. The game is free-to-play. It merges actual environments with a fictional Pokémon dimension created by Satoshi Tajiri (Vdovychenko, 2019) set into a half-real, half-augmented universe inspired by the already existing AR game Ingress.

Pokémon Go uses AR, a type of technology that creates a distinctive experience of the real-world environment merged with graphic and computably programmed elements (Vdovychenko, 2019). The game is constructed so that as players move in the real world, their game avatar counterparts move within the game's map. AR, in the case of Pokémon Go, is used together with the tracking of geographical position as a compulsory feature.

The locative functions are thought to allow for interactivity, as at its core Pokemon Go is constructed in a way that motivates players to walk outside. In-game this dynamic is justified by the fact that by walking outside players, through the AR technology and the

location-based feature, will move the avatar in the game to collect and discover more items through places such as "Pokèstops", which attract wild and rare pokemon, and "Gyms", in which team-based matches are disputed, both usually located at places of interest (Rauschnabel et al, 2017). At first these places were mostly re-purposed from the game Ingress, but from 2019 these also include submission from players (Rauschnabel et al, 2017). While exploring the game, players can survey maps, collect items, and encounter Pokémon, which can only be discovered when the player scans the environment with the camera on a mobile device.

## 1.4 LBMGs, place-making and Pokemon Go

Currently, place-making is a term used to define a long-term process of improving the quality of places. However, it can also be used to describe large-scale urban regeneration projects and activities that can transform the sense of a place in a relatively short time and serve as an attraction for people and new developments. Place-making has a long history in urban studies and urban practices (Basaraba, 2021; Strydom, 2018) and has been understood as that process through which places acquire significance and their worth in a sense, and it involves both planners and residents.

Place-making is a multifaceted and multidisciplinary concept that has been widely studied since the mid-1970s (Strydom et al, 2018; Wyckoff, 2014; Foth, 2015), it was inspired by the work of urban thinkers like Jane Jacobs (1916 - 2006) and William Whyte (1917 - 1999), who studied the relationship between people and places and therefore suggested the concept of place-making, focusing on the impact of the physical and natural environment onsite users' behavior. Other plausible origins of place-making can be traced back to the work of French geographer Lefebvre (1901 - 1991), where his understanding of space and place was put into the perspective of more practical economic application in the analysis of locations (Wyckoff, 2014).

Academic scholars provided a multi-faceted, complex and problematic notion of placemaking. However, there has been a shift in placemaking literature since the 1990s , the concept was introduced to urban decision-making (Strydom, 2018).

As previously stated in this work  the focus will be on creative and digital "variants" of place-making, in the way these practices try to engage people in immersive experiences (Foth

et al, 2015; Schupbach, 2015; Courage et al 2018), and recognise the instrumentalist potential of art and of creative solutions (Courage et al 2018; Schupbach 2015).

First locative-media projects sought to creatively reproduce the city space as a playful place (Halegoua, 2020). Larissa Hjorth and Ingrid Richardson (2017) called this type of place-making "ludic placemaking", as it encourages participants to reconsider what public space means, contrasting the usual divide, in the common perception that still sees the digital space different from "in real life" events, between the meaning of place practices of digital and ludic place-making.

As we have observed, the datafication permits us to perceive places as more intelligible entities through their transformation into data points, but we can't consider the screen of the smartphone as just a frame, but as a sensing object that demands users' attention and allows them to decide where they are in the world through information they can access from their environment (Hjorth, 2015). Though these information (passively received, searched for, and voluntary or involuntary emitted) are never apolitical, as we have seen these are derived from and reveal social and economic privileges (Hjort, 2015; Halegoua, 2020). As all of the data, even geocoded, smart data need cultural and socioeconomic interpretations and analysis.

In Michel de Certeau's work (2011) he examines how individual and group use of social representation and social behaviors can be used by people to restore their autonomy from the dominant economical, political and socio-cultural forces.

He pushed for a conception of everyday life, with an understanding of space as a key category in the history and analysis of cultural practices. de Certeau emphasizes how analyzing users' practices can be considered as a way to grant them agency and counter the traditional production-consumption model. It is a way to make people embrace a practice-based way of looking at the world.

De Certeau attempts to conceptualize various activities as acts of reappropriation, from reading and talking to walking. In particular, he sees walking in the city as a way of affirming individual ways of practicing everyday life, in contrast to metaphors of set routes and paths typically laid out in urban landscapes. It will be important for the rest of this work to recall

this reappropriation of mundane actions such as walking, which as we shall see is a fundamental part of the LBMGs.

Through the types of exploration typical of LBMGs, it is possible to recognize how two functions of space thus creating a new sense of place emerge, the first is the use of the physical space for the virtual game and the second is the relationship between physical and digital space (Lemos, 2009).

In LBMGs players interact and make decisions within the real world. As it is, there isn't a severe separation between the game world and reality, and it results in players having a different perception of the physical space that surrounds them (Halegoua 2020; Pang et al, 2020; Panagoulia 2019; De Souza e Silva et al, 2010; Forth et al, 2015). In Hjorth (et al, 2014) we find that having interacted with a certain scenery during the game experience puts players in a position of perceiving corresponding locations in the physical world in a muted manner since their experience and feelings are informed also by the effects of that scenery on their game adventures.

Much of the research on LBMGs (Licoppe et al, 2006, 2009; de Souza e Silva, 2008; de Souza e Silva & Sutko, 2009; de Souza e Silva, 2009; de Souza e Silva et al, 2009; Hjorth, 2011; Hjorth et al, 2014) points out that the gaming elements of LBMGs are able to influence people relation to physical space. Some researchers, like de Souza e Silva and Hjorth (2009) argue that through these games the added dimension of digital spaces on existing physical spaces transforms their meaning into playful opportunities. Others argue that this element of augmented reality influences players' experience in the way they are encouraged to engage in a new way with physical spaces and their representation.

LBMGs require players a constant negotiation between online and offline spaces, and also the relation between the passage of information from the digital networks to the built environment (Kitchin et al 2014; Hjorth et al, 2014) transforming the way we think about gaming, play, place, and mobility.

As we have seen, mobile internet access through smartphones doesn't prevent us from experiencing what surrounds us, and mostly our engagement with them is sporadic and distracted. Our experience with mobile phones is blended with our daily routines, and our relation with time and space in periods of waiting, mobility, and immobility. We should frame

the relation with LBMGs as vehicular to enable short fragments of play experience that are easily interruptible.

Though, in hybrid spaces, physical location is key. Physical location has always played a role in mobile communication, especially regarding infrastructural concerns, however in earlier applications the space wasn't always relevant to the message of an action, like in the act of calling or sending an e-mail. Studies on LBMGs complicate this relation as they merge the digital with the physical (De Souza e Silva, 2006; Graham et al, 2019; Richardson, 2011; Sengupta et al, 2020; Saunders et al, 2011; Benford et al, 2005; Halegoua 2020; Hjorth et al, 2014).

Elliott and Urry (2011) consider digital technologies contribution in creating a new complex mobilities system that play a huge role in today's chances of encounters and relation . We have seen in previous paragraphs how the concept of mobility offers a way of understanding how being in the world and the environment is dynamic and mutable.

The increasing convergence of mobile, social and location media also requires a re-evaluation of the relationship between mobile media and places and intimacy (Hjorth, 2013).

In relation to LBMGs, we see how camera phone practices and a new form of mobile intimacy, i.e., how different forms of mobility and intimacy charge public and private spaces, online and offline spaces in different locations. This allows for multiple spatial maps, where the geographical and physical space are veiled by an electronic position and an emotional and social presence (Hjort, 2013; Budde et al, 2010; Christin et al, 2010; Winter et al, 2011; Avouris, 2012).

Furthermore, these games may pose a challenge to new modes of processing today society's trust and security (Harvey, 2008; De Lange, 2015; Bowser et al, 2013; Castellani et al, 2013; Gordon et al; 2010; Matyas et al, 2008; Halegoua, 2020). One characteristic of online users is that they can use anonymity to interact safely with each other, while on the other hand these new hybrid-game-spaces are physically seen by other street players and passersby. This means that changing the experience of space through space-based games and hybrid reality games also creates a new type of interaction between players, no longer limited to digital spaces (Halegoua, 2020).

Another effect to take into consideration is the phenomenon of "smart mobs", that is the ability of mobile and wireless devices to organize social networks in public spaces (De Lange, 2015).

To understand the dynamics of mobile social networks, a possibility is to frame it through the lenses of online collective social action, to make sense of player connections to urban spaces, player relationships, and space movement; and it could be useful to understand new applications of existing interfaces like the technology used by hybrid reality games.

Denyer-Simmons's (2016) findings suggest that Pokémon GO can and does enable changes to place and the meaning of place, with its goal of "make and share", not just passively consume. Importantly, Denyer-Simmons's short project, revealed that because Pokémon GO requires users to physically explore their local environments, this new activity brings for positive physical and social experiences that users may have otherwise been unlikely to participate in.

Moreover, on another positive and potentially subversive side, as it has been acknowledged by Hjorth and Richardson (2017) , players can use such games to activate communities of interest in local contexts, organize urban events and public demonstrations of play.

Is it also found in Denyer-Simmons (2016) that Pokémon GO facilitates virtual place-making, as players are finding new meaning in their daily commutes, maybe also exploring new areas of their neighborhood in hopes of discovering rare Pokémon.

However, it must be stated that some challenges are present at the core of this game, which in some way also undermines my research question, due to factor of accessibility and inclusiveness of the place-making process, as much of Pokémon GO's geographic data was based, as cited, on the same database of the game Ingress (Kooragayala and Srini, 2016). Ingress used to allow players to suggest relevant "portal" locations in their areas, but because Ingress players tended to be young, white, English-speaking men, and because Ingress's criteria for identifying a "portal" targeted "cultural points of interest", these "portals" ended up in white-majority neighborhoods (Kooragayala and Srini, 2016). This bias was reflected in the playing experience of Pokémon Go users, with many lamenting it.

Other problems, later on retouched and improved, regarded accessibility issues of Pokémon locations by users with mobility impairment (Kooragayala and Srini, 2016).

## 1.5 Conclusions

In this chapter the literature necessary to contextualize my research has been addressed. The key from which the work starts is that of the new-mobilities-paradigm by Sheller and Urry (2006) for which it is essential an advanced understanding of the sites as a result of specific performance given by a specific combination of time and place, the search for integration between networks and the use of people, objects and technologies. In particular, it is important to understand how this paradigm online and offline are extremely intertwined.

Starting from this concept of places, it was decided to consider a definition of digital place-making as a practice that engages people in immersive experiences and recognizes the instrumental potential of these solutions to improve the quality of places.

The research is included in a context where the game is recognized as a way to cater to people socio-emotional needs and that sees the urban space as one of the protagonists in this exchange, where location-based games use urban spaces as physical landscapes and in which therefore players' ordinary urban practices come to compare with the game alternate realities. Other important concepts that have been presented concern in the context of time-geography the concept of "parallel activities", the act of performing online activities in addition to other activities, and in the context of mobility, the acts and interpretations of walking, particularly as an ordinary practice of daily life, to highlight reflections on walkers, their habits and behaviors and how the field research took place.

Lastly, in regard to the role of LBMGs, we have seen how they thus assume a dual function, as they not only transform how we inform our understanding of place in everyday life, but they also reinforce the idea that place is more than a physical geographic location, and is instead a construction of narratives, shared memories, and social practices.

It was embraced the definition of ludic place-making, as it encourages participants to reconsider what public space means also when mediated by digital practices, especially when we consider the screen of a smartphone, the medium through which LBMGs are happening, as the sensing object that demands users' attention and allows them to decide where they are in the world through information they can access from their environment.

It has emerged how through playing LBMGs it is possible to recognize a new sense of place both because of the use of the physical space for the virtual game and because of the relationship between physical and digital space.

There isn't a severe separation between the game world and reality, and it results in players having a different perception of the physical space that surrounds them, which points out that the gaming elements of LBMGs are able to influence people's relation to physical space.

All of this also emerges through the discussion on Pokémon Go, as it has been demonstrated that playing with it enables changes to place and the meaning of place, with its goal of "make and share", as players are finding new meaning in their daily commutes, also by exploring new areas of their neighborhood.

## 2. METHODOLOGY

The chapter's objective is to show the overall methodological approach of this work. In order to better answer my research question, I chose to use a qualitative research method. I collected the relevant data through individual walking interviews, these were analysed through a thematic analysis.

In the first section of the chapter I will present the main aims of this work and the overall research method, with a justification for the choice I made. Later I will present the data collecting method, correlated with its justification, and finally a paragraph will be reserved to show the analytica method.

### 2.1 Overall research method and justification

As presented in the introduction the broader objective of this thesis is to understand how players create and interact with the urban space through their repetitive use of LBMGs. What I planned to do with my work was to expand the discourse surrounding the applicability of LBMGs into a new understanding of connecting online and offline mobility for place-making purposes.

In particular, I wanted to investigate three specific areas related to that first broader research question, namely: to understand how players transform the way they interact with the city through the lens of the game objectives, in particular in relation to exploring changes in behaviours immediately linked to the experience of playing LBMGs; to understand how players experience these hybrid and transduced spaces, what meanings they give them and how they interpret them; and finally to acknowledge the relationship that, through playing LBMGs, players come to have with the physical space.

In the first chapter I presented the relevant literature to give a global understanding of the phenomenon of the LBMGs, how they came to rise and what are their possible implications in today's society.

Through the literature I consulted I came to understand that Location-Based devices are becoming an increasingly common occurrence, and precisely since they are so widespread

the possibilities are endless for what a coordinated use of online spaces could mean for place-making practices.

The literature was encouraging in presenting a reality in which the use of LBMGs certainly could have contributed in informing habitual players on how to interact in the physical space and on their daily mobilities. It was important, though, to understand the ways in which it manifests for people in their daily lives. For this purpose I chose to conduct a qualitative type of research, as the approach was better suited to grasp the facets of personal meanings and intentions.

Qualitative research is a type of research method that allows one to explore the quality of something, be it relationships, activities, or situations (Gibbs, 2014; Islam et al, 2022; Järvinen et al, 2020). This type of research is meant to answer the "whys" and "hows" (Cleland, 2015) of the research questions. It puts emphasis on the contexts and experiences (Järvinen et al, 2020), areas of inquiry that are difficult to put into numbers and analyse otherwise. Qualitative research is also better suited for areas of inquiry that are unexplored or which may present inadequate or partial theories, to strengthen them (Ritchie, 2003; Islam et al, 2022). It is recommended also for capturing specific issues or problems (Gibbs, 2014; Islam et al, 2022; Järvinen et al, 2020). Finally, it is recommended to use qualitative research if the participants' settings and/or context is important for the research question (Ritchie, 2003; Islam et al, 2022).

In the case of this thesis using qualitative interviews was deemed as better suited to answer the research questions since they mostly aim to investigate the deeper meanings participants extracts from playing LBMGs in relation to their daily mobility and the process of place-making. The setting and the general context of participants' playing route is also essential for the aim of my research. With this study I want to strengthen the theoretic corpus that focuses on the LBMGs in their relation to mobility and place-making, since most studies I found rarely combine the two aspects, and in doing so I wanted to also put the focus on personal experiences. The work will be also set in an Italian context, in which it was hard to find material beforehand. To conclude, it is important to reiterate that as a researcher the utmost cure has been put in attempting to remain aware of one's own biases and experiences for the best success and reliability of this study.

## 2.2 Data collection method, tool and justification

To collect the relevant data individual walking interviews were used. Walking interviews (Kinney, 2017) are used to explore the relationship between oneself and places. This method presupposes that subjects and researchers hold a conversation while walking together.

There are four different formats (Kinney, 2017) to engage in this method, the most used are the docent method, that considers the participant as a docent, an expert, who guides the researcher to specific locations that are significant to them; the participatory walking interview, in which the researcher follows the participant on a walk in a geographical location that the participant has selected because it is related to the investigating topic; bimbling, the practice of not having a clear aim while walking, it is used when the location is not important but the act of walking is important for the participant to articulate and recollect experiences; the fourth method, the one I modelled this study on, it is the go-along method, that occurs when the researcher goes along the participant on an outing that would have occurred even without the interview taking place, and the purpose of this format resides in observing the participant on their usual routines.

In the go-along method the researcher prepares a series of open ended questions, but usually further questions may arise during the interviews.

The walking interview consists in walking together with a participant or a group in a daily journey or in an itinerary chosen for its particular meaning in relation to a research question (Giorgi et al, 2021). The method is thought to help the researcher detect a richer and deeper interpretation of subjects' relation with place (Clark et al, 2010) not always easily accessible. It also plays an important role in balancing subject-researcher power dynamics, since it takes place in a familiar location for the subjects.

The walking interviews also play an important role because of their flexibility, as it prepares the ground for a collaborative conversation (Finlay et al; 2017). The focus on this particular aspect was the reason why the interviews were semi-structured (Giorgi et al, 2021). This latter method is commonly used for qualitative research because it combines a more framework-heavy mindset, that designates a series of questions every subjects is supposed to answer (Giorgi et al, 2021), with a more probe-wise approach, so that it is easier to properly dialogue (Giorgi et al, 2021), to deeper explore with follow-up questions and create connections if there was the need to.

Once I set on Pokémon Go as the game I would use to conduct the interviews, as explained in the previous chapter, the next challenge was to find where to conduct them. After some consideration, the location in which I decided to carry them out was Rome. It was decided based on where I was located at the time I conducted them. It was also taken in consideration that, since Rome is a big city, it would've been easier to come in contact with players possibly located in the same neighbourhood/district, which later turned out to be EUR's district, as it would have been more convenient for maintaining methodological consistency. In this case it has been chosen the habitual route players usually follow in and around the area of EUR's "Parco Centrale del Lago" during their free time, in order to produce spatially grounded and place-specific data (Finlay et al., 2017) useful to better contextualise the results.

To choose the subjects I opted for a purposive sampling (Rai et al, 2015), identifying individuals that could better fit my study. After an initial scouting on dedicated internet forums, I contacted the subject through various Telegrams group chats dedicated to Pokémon Go's players located in the metropolitan area of Rome and, after I finished the first interviews, through word-of-mouth.

All the players I interviewed regularly played Pokemon Go in Rome's suburban EUR district, alone on their daily commute during the week, but mostly in groups during the weekend, when they meet at the EUR's public park "Parco Centrale del Lago". They were all male, of different socio-economical background and ethnicity, without physical disability, who ranged between their mid-twenties to their mid-thirties. Most of them already knew each other, and usually played the game together.

For the purpose of my research I met them individually during the weekends. I proposed to them walking semi-structured interviews while they were playing Pokemon Go, during which I followed the path established by the context of their game session. I ended up collecting 8 walking interviews with subjects that regularly play Pokémon Go in the same area. The interviews lasted for about 35 minutes each.

The sessions were voice-recorded, soon after the interviews were finished time was spent to annotate significant phrases, actions or impressions. In a second moment the interviews were transcribed in their entirety and then translated from Italian to English, trying to preserve the meanings as best as possible.

The use of this type of interview was thought keeping in mind Pokemon Go's game modes, and in general LBMGs'. This modality was chosen because it seemed suitable to put players at ease and because of its relevance for the type of research that it is being presented, since the aim is to investigate the type of spatial relationship that players have and with possible place-making activities. The structure of the walking interviews was composed by four areas of inquiry and:

- a first group of questions was aimed to collect socio-demographic details about respondents' life, like age, gender, occupation, and to contextualise their relation to Pokémon Go, for how much time they were playing, why did they started playing;

- a second group of questions was mostly aimed at understanding the players usual itinerary, where and when they preferred playing, and their understanding of how (and if) the game had influenced their daily mobility;

- a third group of questions was related to player understanding/perception of the use of AR technology and potential changes in interacting with the physical space;

- a fourth group of questions was aimed to explore the dynamics of their involvement in activities connected to the game, in particular about changes caused by their game activity, like creation of events, modification of places, all that could be reconducted to practices of place-making.

The interviews were recorded through the audio-recording application on my smartphone, and while we were walking and the interviews were going on I also annotated on my smartphone note application significant phrases, information and relevant parks' spots as we were passing them. As they were finished I got back into revising my notes, and in a later moment I transcribed them in their entirety.

As a data collection method, the walking interviews are of course not exempt from criticism. The individual interviews were difficult to schedule and, also taking account of the audio-to-written-text process, time consuming. External factors, like the weather or the use of public transport, are also important to take into consideration (Kinney, 2017).

## 2.3 Thematic Analysis, method and justification

After finishing the process of data collection, I conducted thematic analysis (Guest, G. et al, 2012; Braun, V. et al, 2012). As it is often used in qualitative research to analyse text and transcribed interviews, it was the analysis method that could better fit this specific work type of research.

The aim with this method (Vaismoradi et al, 2016; Guest, G. et al, 2012) is to identify models within the data that could help answer the research inquiry. In particular, the thematic analysis provides the identification and the systematic reporting of themes within the data of particular significance for the research. This method usually involves several steps (Guest, G. et al, 2012; Braun, V. et al, 2012) that account for familiarisation with the data, generating initial codes, individuation of themes and final definition and naming of themes (Guest, G. et al, 2012; Braun, V. et al, 2012).

Usually the main approaches to thematic analysis are either inductive or deductive (Proudfoot et al, 2023; Guest, G. et al, 2012). Through the inductive model (Vaismoradi et al, 2016; Proudfoot et al, 2023) the themes emerge directly from the data. This approach is useful when there is no clear theoretical framework, if the topic has not been thoroughly studied or when the goal is to generate new insights. It is also useful the researcher wants to get a broad understanding of the data without imposing categories or preconceived themes. The deductive approach (Proudfoot et al, 2023), on the other hand, begins with a theory or pre-existing structure that guides the analysis and then researches the evidence in the data.

I decided to follow a hybrid thematic analysis method (Swain, 2018 ) that combines the use of deductive and inductive methods of reasoning, as it provides a flexible framework for an "ongoing, organic and iterative" (Swain, 2018) analysis. This method is thought to be more efficient in small qualitative studies, like the one that is being presented here, and I found it particularly suitable because in its hybrid nature it offers a systematic approach that takes into consideration a pre-existing theoretical framework and also lets room for the data to speak for themselves. Since I conducted walking interviews it was a particularly useful method to combine in the final results the new considerations that the subjects spontaneously added to the conversation.

The hybrid thematic analysis process I followed consisted of three phases.

In the first one I created some "a priori" codes based on my research aims, the literary review presented in chapter 1 and following the interview questions. After this, I began to re-familiarize myself with the data, that is the interviews transcriptions and my notes. After this stage I prepared a table in which I could insert the codes and the subject's responses.

In the second stage I read again through the interviews to search for meanings and patterns, adding to the previous a priori codes, new a posterior codes. While I was doing this, and briefly after, I registered all the summarised information on the relevant section on the table,

In the third and final stage I highlighted relevant sections I could use in my report and I combined the codes in the table in bigger themes to better structure the findings.

While I registered all the information I thought were relevant in the table I tried to be careful, not only of my own personal bias, but also of the way in which subjects constructed their meaning as accurately as possible.

## 2.4 Ethics

To ensure that this study followed the appropriate measures regarding ethics and the dynamics and/or challenges associated with it, several considerations were taken into account.

The first that has been taken into consideration concerns the topic of the interview, in particular if participating in the interview could have been exploitative or harmful for the participant (Islam, M. A. et al, 2022; Ritchie, J. et al, 2003). Since the interviews revolved around a somewhat light-hearted theme as the subject's personal experiences with LBMGs, I did consider the safety concern not to be relevant for the matter at hand. My work didn't single out or take in specific consideration fragile or minority groups, and the focus of my work was not perceived harmful in any way to those who had considered participating in the interviews.

Other aspects that were taken into consideration were the confidentiality and clear communication between researcher and participants (Islam, M. A. et al, 2022; Ritchie, J. et al, 2003).

As the walking interviews were done in a public place that was regularly frequented by the subjects, at the first stage of contacting, they were presented with all the specific aspects of the interviews, as in the walking interview method and the intention of recording them. The participants therefore participated in the research after they were approached by the researcher and the research purpose and process were explained to them. The day of the scheduled interviews the subjects were also invited to firm a consent form, as it was explained that their information would remain confidential, and that in the final report the identity of subjects would have been removed, preferring to use pseudonyms in place of real names. None of the participants have shown to have issues with the recording of the interviews.

At the end of the interviews there was a dedicated time in which it was possible for both researcher and subjects to debrief to talk about the interview process and general impressions about the interviews.

The last aspects that were taken into consideration concerned mostly the power-dynamics (Islam, M. A. et al, 2022; Ritchie, J. et al, 2003). Since the topic of the interviews was not considered invasive nor harmful for the subjects, it wasn't particularly challenging to reach a balance, also taking into consideration that while I was knowledgeable in the literature more closely related within my research field, the subjects were knowledgeable about the game dynamics and of course their specific experiences. Moreover, the structure of the interviews was chosen so that they could be more freely participated, and by the subjects' responses I could assess the proposition was well received. Subjects were encouraged to expand on themes with additional considerations, and were also free to ask about the general work purposes, or about any other aspect.

As a researcher, the opportune measures have been put in place to assure the collection of the data, and subsequent presentation, would more closely correspond to the intentions of the subject, to the possible extent.

**2.5 Conclusions**

To better analyse the initial research questions I devised a type of qualitative research that allowed me to realise the experiences of some of LBMGs' players in relation to what I also understood and exposed in the methodological chapter.

From a methodological point of view I relied on an interview model that I had never tried, namely the walking interview. Until now, I had had the opportunity to conduct only "static" or structured interviews. Experimenting with walking interviews allowed me to confront the reality of the LBMG players. Even though it was obviously an occasional experience, walking interviews gave me insights that I could have hardly grasped if I had done interviews in a different, traditional, way.

Through walking interviews, I could visualise the expressions, the movements, the habits of the various players with respect to the place they were frequenting. And I could do so exactly as the game was being played. The players' experience was not just a report, or a representation provided through the narrative of the interviewee. Thanks to the walking side of the interview, I could count on evidence of familiarity with the space and with their reactions.

By the way they moved around in the park it was possible to see that they were used to thinking strategically so they could overcome challenges in the game, it was possible to feel this familiarity also with the surrounding areas, as it also happened to meet some people that the players knew during interviews. My presence during walks also allowed the players not to liquidate questions to a superficial first answer, they were in fact inclined to take the time to answer questions fully, returning to them at a later time, thanks also to the help provided by the visual cues given by the park and their repeated actions in a familiar environment.

These aspects were particularly interesting if compared to my interest in place-making, since they also allowed subjects to bring out considerations that would have been difficult to come out without the concrete support of the space we were visiting and passing through. Listening to the thoughts that they shared with me during and after the interviews, I had the impression that players realised the richness of the kind of interview they were part of. This mode enabled both me and them to become more engaged in the playful experience as well as in the research, and thus allowed a greater openness to dialogue.

As for the method of analysis, I wanted to experiment with this hybrid mode of thematic analysis in order to bring out both the initial considerations that started from the research questions, and this "spontaneity" I found doing interviews. It was a way to mitigate my preconceptions, and also simply to return the experiences the way they were lived. I think that it has been extremely useful to my work and to arrive at the conclusions I have reached, despite the fact that the "a posteriori" codes inserted have been in numbers much lower than the "a priori" ones.

# 3. INTRODUCTION TO THE CASE STUDY

Before diving in into the findings, it would be helpful to understand the physical context in which the interviews took place as well as the role that the Pokémon franchise has had for decades in the collective imagination. This short chapter will explore the context in which players approach the game, namely the physical location of Central Lake EUR Park, and the popularity of the Pokémon franchise.

## 3.1 Eur Central Park of the Lake

As presented in the methodology chapter, the interviews have all taken place in Parco centrale dell'Eur and surrounding area.

Part of the larger Eur Central Park (Image n.1), Eur Central Park of the Lake (Image n.2) is a modern green area in Rome, inside which there is an artificial reservoir located at the separation of the roads of via Cristoforo Colombo, in the EUR district (D'Abate et al, 2022). The artificial lake, designed by Marcello Piacentini and foreseen in the original design of the 1942 Universal Exhibition, was conceived since the birth of the EUR neighborhood in 1936, but it was completed only after the war, on the occasion of the 1960 Olympic Games in Rome (Biancone et al, 2021). The park covers an area of approximately 160000 m², more or less equally divided between the green area and the artificial lake (D'Abate et al, 2022).

## 3.2 The Pokémon franchise

Perhaps more interesting, at least to understand how many players initially came to be interested in the game, is trying to understand the phenomenon of Pokémon.

Pokémon is a franchise created by Satoshi Tajiri and illustrator Ken Sugimori, in the early 1990s the duo came up with the idea for a game called Pocket Monsters and pitched it to Nintendo, spending the next six years working with the famous game maker Shigeru Miyamoto to develop it (Kent, 2010).

In 1996, Pocket Monsters was officially released in a Red and Green version for the Gameboy, in Japan (Kent, 2010). It sold millions of copies, and was later released to the

international public. Since then, seven more generations of Pokémon games have been released, now counting 898 different Pokémon species.

After the success of the first games, the Pokémon Trading Card Game was created, with the first set of cards released in 1996, containing 102 cards (Broomley, 2004).
The cards soon became very popular, and were introduced to the rest of the world.

In 1997 Pokémon was also turned into an animated TV series in Japan. It followed the story of a boy named Satoshi ( after Satoshi Tajiri himself), as he starts a journey to try to become a Pokémon master with his Pokémon companion, Pikachu (Lien, 2014). As it was released worldwide, Satoshi's name was changed to Ash Ketchum. Since then, there have been 23 series of Pokémon, together with 23 animated films, and one live action movie in 2019[3], as proof of the enormous success that Pokémon have had over time and continue to have in pop culture.

In 2016 Pokémon GO was launched. As we have seen in the literature chapter, the game was ground-breaking at the time, as it allowed players to explore their neighborhood in the real world, using satellite and augmented reality technology, to locate, capture, train, and battle virtual Pokémon (Tang, 2017).
The game launched with around 150 species of Pokémon, which had increased to more than 800 in the following years (Stefanello, 2021). When interacting with a Pokémon, players may view it either in AR mode or with a live rendered background.

However Pokémon Go was released to mixed reviews, as even if the concept was praised there were some technical problems, and the game attracted controversy for contributing to accidents, as well for the problems linked to accessibility (Tang, 2017).

Different Pokémon species reside in different areas of the world, for example, Water-type Pokémon are generally found near water, and Snow-type Pokémon are only found during winter in locations with a colder climate. Players earn experience points when they participate in various in-game activities, and they rise in level as they earn experience points (XP), with which they can unlock different types of features. At level five for example

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[3] History of Pokémon, Bullpedia, su Bulbagarden
https://bulbapedia.bulbagarden.net/wiki/History_of_Pok%C3%A9mon

players can battle at a Pokémon Gym and join one of three color-coded teams (yellow, blue or red), factions divided in order to gain control of Gyms and surpass the others.

Through Gyms players can receive in-game items such as Potions and Poké Balls.

There were also introduced Raid Battles which consist of a group of players gathering to confront an over-leveled Pokémon located in a Gym.

During 2020, because of the COVID-19 pandemic restrictions, Niantic implemented new features (that are slowly being taken away) which allowed players to play the game from inside their homes, creating a way for players to not lose interest in the game and to enlarge and engage the playerbase, which actually gave a boost to the fanbase at a time when the game was in extreme decline (Stefanello, 2021). After the pandemic this growth has become stable, even if we probably cannot consider the game as mainstream anymore, with only a part of the loyal audience that continues to play (Stefanello, 2021).
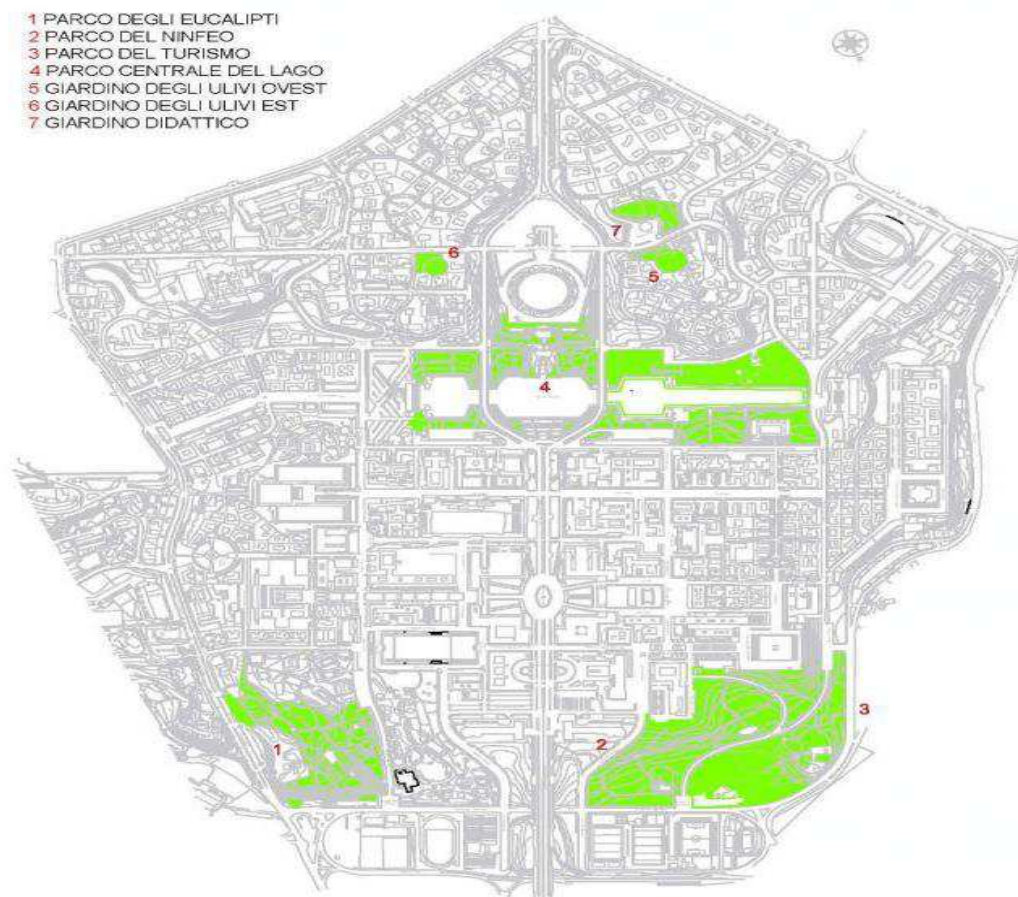


Image n.1.  Map of Eur Central Park from Eur Central Park Official Site
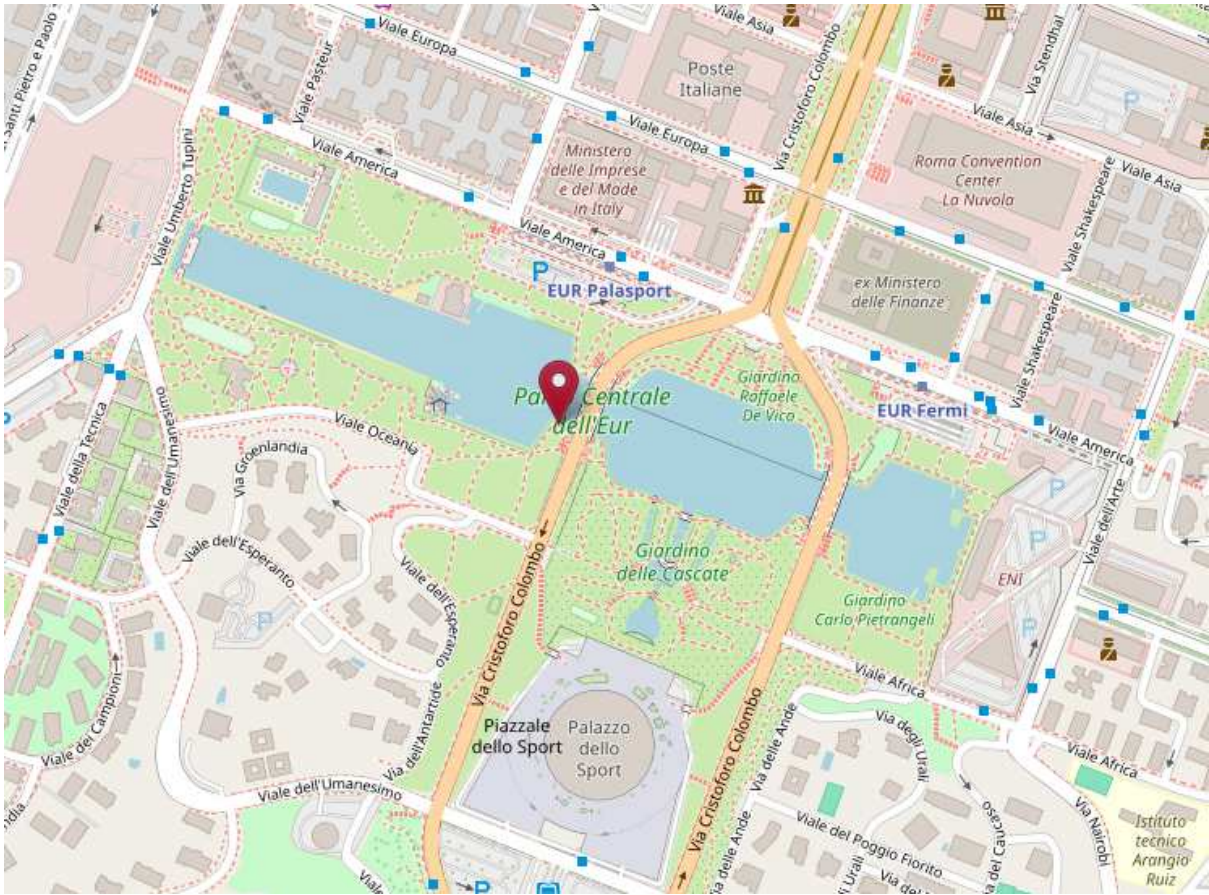
Image n.2 Map of Eur Central Park of the Lake from Open Street Maps

# 4. FINDINGS

As stated in the previous chapter in order to answer my research questions I decided to propose to some habitual players of the LBMG Pokémon Go a series of semi structured walking interviews in which players were encouraged to play the game in their usual itinerary while I asked them my questions.
This chapter will be used to show the results of the interviews, by presenting and providing examples for each of the themes that emerged from the thematic analysis.

Four themes have been identified: daily mobility habits, scope of playing, relationship between space and technology and building a sense of community. Each of them came from grouping together similar recurring responses players gave during the walking interviews, and also include the general impressions coming from the walking themselves.

## 4.1 Daily mobility habits

This theme comprises all the considerations made by players regarding their daily routine. During the interviews, they talked about how their consistency in playing Pokémon Go has affected their daily habits. In particular, it has emerged that the game influences them on their decisions for mode of mobility, as well as their choice concerning specific routes. Another key aspect that came out concerns the changes these players are willing to adopt in their daily routine in order to create playing opportunities.

Analyzing the topics emerged by the interviews, the majority of the responses demonstrated that players felt like playing with Pokémon Go had a role in their decision making process when they had to plan their movement. Starting from the place that was chosen by the players both for our interviews and their usual meetings, the Central Park of the Lake. A place accessible by all participants on foot or by taking a short ride in the subway, so that it is at the same time a comfortable meeting place but that also allows to make some captures before meeting with the group for the Raids.

With these considerations on planning their movement, seven of the players found themselves more keen on using public transport and/or going on foot because of the game: *"Now I prefer*

*to travel by public transport(...) what has changed is mainly about transport, how I move around and everything"* (R4, M, 34).

Only one of the players I interviewed said he had not changed his mode of movement so radically, having preferred also in the past not to use his car when not strictly necessary. His answer that I report here includes the common meaning that players find in playing with Pokémon Go: *"I am a person who walks a lot, so if I have to choose between going to a place by car or going to a place on foot, I prefer to walk. And so it goes without saying that if you have a means, a tool like Pokémon Go, that allows you to make the walk a little more enjoyable, because basically you're playing, it's a nice addition"* (R8, M, 22).

On the other hand, for the responses concerning if and how they ever felt like changing their usual routes or itinerary because of the games, all of the respondents have in some way or another done so. Some players happen to make specific adjustment to their schedule to play the game *"For example I leave the house an hour or so before I have to go to work so I can walk around in the morning and capture stuff, because near me at work I don't find anything"* (R1, M, 32), while other players use the game to escape from their routines: *"If I have nothing to do, like when my wife is at work and my daughter at school and I work late then I take walks, even up to Piazza del Popolo for example, the other day I went there, which if I did not play this game I would never have done"* (R2, M, 34); another popular use is to take advantage of those moments that they would not know how to use otherwise: *"I often go to Holland and Germany for work, now with all the snow I go out the same, even slipping, or in the rain, to look for rare or local Pokémon that you can find only there, or only in those weather conditions"* (R3, M, 27).

As for their interpretation of the choices they make daily in relation to the game I have noticed that their vision is sometimes limited, most probably related to never having to reflect on their actions in this way, as it emerged also in the briefings after the interviews. What usually happened was that they returned on their own at different times of the interviews to take back in consideration questions which they didn't know how to answer at first, or to which they had noticed that they had given a too brief or unfocused answer. In one case one of the respondent at first gave me a panoramic of the way he approached the game saying: *"I don't think the game ever affected the places I went to, because in my experience I usually open the game when I have some long walk to do to go to a certain place"* (R7, M, 25) and then, after talking with me further he admitted that *"if I see on the radar a Pokémon*

*particularly rare maybe I could make some detour, or maybe if there is a gym I could defeat, maybe I happened to take a detour to that gym."* (R7, M, 25).

Only one of the respondents, though, pointed out: *"In fact this is a place we come to because we play, otherwise there would be nothing which draws us here and we would not come so often"* (R5, M, 36) referring to Eur's Central Park of the Lake.

It did not emerge explicitly in the context of this type of questions, but during interviews it was clear that this is not a place that any of the players frequented before starting playing, despite all living more or less in their vicinity, although at the time of the interviews all the players now considered it a usual place.

It was clear by the way they moved in it, from identifying the meeting point for the interviews in the usual meeting point for players before the Raids or their other activities, denoting their familiarity with the place, and also from the fact that in more than one interview it happened that we met and stopped to greet some other group of players.

**4.2 Scope of play**

The second theme contains the reasons players have decided to start playing, the reasons why they kept using the game consistently and their expectations for the game.

When asked about when they started playing, and the reasons connected to why they chose to first download the game, the respondents' stories are similar: *"I think I'm almost a veteran of this game because I've been playing it since the day it came out,off and on, but since 2016"* (R4, M, 34).

All respondents downloaded the game when it first launched in 2016, played with it for a short amount of time, gained back interest cyclically with every new upgrade and finally picked it back regularly once the security measures for the pandemic were removed.

As for the reason they chose the game, it was for all of them related to being interested to the Pokémon franchise in general: *"I started playing because I liked Pokémon, I always played with their game as a child and even now every now and then, so it was something Ialways liked, so when the mobile game came out, which at the time was a viral thing, obviously I downloaded it immediately and with a few friends we were quite busy with it, we played a*

*lot."* (R8, M, 22), *or*: *""I was driven by the passion for the franchise, I have played Pokémon since I was 6 years old, I've always played with my friends, any kind of game"* (R5, M, 36).

When asked about why they kept going back to the game, and what made them stick to it for all of this time the aspects that were mentioned the most, other than the stated interest in the Pokémon world, were the fact it offers frequent upgrade: *"They add new generation Pokémon, when at first there were only first generation Pokémon. They also added more side missions, because at first it was a bit monotonous"* (R8, M, 22); the high playability: *" (...) you can open the game in any situation, you can do it while you are walking, while you are going out with friends, it is accessible at any time, so from this point of view there are no limitations"* (R7, M, 25) *,* and: *"If you like to play and you can integrate it into your life at the level of appointments, of commitments, it's a nice game, it keeps you engaged in moving. Depending on how much time you have to devote to it, it is quite good as a game to get out of the house"* (R1, M, 32)*;* the fact it motivates people to go outside in order to play, and do some sort of physical activity: *"I think they managed to create a game that works very well in its intention of making you walk, there are also ways with which you can play in the car for example, but I think it's less fun that way"* (R3, M, 27)*,* or: *"The fact of having to walk is one of the things that has made me appreciate the game over time, it's its particularity and is what makes you come back to play I think"* (R8, M, 22), and: *"The goal of the game is to make you walk, and I think they succeed at that. Then especially after the pandemic it was something that people needed, so many people started playing again"* (R6, M, 28); and finally because the game encourages the creation of links with other players: *"Usually I always look for someone to go around and play, banally it has always been a good excuse to get out of the house and take a walk"* (R3, M, 27)*,* or: *"Then the fact of being in person makes you create necessarily, or anyway helps to create relationships, is a game in which you have to actively participate, go around with the GPS (...) in the sense it is just to find physical places, make the paths"* (R2, M, 32).

## 4.3 Relationship between technology and space

The third theme focuses on the relationship between technology and space. Under this theme have been collected players' impressions on the usage of AR technology, namely on the usage of the game interface. It comprehends their acknowledgement of the game playability

and how it relates to the background of the city. It also comprehends the understanding of players of the physical space from the game point of view.

Regarding the impressions they have on using AR technology all the players responded positively. In none of the cases resulted as the sole incentive in using the game, but in all of them it was the aspect that piqued their curiosity and prompted them to continue playing. In all of the cases, though, the players decided to use the live rendered modality, and for what I could see during these walks it has a similar user-experience of using Google Maps or a related service but for locating Pokémon Go.

*"One of the main drawbacks of technology is that it is closed, disconnected from the rest of the world, and it's nice that there are ways to combine technology with different activities"* (R8, M, 22). The other players share similar views: *"From my point of view, instead of spending those 4 hours in front of the computer to play online, now I step out, since the game allows you to go out, meet people and have fun around, is not like talking in a chat. it's the best aspect of the game"* (R2, M, 32), as well as: *"Compared to virtual reality I find it better, because there you are at home with a visor, instead tools like this allow you to have both aspects, maybe there is also a vision of being more in contact with nature, in the parks"* (R3, M, 27).

Regarding the relationship of the game with the places the players attend one of the aspects that was most recurring was the strategic nature of the game. What has emerged from the interviews is that for these players the physical setting in which their game takes place it's particularly important (Image n.3).
During the walks I could observe the way in which the players created their paths within the park, which sometimes happened to be almost identical paths since players are often together and therefore share the best itineraries. Each of them always had a very precise idea of where to find more Pokémon and where to stop to pick up the items that would be useful in the game. During the trip, regardless of the player interviewed, it happened to stop several times to allow the captures, and this way I had the opportunity to see the park from another point of view. The areas of the park were no longer identified only by physical features, such as the picnic areas, or the fountains areas or the spots where you can sit under trees, nor even only by its toponymy, but also by identifying the areas of the park where it was possible to make more points and capture more Pokémon.

*"It's simple but very strategic as a game, you have to learn where things are, you have to create your own path, the aspect of the group is important too"* (R5, M, 36) . There are other similar responses like: *"The game is strategic, where you move is important, the places you choose to play, how much you know the places where you play"* (R3, M, 27), or like: *"I remember that when I started, near where I lived, there were 5-6 Pokestops in a row and people went there to attract more Pokémon, and there was also thinking about the paths to take and the strategies, if you could activate something to get more, and we happened to meet in so many"* (R8, M, 22).

This strategic approach resonates in all of the players' experiences: *"The game features Pokestop based on how many connections there are in one place. In fact, in the beginning the places where there were more Pokestops were the malls. Now this thing has changed a bit. Maybe even in inhabited areas where there are points where there are more houses and therefore more phone connections there are more Pokémon in the same point. But if I go and I know the place then I make 250 catches, if another comes and doesn't know the place then he does half that because he does not know where to go"* (R2, M, 32).

What has also emerged is a sense of belonging in the moment and to the places where they are playing, the game is not considered a distraction as much as a way to entertain oneself, an occasion to socialize and to walk outside: *"Maybe I can tell you that there are times when you're playing, maybe you're doing a catch or beating a gym, where you might feel alienated from what's around, but because you are focusing on an action that still requires a minimum of mental effort. There's maybe a risk, but it's not something that's prolonged, now I'm having a chat with you, I have the game open, I'm catching Pokémon; I'm looking around. I'm taking a walk that I would have taken alone or maybe with the dog or with a friend."* (R7, M, 25).

It emerged that in most of their experiences the game also represent a way to be more aware of their surrounding, when it creates new connections and familiarity: *"There are things you might not have noticed before, but now you recognize them because of the game, and now I say ah there is the Pokestop, there is the gym..."* (R1, M, 32), or: *"It also happens to me with my girlfriend, because we play together, if I tell her give me directions to place X she says to me "turns to the second gym", it's not that she tells take a turn me at the roundabout or things like that, she tells me "go right at the second gym"* (R4, M, 34).
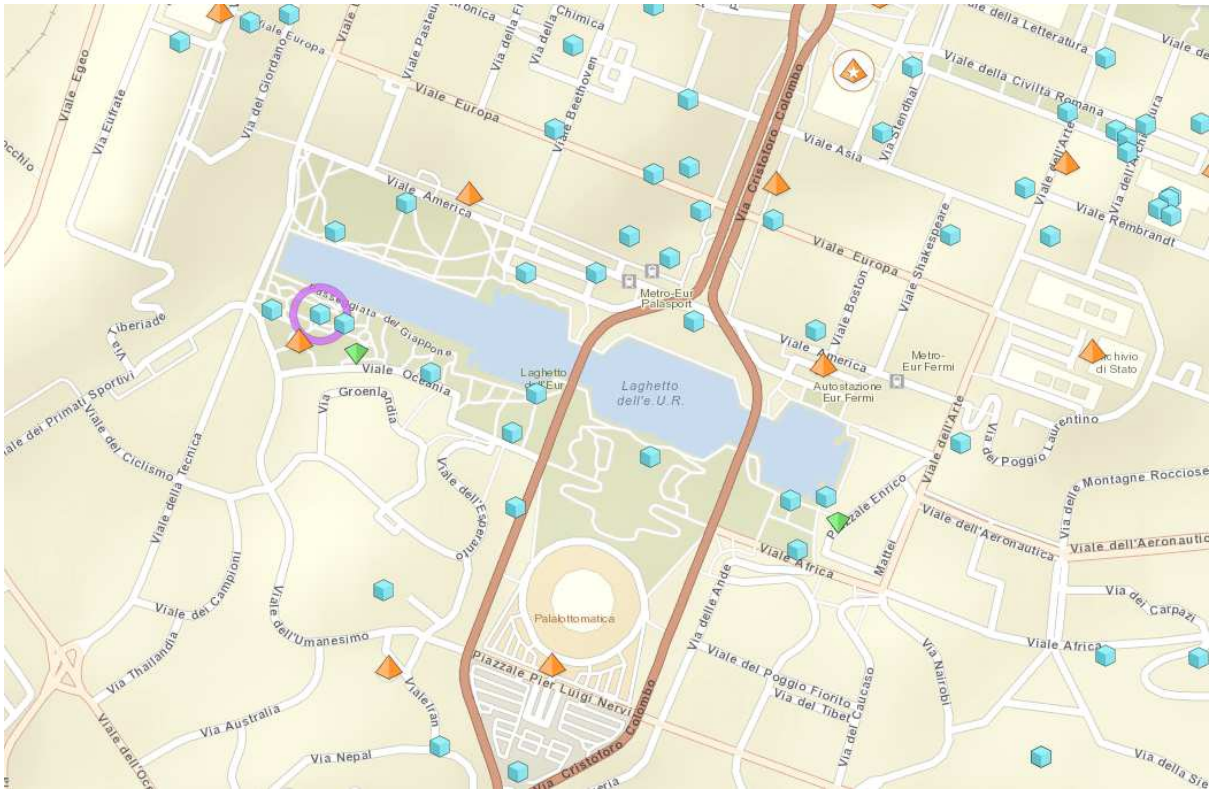
Image n.3 PogoMap's Map of Eur Central Lake Park, showcasing all of the Gyms and the Pokestop in real time on 15/09/2024

**4.4 Building a sense of community**

The last theme contains all the players' considerations regarding their activities directly related to the playing field, both in relation to the events related to the game and in regards to other actions related to the experience. From the responses it emerges a growing awareness of belonging to a gaming community that is linked to the Eur's Central Lake Park.

One of the recurring topics that emerged from the interviews was the need to collaborate with more players to complete some of the game's missions, in particular the ones called *Raid* (Raid Battles occur when a Boss Pokémon takes over a Gym, and a player's goal is to defeat this Pokémon with the help of fellow players): *"The game is nice because it takes you around, it's strategic, Raids are the most dynamic and fun, because they are difficult things to do and you need other people to do them"* (R1, M, 32).

Although there is no possibility to communicate with other players within the game, except for a recently implemented feature called "radar" (that permits to communicate to the game the willingness to participate in a specific Raid), which none of the players I interviewed used, the game requires a group effort to achieve the maximum performance.

*"In the game there is practically nothing to communicate with other players. In Italy, even if I think this type of application is not very good, an app has been created by players dedicated only to organize meetings for Pokémon Go, Pokémon Go Raid Remote. Most of the players I know use Telegram anyway."* (R7, M, 25).
*"It might be feasible for you to go out, play games, and maybe meet someone, but it's easier if you organize first with someone you know or through groups"* (R1, M, 32).

The need to play in groups of at least four to five members was the reason groups on Telegram like the ones I used to contact participants for this project were created, and it is the reason why all the subjects I interviewed knew each other, and had played at least one time with each other.
*"I didn't know anyone at first, I played with my girlfriend, but then I met the others on the Telegram group"* (R3, M, 27).
*"At the beginning I had searched on facebook, because I knew that there were posts on video games, I answered a guy who turned me on to groups where there were all the communities here in Rome"* (R2, M, 32).

In all the cases the players were involved in those Raid, and regularly participated once they were actively integrated into the group, as it was clear from responses on the reason they kept playing, socializing and forming a group were some of the pushing factors: *"We now know each other, we see each other when there are Raids, or on other occasions and we play, which then are opportunities to meet and talk, and then maybe we have an aperitif or things like that"* (R2, M, 32)*,* or :*"I also started to be passionate about the game for this group dimension, after having started it is the getting to know each other and organizing things together that made me continue"* (R3, M, 27).
And actually during the walks, besides noticing the similarity of the routes to get to the same "highlights" of the map, players also showed me the places they use to meet each other either to plan game strategies or to spend time together after the game time, as the places in the park where to have an aperitif or dinner to end the day.

When asked about significant changes on the places they usually frequented because of the game, like the Eur's Central Lake Park and that they attributed to their playing activities, only one of the players responded positively: *"Maybe it's seeing in it too much, but I think that*

*some areas (of the Eur's park) have been revitalized, let's say that I see more people coming here since I started coming to play"* (R1, M, 32).

In particular, during our meeting, when we stopped at a pitch with benches and a fountain, far from the shops and leading to one of the secondary roads adjacent to the park, he showed me that there were some people reading and a family with children, pointing out that when he had started playing regularly again that was an area of the park where few people arrived, but some drunk people sleeping on the benches. According to him, his presence and that of the players who regularly visit the area has helped to encourage people to keep to that area.

About activity or events that are organized in the places they usually frequent specifically because of the game, other than the Raids, that are organized remotely and are the same everywhere, the responses showed that nothing was ever organized for these specific purposes.

*"Big events take place during the summer, normal ones, then there are cities like London or Osaka, because there are more people, where there are special events, always in the summer."* (R5, M, 36); and: *"In other countries it is different as in the US or France, there are more sponsorships for the game because they play more"* (R7, M, 25).

As for activities or events created by players related to the game itself, two of the respondents explained their project of wanting to create an official game community, recognized by Pokémon Go.
*"Here with the group we now had the idea of creating an official gaming community, to have some advantage, such as being marked on the official map, with events sponsored by Pokémon Go, where they can give you items to use in the game. You can also make requests for special community events ... we want to try to do it but it is difficult because there are heavy checks on accounts... however I know other people in other places who have done it or want to try anyway"* (R1, M, 32).

But by their responses emerged also the difficulty of introducing this community to the official game register: *"Recently for one of the event we found we were 80-90 people here, there was a line of cars that never ended,[4] there were so many, they were all day going*

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[4] Of people who never played in Eur's Central Lake Park before (translator's note)

*around that day there, and there were many new people also interested (...) even those who played individually began to look for groups in order to close the Raid (...) there were 3-4 people who continued to come after that time and write, but let's say that you must always pass the test of time, because this is a game that at the beginning takes you a lot, but you can easily lose interest if you do not find people to play (...)"* (R2, M, 32).

**4.5 Conclusions**

From the thematic analysis came four resulting themes, respectively daily mobility habits, scope of playing, relationship between space and technology and building a sense of community.

As reported in the first theme all players believed that the game affected how they approach their daily movements, if not in regards to the mode of mobility they chose, at least from the point of view of the routes that they decided to take and the deviations that they decided to make, as well as regarding the frequentation of places that would not happen without the presence of the game.

In the second theme instead we find all the considerations of the players regarding the reasons that keep them linked to the game. It emerged in every interview how players pick up and are attracted to the intrinsic objectives of the game, of pushing players to walk and of entertaining, and it also emerged how besides them players pick up other meanings with which they feed their want to keep playing.

The third theme shows that for players it is fundamental to develop the relationship with the territory in the perspective of advancement in the game, and that the use of the technology of the game itself favors this possibility, guiding to places that they would not otherwise have visited but in which they can now find their bearings and plan.

In the last theme emerges that there is a willingness on the part of players to create activities directly related to the gaming place, for example, the desire to organize events through the creation of an official gaming community, which is difficult due to the registration process, or to use the opportunities of meeting dictated by the game to socialize and to create additional occasions of meeting, as dinners and aperitifs post events and Raids.

# 5. DISCUSSION

For most of the participants in my walking interviews, Pokémon Go contributes to creating new mobility habits, from choices concerning the mode of mobility, to constituting the reasons participants decide to frequent specific places.

Through the walking interviews, I was able to analyze players' act of walking (Middleton 2018; 2021), their habits and their behaviors, and put them in relation to the new mobility paradigm (Sheller et al, 2006) regarding how daily occurrences need to be analyzed from the perspective of their location, in the context of their scheduling and depending on people's daily needs.

It was interesting to see how for most respondents playing Pokémon Go has proved to be a key tool in changing their movement habits. Although the sample interviewed was limited, only one respondent stated that he had not changed his habits, but even in that case the interviews emphasized that playing Pokémon Go was considered an incentive when the habitual players have to choose whether to take a walk or not, and in any case they proved that players appreciate having a distraction/pastime when in the act of walking. It means that the purpose of the game, the desire to encourage physical activity, manages to attract interest in an audience even years after the first release of the game.

As shown in the first chapter, the history of location-based games has been established for a few decades and despite never entering the mainstream market, with the exception for the lucky case of the release of Pokémon Go, it is a reality that continues to interest both enthusiasts of this kind games and scholars who are wondering about the possible implications for research. Indeed, especially but not limited to the context of studies on place-making, there is an interest in understanding the type of spatial interactions that these games create, and implicitly also to understand what attracts people to play this kind of games.

In the initial questions I had not focused on this last point taking it for granted. From the interviews, though, it came out that it has to be explicitly considered to understand the ways in which location-based mobile games affect place-making processes.

In the specific case of Pokémon Go, from what I could observe during the walks and what I was told, there are several important aspects that have kept players playing, and these aspects are the reason that led them to gain a different awareness of their game setting, the urban playground, and allowed some of them to start dabbling into place-making dynamics. First of all, it is important to consider the reasons for approaching the game: Pokémon is a famous franchise and the interviewees were interested in it long before the release of Pokémon Go. The game has been able to develop over time and meet what were the wishes of the players and their criticism, maintaining the interest of a niche of public that remained faithful over the years. The game has also been able to exploit two key moments, the first in conjunction with the release of the game, exposing a novelty in the mainstream and interesting those players who wanted a video game that was more grounded with reality, and the second was during and after the pandemic, when the game managed to not lose audience during the lock-down and then taking advantage of the desire of players to leave home in the following months. Finally, one of the most important reasons that emerged from the interviews was the creation of opportunities within the game for which it was necessary for players to meet in real life in order to pass the various levels and win the challenges. This inevitably led the subjects to create bonds and thus also a sense of belonging to the game.

These reasons are what led the players to want to be committed to develop their gaming community and to be more interested in the places they visit and that are no longer just a background of their activities, but become the reason why these activities can happen in the first place.

As some of the players claim, the park they started to play in has been seen as more lively, because of their regular presence, and because they are putting in motion initiatives that if met with success will further influence the place. It could be necessary to verify with a more in-depth socio-spatial investigation whether there were other factors that contributed to this interpretation by the players, as it will need to be verified whether this vision of the creation of a community can actually lead to changes inherent in the quality of places.

For the purposes of this work what has been analyzed results sufficient to confirm (de Souza e Silva et al, 2009, Hjorth et al, 2014, Denyer-Simmons, 2016) that playing Pokémon GO, and similar LBMGs can enable changes to place and the meaning of place because it requires

users to physically explore their local environments, and this in turn brings positive physical and social experiences that users may have otherwise been unlikely to participate in. This work also showed how players can use LBMGs to activate communities of interest in local contexts, organize urban events and public demonstrations of play.

The use of LBMGs hone in how places represent more than just physical locations,but become the sums of narratives, memories and social practices (Hjort et al, 2014; Firth et al, 2013; Halegoua, 2020). The interviews showed there isn't a clear separation between the interactions and decisions of the game world and the real world. Through Pokémon Go players gained a different perception of physical places, an added dimension they could overlap on their previous experience, and with which they could transform their representation.

This study though only took into consideration only one LBMGs and was conducted on a limited sample, so further research should be implemented to cover the gaps, and to take into consideration broader parameters. These insights could be used to expand research of the impact of location-based services, especially the kind that present a ludic/entertainment purpose behind them. Especially in the context of local development they could have the potential to be integrated into more broader action regarding place-making processes.

# 6. CONCLUSIONS

By analyzing a series of walking interviews of habitual Pokémon Go players this thesis has shown how playing LBMGs can have an active role in assisting in processes of place-making, in the way these processes try to engage people in immersive experiences.

The central question of this work was understanding *"How do players create and interact with the urban space through their (repetitive) use of LBMGs?"*.
The sub-objectives were:
- *"Does the use of LBMGs result in changes in routes and modes of mobility for players?"*
- *"How do offline and online interact in the ludic activity?"*
- *"Do LBMGs have an impact on players' relation to physical space?"*

It was decided to take walking interviews as the qualitative research method to analyze the initial research questions as it was thought to be the method that better allowed to realize the experiences of LBMGs' players.
Through this kind of interviews it was possible to have a deeper understanding of the experiences of the various players, especially with respect to the place they were frequenting, and at the same time as the game was being played. In this way it was possible to count on evidence of familiarity with the space and with players' reactions.

The chosen analysis method was thematic analysis, as it is often used in qualitative research to analyze text and transcripted interviews, in particular in the form of an hybrid thematic analysis method that combined the use of deductive and inductive modes of reasoning. This method was particularly suitable because in its hybrid nature it offered a way to mitigate preconceptions, and for the data to speak for themselves. It was important also for taking into consideration how the interviews were experienced.

Following the thematic analysis, this study confirmed that participants believe that playing with Pokémon Go affects in a significant way their daily mobility habits, both considering the choices they make regarding their mode of mobility, and because the game constitutes the reason participants decide to frequent specific places or take specific deviations.

The results demonstrate that players don't experience a sharp separation between the spatial decisions they take in the game world and in the "real world", but instead they find themselves transforming their perception of physical places by the added dimension of the space of the game. The fictional space represented by the set of Pokémon Go enriches the meanings players give to the urban space they interact with daily.

Moreover, this study shows that players develop a sense of familiarity with places and processes of recognition that are uniquely true to their game experience. The game experience enables players to plan and act on changes to the places they frequent, and they act on it in different ways. The positive experience of the game and the community of players that was created led some players to be interested in finding ways in which they could develop their community and the park area. As players claim, the park they started to play in has been seen as more lively, because of their regular presence, and because they are putting in motion initiatives that if met with success will further influence the place.
Knowing the characteristics of the place and having confidence to be able, in time, to expand the pool of players, some of the respondents hope to attract the game itself to sponsor or create local events ad hoc, as is the case in other major international cities.
It could be necessary to verify with a more in-depth investigation of the territory whether there were other factors that contributed to this interpretation by the players, just as it will need to be verified whether this vision of the creation of a community can actually lead to changes inherent in the quality of places.

For what concerns my initial research question though, one of the most interesting aspects to emerge in this work is the fact that the possibilities that this type of games lead to place-making processes depends on a number of factors that must be taken into account: the reasons for players to engage in the game, the incentives to keep playing over time and the creation of opportunities where it is necessary to interact with other players to achieve goals in the game.

This study fits into a broader discourse dealing with local development studies, in the way it showed the possible links between LBMGs and processes of place-making, and it opens possibilities for other studies on how public and private infrastructure could interact and on how these services can be modeled on local territories and experiences to enhance solutions modeled to specific local needs. Although this study is not specifically designed to address

these issues, it can serve as a starting point for future studies that aim to propose models or analyze the implications of these issues more deeply.

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