A Tale of Two Cities: Playing the Location-Based Mobile-Game Ingress as mediation between the In-Game City and the Out-Game City

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Abstract

This thesis seeks to empirically investigate how seasoned players of Ingress, a Location-Based Mobile Game (LBMG), mediate their experience between an In-Game City, that is to say an urban environment that exists as players engage with the rules of the Ingress game, and an Out-Game City, that is to say an urban environment that exists regardless of whether the rules of the Ingress game are engaged with or not. In the spring of 2017, qualitative in-depth interviews were carried out with 13 seasoned Ingress players from the Rotterdam area. The analysis of this data had produced an understanding of the Four Processes of Playing a LBMG. When players engage in playing, four processes take place concurrently: Sensing the In-Game City, Making the In-Game City, Sensing the Out-Game City and Making the Out-Game City. 10 unique sub-elements are also identified, describing the themes and qualities that constitute each of the four processes, including how they pay attention to both the in-game software and out-game materiality, how they form social relationships with other players and so on. In summary, Ingress players actively construct their urban experience, both in the In-Game City and in the Out-Game City, while they engage in the Four Processes of playing of the Ingress LBMG.

Key Words: Location-Based Mobile Games, Urban Media Studies, Ingress, Playful Urbanism, Urban Games

1. Introduction

1.1 Ingress and the Two Cities

"…from a dérive point of view cities have psychogeographical contours, with constant currents, fixed points and vortexes that strongly discourage entry into or exit from certain zones." (Guy Debord, 1958)

"This is not psychosis or some sort of cognitive break, but an actual takeover of the mind. Much of the public sculptures found in our cities is based on designs seeded in the human mind. Certain places have an energy that not only attract people but attract events. The mission of #13Magnus is to monitor the effects of mind-hacking. Obviously this would be done with the highest of security, to make sure the ideas do not contaminate or threaten humanity." (Ingress – It's time to Move, 2012)

Ingress is a Location-Based Mobile Game (LBMG) created by Niantic Studios, the game development company which is now more widely recognised for their latest LBMG output: Pokémon Go. In the summer of 2016, Pokémon Go had become the most popular game in the world (Meyer, 2016), inspiring millions of people to go out into the physical environment to find and interact with virtual Pokémon creatures. It is imaginable that following the example of this commercial and cultural success, LBMGs will henceforth receive increased attention from gamers, the game industry, media professionals who are interested in LBMG's communication potential, and any other commercial entities interested in the business opportunities LBMGs provide. Furthermore, as this text will argue, the popularity and prevalence of LBMGs will also have significant implications for the very experience human beings have in urban

environments, and therefore deserves scholarly investigation and understanding.

This thesis study opted for Ingress (and Ingress players) as its chosen object of study, instead of the more popular Pokémon Go, for the primary reason that the Ingress game had been established since 2012, and therefore has a community of long-term players who had been playing for extensive period of time: at the beginning of 2016 the game had 14 million downloads, and the in-game real-geographic-location points of interests, "portals", had received 729 million player visits (Goggin, 2016). The game itself also had more time to develop and evolve, and therefore has a more complete system of gameplay features, whereas Pokémon Go, which was more recently launched in July 2016, still had some key features missing (Thier, 2016). Additionally, on a more poetic notion, the narrative context of Ingress and its central gameplay mechanism involves the players competing to gain control over "portals" in the urban environment, as these portals exert certain "Exotic Matter" which has an influence over the human mind. By forming links between these portals and territorialising areas called "fields", players are able to capture "Mind Units" to score for one of the two in-game factions: the Enlightened (represented by the colour green) or the Resistance (represented by the colour blue). Narrative is extremely relevant in creating a sense of immersion and engagement for players of augmented reality games (Coppock et al, 2009; Chess, 2014). As this text will argue, we may, not coincidentally, find interesting overlaps and parallels between this fictional Ingress narrative of portals' effects on human minds, and the actual phenomenon this study aims to investigate: the ways Ingress players' played in-game urban experience interact with their out-game urban experience.

1.2 Research Question

The research question that will guide the present thesis study is as follows:

RQ: How do Ingress Players mediate their urban experiences between the In-Game City and the Out-Game City in the act of playing?

This question demonstrates the fundamental theoretical perspective in the present research. As players play Ingress in the urban environment, there are indeed two cities involved: a city that is in the game, and a city that is outside of the game. In the act of playing, the players engage with both cities at the same time, and become the mediators between them. It is the aim of this research to qualitatively explore and illustrate *how* this mediation happens for players as they experience the urban environments, both during and outside of the time of playing Ingress. More specifically, this research explores the players' experiences in the two cities via the twin processes of Sensing the City and Making the City. Chapter 2 of this thesis will elaborate on the theoretical body in urban theories and media theories from which this two-city perspective is derived, but firstly this section will outline the relevance of the thesis research.

1.3 Urban-media Studies and Social-Political relevance

To outline the relevance of the thesis study, we may direct our attention to two current developments in the field of urbanity: Firstly, more than half of the world's population now reside in cities, and it is estimated that by 2030 over 60% of the

world's population will be urbanised (Parker, 2015). Secondly, the urban experience of people is becoming increasingly mediated (Giaccardi, 2013; Lapenta, 2011; Burd, 2008; Atkinson & Willis, 2007; McCullough, 2006). This second development is, in turn, manifest in two interrelated trends: First, the city is now a context in which much of media is produced, practiced and consumed (Grahm, 2004), and secondly, the city, the images and symbols of the city, the imagination of the city, and the totality of people's lived engagement with the city is increasingly transformed into/takes the form of media contents. The implication in these developments is that, in order to understand the lives of human beings in the 21st century (that is to say understanding their relationship with politics, economy, geography, society, and so on and so forth), it will be critical to have an understanding of their mediated urban experience. This field of studying the role of (new) media in the urban environment had been termed "Urban media studies" (Tosoni & Ridell, 2016).

Specifically, this thesis research intends to study the playing of a Location Based Mobile Game, *Ingress*, and how in the act of playing such a game the players could mediate their own in-game and out-game urban experience. The relevance of this subject will be hereby illustrated by the relevance of its two key components: 1)geolocational media in the city, and 2)playful activities in the city.

1.3.1 Geolocational-media in the city

Some scholars had theorised that the advancement in instantly-accessible media technologies had made distance between places meaningless, and as the user can instantly engage with places and people from anywhere in the world at any time, media technology had therefore collapsed space (Meyrowitz, 1997). Seeing the emergence and prevalence of geo-location media, however, we note that this

perspective is incomplete, and that the geolocational reality of media content is still relevant and meaningful for media users. Geolocated media content (such as geo-tagged images, texts and sounds), “can clearly be seen as more than a mere collection of representations of the world. It can be interpreted as a reunion of the once-disconnected ‘world of autonomous images’ with the real world of their producers“ (Lapenta, 2011, p.16). This is to say that with geolocational media technology, our engagement with the mediated world had become, again, grounded. The design of present (and near-future) media infrastructure must take its relationship with physical places into consideration, and the urbanism of the present (and near-future) must also consider its relationship with geolocational media (McCullough, 2006). Parallel to Jane Jacob’s thesis that relevant knowledge in urbanism must come from observing activities on the city streets and observing how actual inhabitants live in cities (Jacobs, 1958), the media studies of the city can also benefit from observing the way urban people interact with the city’s media imagination by producing their own geolocational content that are grounded in the city map (Lapenta, 2011).

Shaw (2015) had commented on how the role of urban media had contributed to the “reproduction of urban subjectivities under the terms of global capitalism” (Shaw, 2015, p.230). Lapenta had noted how “Geomedia are to space (material and immaterial) what the watch is to time.” (Lapenta, 2010, p.22), in the way that geo-located media becomes instrumental in regulating interpersonal behaviours, communications and relationships. Chess (2014) had presented an argument about how the Ingress game uses narratives to negotiate new meaning and new understandings of regionalism and globalism, and how Ingress reshape the relationships between these two spatial ideas for players. Research in this direction

demonstrates that the urban role of geolocational media has various spatial-political importance and can have impact on citizens' relationships to capital and to power.

This spatial-political importance also extends to the more playful side of geolocational/mobile media. As an modern iteration/transformation of Baudelaire's flaneur (an urban wanderer), Robert Luke had coined the term "phoneur" : "The phoneur is released from its digitalcitizen-as-consumer rubric, and the city, once 'territorialized within the rubric of capital and commodity flows', is transformed into a space of casual play." (Luke, 2006, p. 203, as quoted in de Souza e Silva & Hjorth, 2009)

1.3.2 Games, playing, and the city

In the 21st century, games and gamification had received tremendous scholarly attention from thinkers and practitioners in a variety of fields in business, science, governance and so on (Deterding, 2014). Some have gone as far as to say that the 21st century is the "Ludic Century", that games are becoming the dominant form of human media, and playful behaviours are becoming central to all human behaviours (Deterding, 2014)

As for cities, playful behaviour had always taken up an important role in urban life (de Lange, 2009). It is beneficial for the mental and physical wellbeing of urban dwellers (Rawlinson & Guralda, 2011), and it also "generates memory and sense of place. It connects people with the city. Play reveals the hidden terrains of desire and fear which affect the shape of our cities." (Calvino, 1974). The notion of the ludic city has a rich legacy stemming from long before the prevalence of the smart phone: playful ideas such as the Baudrillard's flaneur, the Situationists' derive, and the urban

extreme sport Parkour are prominent examples of this (de Souza e Silva & Hjorth, 2009). Scholars had identified playful spaces as a fundamental element in the urban fabric, commenting that “playful spaces are a subcategory of social spaces in the realm of social practices (perceived spaces), in that they highlight the relationship between daily routine and urban reality.” (de Souza e Silva & Hjorth, 2009, p.604).

More recently, much research had been done on the relationship between video gaming and urbanism. Von Borries, Walz and Bottger (2007) had identified 5 domains in which games and urbanism find points of intersection: First, there is an “architecture of computer and video games” in that many games include elements of a built environment. Secondly, the theme of “ludic construction of the metropolis” has been central to (western) thinking about the city (de Lange, 2009). Thirdly, the new practices of pervasive gaming (or “ubiquitous gaming”) could contribute to newer/modified social functioning of urban places. Fourthly, “serious games” are being used in the working process of architecture and urban planning. Fifth and lastly, “urban games pose critical questions about the utopian and dystopian futures of cities.” (de Lange, 2009, p.167) Researchers had explored how video games influenced the players’ sense of body in (suburban) space (Murphy, 2004), how video games affected the players’ sense of danger in urban and suburban streets (Williams, 2006), and how experiences in video games’ urban setting (like that in the game Grand Theft Auto) could have an interaction with the players’ experiences in real urban space, in terms of how they navigate urbanity, how they perceive certain social ecologies and stereotypes, and how they identify and compare real urban environments with those in game (Atkinson & Willis, 2009).

For the specific urban relevance of location-based mobile games, there is also an

existing body of research in this domain (albeit a smaller body due to LBMGs being a relatively new development). De Lange (2015) had conducted research to suggest how digital play and games can contribute to citizen participation in the smart city. Yoon and Jin (2016) studied how young players of mobile games can either be empowered or succumb to existing economic hegemonic power relations. If LBMGs receive an increase in prevalence in the near future (which considering the success in Pokémon Go is likely to happen), more approaches in studying LBMGs and their roles for urban societies also become increasingly necessary.

In terms of stakeholders, professional communities working with urban media and/or with the urban environment may find interest in the present thesis. This may include those working in urbanism/urban planning, architecture, (city) marketing, in municipalities, and of course also those who design LBMGs. The arguments presented in this section should imply that any person concerned with the city and the behaviour and wellbeing of its inhabitants, should find relevance in the ways LBMGs contribute to the urban experience. Those with vested interest in the city's communicative potentials, such as marketers and brand managers (Shearman, 2014), may benefit from new insights into how the audiences of LBMG (with all of their attention and meaning-making) interact with the city through the act of play. On the other hand, those working to ensure the public's well-being in the urban environment (such as municipal governments or non-profit organisations), may also be interested in understanding LBMGs, so as to then devise measures to protect the public's benefits.

1.4 Academic relevance

McCullough (2006) had argued for a shift from macro to micro in urban media studies, suggesting that merely researching on global technological trends is no longer sufficient, and that there is an increasing need (both for the technology-business world and for academics) to understand the specific experience of media users in urban settings.

Such an attention for the micro-level is, indeed, a driving premise for this thesis study. Current research in LBMGs in urban settings tend to produce commentary on the general phenomenon of LBMGs and what they could mean for urban societies, when the rules and acts of play is merged with urban space (de Souza e Silva & Hjorth, 2009). Less focus, however, is directed at the specific urban experience of LBMG players. What experiential processes are involved when a LBMG is played? What kind of urban tactics can players exercise when they play? Do they involve elements from other areas of urban life when they experience a LBMG? It is in explorative questions such as these that the current thesis seeks to fulfil a gap in existing research.

On the specific game of Ingress, several studies had been conducted. Chess (2014), as aforementioned, studied how the Ingress's narrative negotiates globalism and regionalism. Shirai et al (2015) studied the use of Ingress in construction of a virtual "field museum" . Stark (2016) studied how Ingress is used in discovering the hidden historical heritage in the city. Majorek & du Vall (2015) discussed Ingress as an example of LBMGs as a new dimension in media entertainment. Hulsy and Reeves

(2014) studied Ingress in the context of the surveillance potential it has for Google and the phenomenon of how players are willingly giving up their geolocation information in exchange for gameplay as service. Hunzaker (2016) studied disruptive playing behaviour ("trolling") in Ingress and how the player community approach and manage these behaviours.

Perhaps most relevantly, Moore (2017) presented a theoretical overview for understanding the playing of Ingress in context of the broader social and cultural notion of urban playful behaviour. Using the notion "situated practice", Moore provided a theoretical discussion regarding the interaction between the social-cultural and material urban environment, and the players' potential for engagement and meaning-making within the said urban environment, through the act of playing the location based mobile game.

While Moore's theoretical insights are highly relevant and these ideas will be discussed in the following chapter of this thesis, it is primarily a theoretical presentation and only grazed on the empirical aspect of the investigation. In fact, presently neither Moore's or any other study demonstrated the empirical exploration into how the playing of the Ingress game, or indeed any other LBMGs, play a role in how players mediate their experiences in both the in-game and the out-game urban environment. Therefore, this research aims to contribute to the field by providing empirical findings on the urban experiences of Ingress players, and connecting these findings with current theories. This is to say, while the relationship between playing LBMGs and the players' experience in the urban environment is discussed by much of the existing theoretical work, this thesis provides an empirical account into *how* this relationship is constructed.

2. Theoretical Framework

The theoretical framework is presented in 4 subsections, each addressing one essential theoretical aspect of the research question. The first sub-section, The Mediated City, outlines the relationship between the media and the urban environment, and introduces the field of urban media study. The second subsection, Sensing the City, outlines the ways people's experience of the urban environment is produced in large parts through their senses and feelings. The third subsection, Playing the City, illustrates the role of playful behaviour in people's urban experience and how it contributes to city-making. The fourth subsection, Location Based Mobile Game & the City, discusses existing approaches in studying LBMGs in the urban contexts.

2.1 The Mediated City

When answering the question of "What is a city?", it may seem intuitive at first to define the city regarding its geographical location, its physical infrastructure and its cartographical boundaries. But brief critical contemplation quickly reveals that the city is a multi-faceted phenomenon: how a city could be perceived and experienced by humans involves many more factors than what a city physically is.

One appropriate conception for this beyond-physical city may be a city that is *imagined*. Urban scholars had long argued that cities have always had an imagined aspect. Kevin Lynch described the citizen's mental image of the city in terms of legibility: a marriage of the city's "visual and imaginative elements." (Brighenti, 2010). Henri Lefebvre proclaimed that " the specificity of a city is to have both a

psychic and a material constitution", and the city is the totality of its material basis and the social relationships that forms on top of it (Brighenti, 2010). Bridge and Watson (2003) suggest that the city is imagined and the city also affects the imagination, and any research into the imagination of the city must consider it as a two-way process.

Note that this imagination of the city does not (only) exist in a magical space of poetic abstraction which is impossible to reach or objectively observe. It is possible to access this imagination city through its presence in human communication. More specifically, this imagination can be found in the city as represented in media, and also in media that is performed and produced in the specificity of the city (Grahm, 2004). Indeed, as electronic communication technology becomes pervasive in urban environments, urban life is becoming re-mediated, that is to say aspects of urban lives and sense of urban places are finding themselves replicated/ represented/ transmitted /manipulated by various media technologies (Grahm, 2004) . If we wish to understand the lived experience of people in physical cities, we must also try to understand their mental engagement with this mediated city.

Many scholars had commented on the relationship between the mediated city and the physical city (Tosoni & Ridell, 2013; Burd, 2008; Lapenta, 2011; Crang, 2000; de Souza e Silva, 2006). One key point of contention is in defining the "real" city: of course not only the physical aspects of a city is "real", but are there any criteria for what qualify as "real" in the urban phenomenon? Is being "realistic" a relevant quality in the media representation of cities at all? For thinkers like Baudrillard and Debord, any analysis of media representation cannot simply assume the referent in this media as "real" without considering the unreal nature of representation and

how unreal representations have the power to hijack/usurp reality (Lapenta, 2011). The primary implication this theoretical tension has on urban life is that “our sense of the urban has loosened and been re-framed by fantasy and other media representations; this hyperreal, in which we have lost the ability to fully distinguish reality from fantasy, has become significant” (Atkinson & Willis, 2007, p.820). According the Grahm (2004), mediascapes were at one time “studied as substitutive of urban space but are now increasingly understood in their interactive relationship”(p.4)

Alternatively, instead of conceptualizing the physical city and mediated city as two realities competing for dominance in our urban mindscape, we may also think of the city in its totality as being a kind of media for communication. Scholarship in urban media studies had referred to the city itself as a huge, complex communication system, “the first super computer” (Ridell,2015) . Hannam (2006) had remarked that “the emergence of high-tech ‘e-topias’ of wireless urbanism and ‘u-cities’ of ubiquitous computing and connectivity suggests a convergence of urban planning, transport planning and ubiquitous embedding of communications infrastructure” (p.12). These notions suggest that the city and its media components are gradually merging into one inseparable system.

To pursue an understanding beyond the technical level and into the philosophical, we can consider Giaccardi (2013)’s illustrative idea of city-as-media with an example of the typical historical European city that was built around a church. Not only did the church building have a geometric and symbolic relationship with other buildings in the city centre, the audiospace created by the church bell regulate the time and activities of all city inhabitants. In this line of thinking, cities have always

communicated through immersion: “establishing common, shared and symbolically dense spaces of experience to be embedded in through the sensorium” (Giaccardi, 2013, p.10). Exercising Foucault’s notion of heterotopias, it is not difficult to think of spaces in the city as defined by their relationships with other spaces and with people, activities, meanings, narratives and histories (Foucault, 1986). And therefore, it is possible to see that any urban experience, electronically-mediated or not, involves an engagement with the symbols and meanings and feelings in the urban environment, and are thus communicational.

Ridell (2015) suggested that in the study of an urban environment, the non-symbolic material views has to be brought into dialogue with the symbolic views. This is to say that the (software and hardware) machinery of the city can only be understood in their meanings and meaningful implications, and equally the meanings are formless and inconsequential without the machinery. Specifically, he presented a 3-dimensional understanding which is the result of such a dialogue, the 3 dimensions being the representational, the presentational, and the non-representaional (Ridell, 2015). In any case, any such way to conceptualize the urban environment is a mental scheme created to help the human (scholar or inhabitant) interface with the city and organise complex urban phenomenon into understandable conditions.

Yet the follow-up question for any of these diverse conceptualisations of the imagined/mediated/communicational/real city is the question of *how do people live in such a city*. The ideas of Marshall McLuhan may be suitable in helping us understand how humans experience the immersive city. To McLuhan, everything, including clothing and furniture and architecture, are considered to be media in their communicative capacity of reshaping the human experience, and that any media is

the extension of human senses (McLuhan, 1964). In explaining how different media define and determine human experience differently, McLuhan had not only famously said that “the medium is the message”, but also that “the medium is the massage”, in that it “literally works over and saturates and molds and transforms every sense ratio.” (McLuhan, 1964). If the city is the medium, the message, and the massage, then perhaps the best point of incision from which to understand how humans experience and interact with both the mediated city and physical city, is to understand their interactions and experience in terms of their senses and feelings.

2.2 Sensing the City

While the city is its own entity, its very being is always perceived and experienced by humans. More specifically, it is perceived and experienced by the human body. Both the material and the social aspects of the city have a mutually defining relationship with the human body: people and their bodily agencies shape the form of the urban environment and the meanings of this environment. Concurrently, the city also shapes every urban person’s perception of their body in the way they define the extension of their agency, and the distinction/connection between their selves and their environment (Grosz, 1995).

2.2.1 Seeing the City

There has long been a “visual bias” in the study of geography and specifically in geographical ethnography (Paterson, 2009). Visual methods had often been used in urban sociology to study people, places, interactions, images and imagery of the city (Borer, 2013). As seeing is an important element in the way humans interact with the external world, paying attention to what people see in cities is, of course, relevant to understanding their urban experience. Lapenta (2011) had noted that, as the new

digital virtual map with geo-tagged meanings and information become both a social space and a new organising principle of society, the visual image becomes its centre of gravity. In this light, visual elements are not only crucial to people's experience of the physical city, but also are just as crucial to their experience of the mediated city.

In understanding how visual experience contribute to the person's overall urban experience, and understand how their visual experiences in both the physical and mediated cities interact to form one coherent visual imaginary, we may consider O'Regan & Noë's model of understanding vision as an exploratory activity (O'regan & Noë, 2001). This model argues that seeing is an active process, and unlike video cameras which captures everything it is pointed at, the human visual apparatus only has visual awareness of what humans pay attention to. This may imply that if playing the Ingress game changes the way players pay attention to different visual parts of the city, they could consequently see the city differently (or, to phrase in more poetic language, see a different city).

Also relevantly, visual awareness does not only include the interaction with visual information, but it also has implications for locating seen objects in space, and therefore has implications for how people navigate their bodies in space: "*To localize an object simply means to represent to oneself the movements that would be necessary to reach it."*(Poincaré, 1905, p.47, as quoted in O'regan & Noë, 2001)

2.2.2 Feeling the City

To discuss reach is to discuss the haptic senses. Paterson (2009) outlined the theoretical perspective in having a haptic approach in studying geography, and noted that the common notion of cutaneous (skin) touch is quite limited. The haptic senses

involve feeling an object relative to the body, whether it is in contact with the skin or not. This is to say, the haptic senses are “the perceptual system by which animal and men are literally in touch with the environment” (Paterson, 2009, p.3). Relating to this, Paterson discussed the current academic work on how the visually impaired navigate space, and in doing so bring forth the concepts of proximal touch and distal touch, both referring to a kind of “muscular consciousness”. This is a sensory function that human beings can perform and generate and process knowledge about the spaces surrounding them.

The immediate relevance of this sense of touch to the proposed study is this: while playing Ingress, players can see and interact (on their mobile-phone touchscreen) with geo-located objects and images (in the form of “portals”) that are within a physical proximity of about 40 meters. To perform these touchscreen interactions, players do not have to be close enough to physically touch them with their own body, or even see the physical portal objects with their own eyes. As Ingress players are navigating the city and touching mediated city parts in this distal way, and become immersed in the game world, does their sense of physical body positioning within and in relation to the urban environment become affected?

In the psychological basis of urban design, “Environment is not an ‘other’ or an empty container, but a perception of persistent possibilities for action”(McCullough, 2006, p.28). Therefore, to be in touch with the urban environment, and to have the urban environment be in touch with you, is an negotiative interaction between the person and his/her surrounding, simultaneously determining what (s)he could do and what (s)he will do. This sense of touch is a key conceptual component in Guy Debord’s ludic activity of the dérive. In this practice,

instead of going to specific destinations, the dérive practitioner drifts through the city in an active and attentive way, paying attention and looking and feeling, allowing the city and it's psychogeography to direct one's movement, and thus "restore meaning to the spaces of circulation of the city"(de Sousa e Silva & Hjorth, 2009). Being in touch with the city differently, then, may result in different restored meanings, and the player may be encouraged or influenced to navigate the city in new ways. Typically the study of urban mobility investigate how people move from place to place to perform different functions (Hannam et al, 2006), but recent studies had also explored the activities urban dwellers perform in their travels (Lyons & Urry, 2005). This thesis discusses how the experience of the journey in between places can be influenced by playing a LBMG, that is to say by mediating the urban experiences in both the in-game city and the out-game city.

2.3 Playing the city

Scholarship in playing behaviour argue that playfulness predate civilisation and society (Stenros, 2015). This is easy to understand, as we consider that animals and children both know how to play on an innate level. In earlier human society, playing and living were overlapped to form a near-constant liminality, often in the forms of rituals that negotiate social orders (Deterdine, 2015). Playing a game, as we know it today, however, is quite a different kind of activity from this general playfulness.

Roger Caillois had placed all forms of human play into a conceptual spectrum between paidia, that's to say free, exploratory play, and ludus, that's to say rule-based and goal oriented play (Walz & Deterdin, 2015, p.7). This is a clarifying

distinction. In the following review on playfulness and the playing of games, we should be reminded of this distinction that while the two ideas of play can coincide, when the playing of games is discussed, we should understand this specific manner of playing as interaction with the games' rules.

Using the urban environment as playful space has a long historical tradition. As de Souza e Silva & Hjorth (2009) had presented in a historical overview, the city had always held ludic potentials. Before any GPS system were imaginable, urban dwellers were being playful in cities and actively "playing with the more rigid social, anatomical, and urban structures that determine proper walking behaviour" (Salen & Zimmerman, 2003). The classical notion of the flâneur presents an example of the pre-mobile ludicity: the flâneur was an urban gentleman-wanderer, consuming the visual reality of the city with always attentive eyes (de Souza e Silva & Hjorth, 2009).

Another example is the practice of the Parkour. In this urban sport, practitioners ("Traceurs") move through the city environment in the most efficient (and thus often unconventional) ways. In doing so parkour "contributes directly to the physical and mental wellbeing of participants and generates strong social connections between place, mind and body." (Rowlinson & Guralda, 2011, p.21). Parkour allows traceurs to perceive and even create new navigating and experiential possibilities that the city can offer.

These two examples of urban play have a key feature in common: they eliminate "the boundaries of a distinct and separate play space." (de Souza e Silva & Hjorth, 2009). As far as the present thesis study is concerned, this may be the most significant quality of urban play, that the urban player has the power to freely move in and out

of the magic-circle of play and negotiate their experience between the play-world and the non-play-world. Alfrink (2015) had outlined how gameful ideas can be used in the design of cities, thus coining the term “the gameful-city”. Other scholars had used terms such as the “playful city” or “playable city” (Borden, 2007). What we must note about all of these cities is that they do not exist independent of a “serious no-game city”, but rather that playful spaces are at the same time also non-playful spaces, depending solely on the activities and mentality of the player-citizen.

In introducing dérive, Debord had defined this ludic activity as “playful constructive”. (Debord, 1958). Lefebvre had long proposed the perspective that spaces are socially constructed, and also commented that play is a sub-set of social activities, therefore also has constructive qualities and powers (Lefebvre, 1996). De Certeau, in his famous notion of the use of constructive tactics within the top-down dominating urban strategy, had commented that the user (of a city or any other pre-determined systems such as language) “make (bricolent) innumerable and infinitesimal transformations of and within the dominant cultural economy in order to adapt it to their own interests and their own rules.” (de Certeau, 1984). More recently, Kars Alfrink has commented that “The Gameful City can be thought of as a tool for players with which they can invent improved ways of living.” (Alfrink, 2015, p.530), and refer to playful activities in the urban environment as “soft” urbanism which reprograms space, as opposed to harder urbanism that seek to alter the physical urban infrastructure. Concluding the insights from this tradition of urban playfulness, we may understand that playing in a city can dynamically and actively transform its urban qualities into new and unforeseen forms. This is to say, playing the city is an active means of city-making.

2.4 Location Based Mobile Games & the City

Location-based mobile-games (LBMGs) are relatively new inventions, however they carry the historical legacy of many previous forms of playful urban activities (de Souza e Silva & Hjorth, 2009). It is, therefore, highly relevant to understand LBMGs in context of existing scholarship on these earlier playful forms.

Recalling the notion of the imaginary city and mediated city from earlier in this text, there seems to be an infinite number of cities co-existing at the same time and at the same space. This is true in the sense that there can be infinite number of understandings and conceptualisation of a city. For scholarly literature, this also implies that there can be infinite terminologies on how to label the different cities in relationship to technology, information, imagination, meanings and the media. The Cybercity (Grahm, 2004), the Hybrid-spaces city (de Souza e Silva, 2008), Lapenta's distinction and convergence between the "geosphere" and the "infosphere" (Lapenta, 2011), the list can extend infinitely. In research, it is most relevant to select from these infinite cities the ones which best answer the present question we have put forward about urbanity and the lived experience of urban people.

Most relevantly for this study, Crang, Crosbie & Grahm (2007) introduced the notion of the city's "informational landscape", and Brighenti (2010) further explained this idea, interpreting that "(the informational landscape) should not be regarded as the immaterial counterpart of the physically built environment: information is always materially grounded and embedded, and a territory is precisely the prolongation between these layers." This is further clarified when considering his definition of

territory: “A territory is to be understood not as an object, nor as a space, but rather as an act: a territory is something one makes vis-à-vis others.” (Brighenti, 2010, p.477)

It is from this idea of the active construction of territory that we can come back to how players of Ingress construct and mediate their urban experiences while playing in the In-Game City and the Out-Game City. On this point we may, firstly, consider the theoretical insights from Moore (2017), who discussed the playing of Ingress as “situated practice”. For Moore, the situated practice of playing Ingress is an interaction between the existing settings of the material & social-cultural urban environment, and the players’ own understanding of and engagement with said settings, in the context of the rules of the Ingress game. As such, because the formalised and planned rules of the game and the unpredictable & unplanned circumstance of the urban environment both contribute to determining how players engage with the said urban setting, the boundaries between play and non-play become blurred. Behaviours that were previously regular forms of urban mobility, such as “navigation, commuting, wandering and exploring” (P.205), are all recontexualised into forms of play. In the situated practice of playing Ingress, the game urbanity and the non-game urbanity merge into a new urbanity that is rich and complex.

Secondly, we may take inspiration from Atkinson and Willis’ (2007) notion of the Ludodrome. According to Atkinson and Willis, the urban experiences players have in playing a video game (in this case Grand Theft Auto 3) can “slips” and “segues” into players’ urban experience in the out-game world, and their experiences in the physical cities also transfer into their approach to gaming. In the end, players do not

experience urbanity exclusively in-game or out-game, but rather in the Ludodrome: "a mediated space between immersion in urban simulation and a real world that is simultaneously generated, destabilized and blurred by the effect of such gameplay." (Atkinson & Willis, 2007, 818).

As such, this study notes that a virtual city and a physical city for Ingress players are not distinct from each other but are indeed tightly overlapped. Furthermore, the conceptualization of the virtual and physical as two distinct cities is not the most clarifying analytical framework, as both the virtual city and the physical city work in tandem to produce sensorial information and meanings and contexts, and the contributions from these two cities are overlapped precisely onto the player's activity of playing, and onto the player's active construction/mediation of their urban experience. Instead, this thesis opts for a two-city conception that make the analytical divide between an In-Game City, the urban environment which exists when the Ingress Game is engaged (both virtually and physically), and an Out-Game City, the urban environment which exists regardless of whether the game rules are engaged with or not. As discussed in this theoretical review, any analytical conception of the multi-dimensional multi-layered media-city do not serve as an absolute description of the urban phenomenon, but rather serve as the best conceptual model to answer the question at hand. By approaching Ingress in terms of the In-Game City and the Out-Game City, this research seeks to shed light on the specific process of playing Ingress and the role it has in the players' urban experiences. That is to say, this research seeks to provide an account of *how* players construct an urban experience in the practices of playing Ingress.

3. Methodology

This thesis had opted for a research design of qualitative in-depth interviews with experienced Ingress players, followed by a thematic analysis of the interview transcripts. In this chapter the research design is explained in detail, and when necessary supported with theoretical discussion regarding the method's implication for the research's generalizability.

3.1 Choosing Ingress

As elaborated on in the Introduction chapter, Ingress is one of the most popular LBMGs in existence, and has an established active player-base who perform playing practices that were developed over an extended period of time since 2013. Ingress is, therefore, an appropriate choice for a study aiming to understand the playing of LBMGs in the urban context.

Note that this qualitative study does not claim to have a level of generalizability such that Ingress serves as a typical LBMG representing all other LBMGs. Neither does this study claim that the small number of Ingress players studied herein can represent all LBMG players. As LBMGs are a relatively new genre of games and a new form of urban activity, it may be difficult or even impossible to define what is a typical LBMG. However, since Ingress is a prominent and popular LBMG, the study of this case explores and describes the range of possible phenomena and themes the playing of a LBMG can involve, in respect to the players' urban experience in both an In-Game City and an Out-Game City. The qualitative study of prominent and culturally relevant cases in games had often served to inform academia in this way (Williams, 2005).

3.2 Qualitative In-depth Interviews

3.2.1 Why qualitative interviews?

Semi-structured qualitative interview is selected as the method of data gathering for this research, for the primary reason that it is an effective method for providing an understanding of human experience, feelings, interpretations and meaning-making (Lindolf & Taylor, 2010). In contrast to quantitative methods, qualitative Interviews allow for a deeper investigation into an individual's point of view and therefore can provide a richer and more thorough account of the individual's lived reality, an account situated in context of the experience as a whole (Williams, 2005) . In the study of video games, there is a rich tradition of qualitative methodology, mostly stemming from the Critical-Cultural theorist approach (Williams, 2005). In the area of Urban Media Studies, qualitative interview methodology had also proven to produce relevant and insightful findings (Tosoni & Tarantino, 2013; Firth, 2013; Scifo, 2013). More specifically, the in-depth interview methodology had been used in recent studies regarding the role of video-games in the urban experience, with promising and informative outcomes (Atkinson & Willis, 2007; de Souza e Silva, 2008)

The qualitative interview method is also fitting for this thesis' theoretical framework. Firstly, the experience and meanings of an urban environment is constructed through social interaction and through individuals' tactics in using that environment (Lefebvre, 1996; de Certeau, 1984). Secondly, digital space and urban media can only be understood through their representational quality as experienced and used by people (Ridell, 2013; Zook & Grahm, 2007). Thirdly, locative media (such as a location-based mobile game), by definition, primarily exists in the users' locationally situated and embodied experience of that media. This is to say that the experience of locative media content may be more so something users do, rather than something

they're provided with (McCullough, 2006). Accordingly, as the qualitative in-depth interview is a methodology appropriate for understanding human experiences and intentions, it is then also appropriate for gathering data that will answer this thesis' research question. In the same manner that Jane Jacobs was able to produce poignant and incisive insights about urbanism from qualitative investigations into urban inhabitants' use of the city, qualitative methodology in the research of urban locative media-use also imply similar knowledge-finding potentials (McCullough, 2006).

In the spring of 2017, a total of 13 semi-structed interviews were conducted for this thesis. The interviews loosely followed an interview-guide with a list of questions, which can be found at Appendix A. When the participants mentioned new and interesting experiences or knowledge, however, follow-up questions were asked to discuss these topics more. The interviews lasted between 40 and 90 minutes. Overall, the order of the questions progressed from the general to the specific. Some new topics brought up in earlier interviews are also discussed with other players in later interviews. Before the interviews, the players were informed that the interviews will be anonymous.

Appointments were made for the interviews to take place at locations of participants' choice. The intention of this is to provide the participants with a comfortable setting which may encourage them to share their experience more openly. Therefore 8 interviews were conducted in cafes, 2 were in the participants' cars on the way to Ingress-related activities, 2 were in sitting areas of outdoor public spaces, and 1 in the participant's home. The strategy for finding and selecting participants is detailed below.

3.2.2 Sampling strategy

The sampling approach for this thesis research was a combination of purposeful, theoretical sampling and snowball sampling. These techniques do not aim to produce a generalisable or representative sample of all Ingress players, but rather seek to explore and describe in more detail the rich phenomena of playing. Purposeful-theoretical sampling is an appropriate technique for selecting participants who are likely to be rich sources of information (Coyne, 1997). Snowball sampling is an appropriate technique for accessing otherwise difficult to reach populations such as niche communities or elites (Atkinson & Flint, 2001). This thesis had purposely chosen to interview experienced players of Ingress, with a theoretical assumption that experienced players have richer information and experiences to share in comparison with novice players. As the community of experienced Ingress players is an elite group within a niche group, snowball sampling is effective in helping the researcher to access relevant participants.

Initially the researcher had set the criteria for “experienced player” as having an in-game level of 8 or above. This is because at level 8 the player gains the ability to perform all available activities in Ingress, and thus are experiencing the game fully and can also participate in higher level strategic play. Using his own in-game account to access the in-game environment, the researcher started to identify experienced players who are playing in Rotterdam, and started to contact many of them via the in-game text-communication function (“Comm”). Several players responded, and after some initial introduction the researcher was added to the local high-level player chatrooms in the instant messaging app Telegram. In this chatroom the researcher was able to contact many other high level players active in the Rotterdam area. Some

who participated in the interview also recommended contacts with other experienced players who they personally know. 10 participants for the interviews were acquired through these means of contact. Additionally, 3 participants were experienced players who the researcher had personally encountered during several instances of play in the urban environment of Rotterdam.

Over all, the 13 participants consist of 11 males and 2 females. The age of the participants ranged from 19 to 52, with an average age of 35. All of the participants had in-game levels above level 8, except for one, who was level 6 at the time of the interview but had a previous account of level 16, which was the highest achievable level in game. Relevantly, with his previous account he was also one of the highest-ranked players in the Netherlands in terms of in-game points.

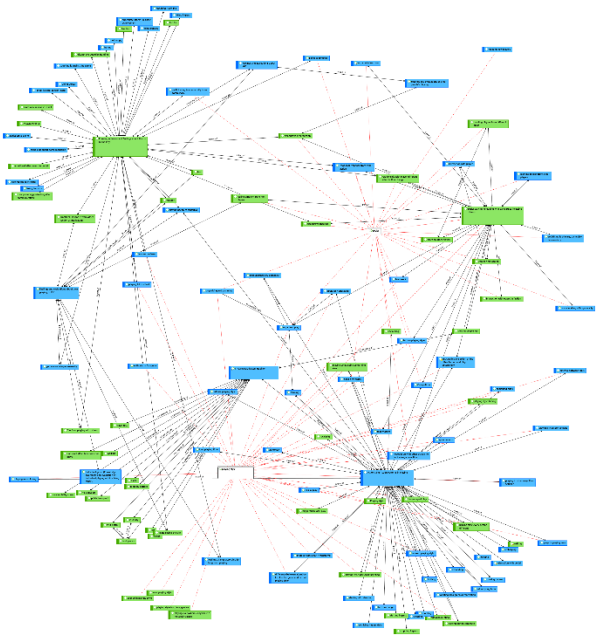
It is also worth mentioning that due to the strategically competitive nature of the game, players may be reluctant to share information about playing activities with the opposite in-game faction. Therefore, the researcher selected most participants from the same faction as his own in-game account, so that they may discuss their in-game experience more openly. Thus 11 participants in this research were from the Enlightened faction, which made up a great majority. However there were also 2 participants from the Resistance faction to provide some balance of perspective in this regard.

3.3 Thematic analysis

The interviews were recorded in audio, and were later transcribed into text. In total the interviews produced 171 pages of text transcripts. The texts were then analysed

by systematic thematic analysis, using the qualitative research software Atlas.ti.

Thematic analysis was chosen as the analytical technique because it has proven to produce rich descriptions of themes in a phenomenon (Floresch et al,. 2010). The thematic analysis were conducted following three stages of coding: Open coding, axial coding, and selective coding (Boeije, 2010). The data was broken up into small segments of quotations and each quotation was coded with thematic labels. While the coding process was informed by this thesis' theoretical framework, no codes were previously created, but rather the open codes were created as they were recognised in coding. The open codes are then categorised and organised to identify themes and subthemes, as well as relationship between themes (e.g. which themes are opposites of each other, which themes are about the same master-theme etc). The Atlas.ti network tool was used as a visual aid in this stage of analysis, in organising the understanding of relationships between themes.



Although the themes were produced from the analysis itself, the researcher was sensitised by theoretical awareness before the analysis, namely a conception of playing at two cities at once. The results of the analysis, as will be elaborated on in the following chapter, was indeed compatible with this two-city conception.

3.4 Role of the researcher

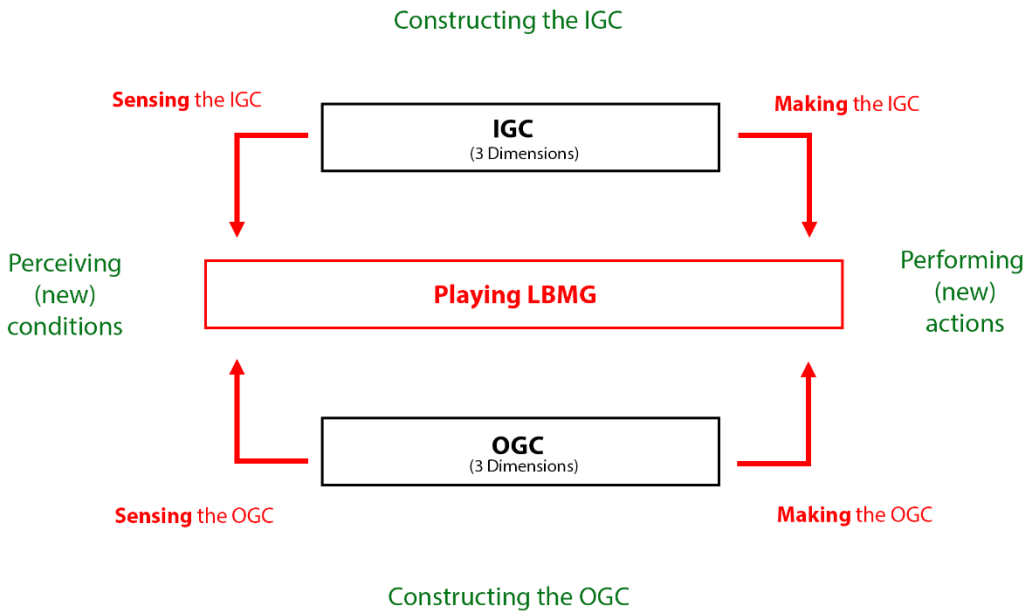
In qualitative research it is crucial for the researcher to be conscious that he/she is also an instrument of research (Lindlof & Taylor, 2010). In the case of this thesis, the researcher's experience of playing and previous knowledge about playing Ingress had indeed informed both the collection and the analysis of data. At the time of the interview period, the researcher was a newly level 8 player in game. During the process of contacting players and familiarising himself with them, the researcher had also participated in several instances of organised play including several "farms" and a nation-wide "big field" operation.

As past literature on video game studies recommend, "researcher of games should play games" (Williams, 2005, p.13). Playing the game at hand functions as a checking mechanism, making sure that the data is appropriately contexualised (Williams, 2005). The researcher's personal experience in the game allow for more immediate and precise understanding of the game mechanisms and in-game interactions, ideas that may be more distant to non-players. Furthermore, the researcher's Level 8 identity allows him to contribute relevantly to in-game strategies such as farming, which to a certain extent also motivate the experienced players to participate in the research, to include him in the in-game conversations and to share information. While a non-playing researcher may invite more neutral and objective interviews

responses, the player-researcher invite responses that are richer with player-identity-related emotions and motivations, and with more vivid accounts of gameplay experience, as a fellow player (this researcher) is more likely to understand these accounts. With this in mind, the interaction between the participants and the researcher's player-identity should be considered as a part of the data.

4 Result

This chapter presents the results of the systematic thematic analysis. After three stages of coding, an understanding of how players mediate their playing experiences both in the In-Game City (IGC) and the Out-Game City (OGC) is formed. The following diagram illustrates this understanding.



As defined in the previous theoretical section, "Playing Location-Based Mobile Game" is defined in this thesis as engaging and interacting with the rules of the LBMG, in this case with the rules of Ingress. Playing can be done both socially and individually. Playing can involve the players *sensing the city*, that is to say perceiving the existing conditions in the IGC and the OGC, and the players *making the city*, that is to say exercising agency to create, remove or alter elements in the IGC and the OGC. This section of the thesis presents an outlook of what these **four processes of playing a LBMG** consist of, and how they relate to each other. Where relevant, quotes from the interview data are presented as example. Although the quotes

presented below may be trimmed to only include the most relevant information, in selecting the quotes their contexts were always taken into consideration. Real names and usernames that were mentioned in the quotes were replaced with randomly created pseudonyms. Real names were replaced with randomly created first names, usernames were replaced with randomly created usernames with a two-digit number attached at the end, e.g. Kilowog88.

4.1 Constructing the In-Game City

The In-Game City (IGC) is used in this thesis to label the urban environment which exists when the rules of the Ingress game are engaged by players. The IGC has many dimensions. Firstly, the IGC has a material dimension, which is the material reality in which the rules of the game can be interacted with, that is to say the Ingress software and all hardware devices that the software runs on. This include the smartphones which run the Ingress application, personal computers which access the Ingress Intel website, the official servers which host in-game activities and data, and on a broader sense the mobile network and GPS infrastructure all over the world that are necessary for playing to occur.

Secondly, the IGC has an imaginary dimension, which is an understanding and mental conception of an in-game environment, a conception the players have when they engage with the game's material dimension. This includes awareness and knowledge of in-game places called "portals", awareness and knowledge of the current status of portals (for example what levels they are and to which faction they currently belong to), awareness and knowledge of in-game relationships between portals (that is to say their strategic potentials according to the game's rules, for example whether they are easy to reach, or whether they are in close proximity to each other), the in-game

changes and patterns that are recognisable over time, which often include other players' playing patterns. Feelings and emotions players have about said places or in-game patterns also contribute to this imaginary dimension of the IGC.

Thirdly, the IGC has a social dimension, which includes knowledge, awareness, opinions and feelings about the activities and identities of the other players who engage with the game. The social dimension also includes the relationships and interactions players can have with each other, both with those in the same faction and those in the opposing one. The interactions can include cooperative playing, as well as playing against each other. The relationships can range from friendly to hostile. As there are no Non-Player Characters or Non-Player Activities in the game, all in-game contents are in fact produced by other players' playing. The great majority of portals in the portal database were also initially submitted to Niantic by fellow players. Therefore it is fair to say that any act of playing is in fact a form of social interaction with other players and their playing.

The 3 dimensions of the IGC in Ingress are formed by each other, framed by each other, and it is not very meaningful to understand any one of them as an isolated theme from the others. When any style of playing is performed, that is to say whenever a player engages with the rules of the Ingress game, he/she would also have to be engaged with all 3 dimensions of the In-Game City.

With the IGC thus defined, the present analysis had identified two main processes in the playing of an LBMG which construct the IGC: "Sensing the In-Game City" and "Making the In-Game City". The former, Sensing the IGC, consists of players being aware and/or paying attention to conditions and elements in the IGC. The latter,

Making the IGC, consists of players actively causing changes in the IGC, that is so say creating, removing, or altering conditions and elements in the IGC. Together, the two processes cover how players construct and experience the In-Game City in the act of playing.

Note that the two processes are not distinct and isolated from each other. On the contrary, they are closely related, and some specific playing activities take part in both processes at once. It is, therefore, relevant to understand the two processes as relatives to each other: some elements of play are more “Sensing” and some are more “Making”. The following section will illustrate these elements of play that are involved in the two processes.

4.1.1 Sensing the In-game City

Sensing the In-Game City consists of players being aware of and/or paying attention to the IGC. This process can happen via the bodily senses, including vision, hearing, and the haptic senses. In vision, players can sense the IGC by looking at the Ingress mobile app (often referred to as the Scanner) and looking at the online Intel Map. In the app they can see the graphical representation of in-game elements in their surroundings such as portals, links and fields, as well as far-away portals which they have physically been to and have preserved a “portal key” of. The portals are always coupled with a photo and a brief description. Players can, of course, also see the actual objects which the in-game portals are based on in real life, if the players are physically present at the portal locations. In the online Intel Map, players can see a top-down overview of the in-game map, and through the Intel Map a player can look

at the in-game situation at any geolocation in the game. In hearing, players can hear the notifications from the phones if their own portals are being attacked by other players. Listening to the Ingress in-game audio effects during playing is unusual, but it was also reported by one player. In the haptic senses, that is to say the senses of orienting the body in relation to the physical environment, players can walk "toward" a portal, walk "past" a portal, or stand "next" to a portal. Very often, the senses are used in combination. For an example of sensing in-game portals, when asked about the difference between playing in a foreign city compared to playing in the familiar Rotterdam, Player M described:

> *Player M: "…(when playing in a foreign city) it's a bit different, you look more at the scanner, where do I have to go to go to that portal I want to? And playing here in Rotterdam, you just see a portal, you're just bicycling, and it's like oh yes, I think there's a portal here, instead of looking at your scanner and seeing there's a portal, it's, here should be a portal, let's stop, (then) take out the scanner and check."*

Sensing the IGC can also happen via a conceptual capacity and via imagination, even while the players are not stimulated in their bodily senses. In these cases the players are interacting less so with the material dimension of the IGC, but more with the imaginary and social dimensions. When senses are not stimulated but this mental engagement occurs, Sensing the IGC consists more of a general awareness of the IGC. When the senses are stimulated (e.g. when player sees a portal on the phone), Sensing the IGC consists of an immediate and specific attention regarding what was just sensed in the IGC. In Player M's example, both ways of sensing the IGC are utilised in tandem. In the following section these two ways of sensing are elaborated

upon.

4.1.1.1 Immediate Attention and Constant Awareness

Paying specific and immediate attention to the IGC is an active process and typically consists of looking at the Ingress mobile app and/or looking at the in-game Intel Map on the web browser. This immediate attention can occur following the player's intention to perform some actions in the game, or it can occur as a reaction to an in-game stimulus. In both scenarios, the players pay attention to the IGC to assess the in-game condition, in order to form a plan regarding how to play. Illustrating this, the green faction Player H spoke about paying attention to an opposition player's in-game actions and respond accordingly:

> *Player H: "Yeah, well this asshole is every day doing the same route destroying every portal so, fuck that shit, let's put a stop to it. That's funny. I was sharing a route with a Smurf (nickname for players in the blue Resistance faction), and he was on his bike but he was taking different routes every day, and but some portals we both had, and he came by in the morning a little bit earlier than I did, so he destroys it and make it blue, and I'd come by and flip them… But now he's on a different route because the portals stay green, hahaha. So I will find the way he drives now, because it has to be destroyed as well. But that's funny, because yeah, you want to take control of an area."*

In this case, Player H was paying immediate attention to the in-game conditions that were happening in his immediate environment (route to work), and is more concerned with his individual play. Another player who takes a more coordinative

and organising role in strategic play that involve more players and bigger geographic scale, may pay specific attention to in-game areas far from his/her geolocation, for strategic purposes. Player G, for example, explains how he pays attention to different regions on the in-game Intel Map to spot strategic activities from the opposite team:

> *Player G: You look for disturbances (on the Intel Map) , so things that are not normal. At the moment I see as a bit of alert from the Resistance, then we got an alert, we can alert people. Ok we see clearing from this area, we expect this lane (gestures to the intel map). We expect this field, that kind of things. And people in that area can react on it… destroy it, block it, whatever is possible.*

We may note that Player G mentioned looking for activities that are "not normal", indicating that he is also aware of "normal" playing activity. As illustrated by each one of the above examples, after some period of paying immediate attention to the IGC, players begin to form knowledge of in-game locations and knowledge of in-game patterns. Player M mentioned knowing where the portals are in relation to his bicycling body without having to look at the scanner, and Player H mentioned the playing pattern and movement pattern of a fellow player. These knowledge become a part of the players' mental understanding of the IGC in the form of a general and constant awareness. When playing Ingress, that is to say when players engage with the rules of Ingress in some capacity, they can refer to these knowledge without needing to access the IGC with their senses. Often, for example, players in the green Enlightened faction discuss an area of Rotterdam, Noordeiland, which is always occupied by the blue Resistance faction. Enlightened players can discuss the general difficulty of playing on Noordeiland and the occasional attempts to "make it green" for a while, knowing that in the IGC the area will normally be blue. Players do not

have to look at the in-game intel map to have these discussions, but rather can refer to their general knowledge of the in-game area. In the following quote, as Player X explains the way he pays attention to the in-game activities in an area called Nesselande, he also demonstrates how these two types of sensing interact:

> *Player X: … I watch Nesselande, because it's not so far from here, 5 minutes of biking to Nesselande, and I know the people there also. Super99, Boss55 and others. We kept that green as well. Except on Tuesdays, there's Kilowog88, he makes it always blue. Friday we build it up again.*
>
> *Researcher : So there's a pattern.*
>
> *Player X: Yeah every week's the same. Don't put AXAs (in-game item) on it, he'll get rid of them. That's no use.*

While he would "watch" the area by specifically looking at the Ingress App and Intel Map, his knowledge of the in-game patterns in that area also contribute information to and enrich what he sees. Paying specific immediate attention to the IGC, and having a general awareness to the IGC, are two ways of sensing the IGC that inform each other. They make up an important duality in the process of Sensing the IGC. The following section bring attention to another such duality.

4.1.1.2 Attention to Individual Playing and Attention to Collective Playing

As previously described, the IGC of Ingress primarily consists of the activities of players. An important theme in understanding how players sense the IGC is, therefore, understanding how they pay attention to all these different playing

activities. In the present analysis, an important duality is recognised between when a player is paying attention to his/her own playing, and when a player is paying attention to other players' playing.

Of course in order to play at all, both kinds of attention are required to an extent. However how a player chooses to allocate their attention across this duality may indicate different approaches to playing the game, namely the different ways they are motivated to play.

When paying more attention to one's own playing, that's to say paying more attention to one's own engagement with the Ingress game rules, a player is said to be playing the "individual game". This can involve player's looking at the IGC with the intention to identify ways to score in-game action points ("AP"), or with the intention to make his/her areas into his/her own colour. This may also involve the non-competitive play of finding, choosing and walking specific in-game routes to collect pieces of images, "banners", as trophies. The other kind of trophies, "badges", are also available to players, indicating several in-game achievements such as having interacted with a high number of portals or holding on to a single portal for a long consecutive number of days (the "Guardian" badge). Usually when a player takes the approach to focus on these individual achievements and actions, their attention are more focused on their immediate in-game conditions near the time and place of play. Player C exercises this approach:

> *Player C: "...I play for myself. That means I'm not someone who's looking if Person A is doing that, I'm gonna do that, or if one area is always green or always blue, it doesn't influence my gameplay. If I got time, sure I look on the scanner to see where can I get*

points, where can I make fields, like last week, I did have some extra time, so I made some extra kilometres to get the fields. And otherwise I'm not interested. I play my own game, and the more is happening in my neighbourhood, sure I see it with my daily recharge round, and then I'm happy if things turn out to be green, that means points."

As opposed to the individual game, the alternative approach may be called the "collective game", or a game in which the individual's in-game actions and achievements do not matter as much as the collective advantage of the in-game faction, and therefore the collective disadvantage of the in-game oppositional faction. When a player takes this approach of playing, he/she pays more attention to other people's playing, both those from his/her own faction and the oppositional one, in order to perform the playing action that serves his/her own faction's strategic goals. This may also come with the consequence of less attention being paid to the players' immediate in-game environment. Player G expresses this trend in his own playing, where he discussed his shift in in-game attention away from the town of Delft where he lives and plays, and into a bigger regional and national in-game-attention point of view:

Player G: "…I don't look a lot at Delft. When there's portal count and that kinda things, ok, I look at Delft. But most of the time it's just a little blip in my map (since he looks at a bigger zoom level)… So I've assigned a new point of contact for Delft itself for the local things… That point of contact, he's looking at a lot of Delft, and when something happens he also tells me. So Delft is being watched, but I don't watch it myself, I don't mind it that hard."

It should be noted that players can also shift between two approaches of attentions, depending on the playing style and specific playing activity they are engaged with during a specific moment of play. During a playing event (like the Niantic-organised "Anomalies" or a player-organised "Operation") , players participate in strategic play which require multiple members to participate at the same time in order to succeed. In these cases, players pay immense attention to others' playing, as it is required for performing their immediate actions in-game. The same players, however, may be otherwise paying more attention to their own playing and not to others during their day-to-day casual playing activities.

To summarize, in understanding how players sense the In-Game City, two dualities are crucial: the duality between Immediate Attention and Constant Awareness, and the duality between Attention to Individual Playing and Attention to Collective Playing (other people's playing).

4.1.2 Making the In-game City

Making the In-Game City involves actions which cause changes in the IGC. This can mean, most directly, an interaction with the material dimension of the IGC, that is to say interact with the game through the Ingress mobile app: occupying portals, destroying portals, forming links and fields and so on. Making the city can also mean, however, causing changes in the other two dimensions of the IGC: the imaginary and the social. These interactions can involve, for example, creating In-Game patterns to be known by other players, or the forming in opinions and feelings about the IGC. These acts of making the IGC are elaborated on in this section.

4.1.2.1 Actions in the In-Game City: Producing Playing Patterns

It may be most intuitive to understand “playing Ingress” as “the use of the Ingress mobile app”. The use of the app is indeed a central activity in playing. In their Ingress app, players are able to interact with the game software and cause changes in it that are consequential for the in-game conditions, which in turn is consequential for other players. Namely, players can capture points of interests, “portals”, and establish links between portals which create territories, “fields”, in the player’s faction colour (blue or green). The surface area of these fields scores in-game points. Furthermore, players can destroy the territories of the oppositional faction and then capture these territories as their own. Players can also acquire virtual in-game items from interacting with portals (referred to as “hacking portals” in the game). Using these virtual items, players can destroy oppositional portals more effectively or upgrade portals controlled by their own faction to make them more difficult to destroy.

Although these are simple actions, combinations of them over an extended period of time may create more complex conditions such as individual playing patterns and collective playing patterns. From these patterns, players can then deduce strategic importance of certain places, and strategic relationships between places.

Individual playing patterns are produced simply by players’ repetition of similar in-game actions, such as capturing the same portals , destroying the same portals, or building the same fields consistently over time. These patterns are often produced through the players’ mobility patterns, as well as through their locations of home and of work:

> *Player C: “The whole of the metro line is kind of blue, because there is a lot of blue players using the metro every morning so. And that’s what you want, you want things*

to do once or twice a day…"

Player K: "So yeah, they actually know where you live because if you do something in the evening or night from your home portal, it's on the communication (in the app), so they see that that's your home portal."

The so called "Home Portal" and "Work Portal" have a certain significance in the game, as these are specific portals with geolocations that specific players have access to throughout the day, and thus these players are able to upgrade these portals to hack a high volume of high quality in-game virtual items from them. However it is also these upgrades that encourage other players to identify them as someone's "Home Portals" or "Work Portals", and players in the opposite faction may purposely make the effort to destroy them, to prevent the easy procurement of in-game items. Player H explains this interaction:

Player H: "But if you have a home portal, every waking hour… you can hack your home portal and increase your inventory… So if you have a home portal you have a strategic advantage. So the enemy must be crazy not to take down your portal. So if I am the enemy I will take down your home portal… That's a tactical move."

Collective playing patterns are produced when many players' playing patterns combine. These can be natural patterns that occur when individual patterns intersect: Several Rotterdam players had confirmed, for example, that the city centre of Rotterdam is not an area dominated by either faction, and there is in fact little competition over domination in this area because too many players pass through the centre every day. This is to say that portals can easily be destroyed and rebuilt several

times throughout the day, and no real lasting influence can be established. There can also be, however, collective playing patterns that are intentional and planned, and these planned patterns can constitute a faction playing style. As aforementioned, in the city of Rotterdam there is an island, Noordeiland, on which portals are always occupied by the blue Resistance faction and are always upgraded to be difficult to destroy. Player C, an Enlightened player, suggests how this is organised:

> *Player C: "The stories I hear, and I can't confirm anything, is that Res, especially Res Rotterdam, is very hierarchical. It's like an army. So there are people assigned to do stuff, and they get command to do stuff. And some of them get money for their gas, but apart from that, you either do it or not. So if Wandere75 (a player who lives there) says "I need people back in Noordeiland just to show them", normally they want it up on Friday night. Every Friday they are there, so, it's their island."*

Another important example of a collectively organized playing pattern is "farming". This action consists of gathering a group of (at least 8) players to collectively upgrade a number of portals in a certain location, and then "hacking" them together to each procure high quality virtual items. Typically a local faction community has several preferred locations for farms: the locations need to have several portals in close proximity as a condition for highly efficient hacking. While "farms" do not exist as any labelled locations in the in-game software, they exist in consistent collective playing patterns. A corresponding pattern, then, is the play of intercepting farms. This is the practice of travelling to the location of a farm of the opposite faction while it was being built, and destroying the farm in time, before they can acquire enough items. Evaluating the likelihood of farms and likelihood of interceptions, and organize play accordingly, is a typical display of collective strategic interaction between the two in-

game factions. Player G provided an account of this interaction at a farm:

> *Player G: They intercept like you call it, the Resistance come and shoot down the farm. It's an intercept. It wasn't hard in Delft. There wasn't many times intercept. If intercept came, most of the time it was half a round behind us, so we were building up the farm again and again without really interference of him…Also you have the farm itself is too late intercepted most of the times. Most of the time I come, this time we are burned (finished with farming), then somebody (from) the Resistance shows up, so you can make a joke, says Hi we're going home, they're burned, bye, we're done."*

Beyond the urban environment of a city, on a regional, national or international scale of play, the strategic in-game meanings of places and the strategic relationships between them become more complex. The organizational processes needed for this complex level of play (such as linking portals between countries and covering entire countries with fields) is highly fascinating but unfortunately it is beyond the scope of the present thesis to investigate them in detail. It should be mentioned, however, that when a city's player community is involved at an international level of play (such as during an official Anomaly event or the Shard event), many local in-game patterns take up greater strategic significance and are reproduced and/or modified, which make for very interactive, engaging and intensive playing occasions.

Lastly, another element of in-game actions that contribute to making the IGC are the actions of cheating, i.e. playing in ways that are against the game rules. This is usually done by using external software applications other than the Ingress mobile app and Intel Map webpage. The major cheating practices including Spoofing (generating artificial GPS locations for an account), Bots (accounts created to play automatically

as directed by software), and Scrapping and archiving the in-game data. These practices interact with the in-game city and produce conditions in them. Several players reported, for example, that in the town of Maassluis, the in-game area is infamously dominated by spoofing robot accounts, and it is very difficult to play against them. Since spoofing players do not need to physically travel distances to capture or destroy distant portals, this give them an advantage in play (which in term can provide an advantage for their faction). Players also expressed that a major theme in playing Ingress, especially in the period of 2016-2017, was interacting with cheating behaviour. Player Z gave an account of the style of play in areas of Russia and Poland, where bots directed by algorithms from both factions are constantly in competition with each other, while real players can only play by exploiting the lags in the algorithms' reaction time. In Rotterdam, the local community tend to deal with cheating by identifying cheating players and reporting them to Niantic, hoping the cheating accounts may be banned. As with most games, cheating practices is possible and likely to happen (Stenros, 2015). Dealing with those who play in ways that challenge the rules of the game is, therefore, an essential component in any game. By identifying and dealing with cheaters, the rules of a game are emphasised and enforced, and the in-game world based on game rules become extra visible in a moment of dealing with cheating practices.

4.1.2.2 Forming Ideas about the IGC: Ideas about one's own playing &Ideas about others' playing

As current literature on the subject suggests, players of video games do not passively "soak up" the simulated experiences. Rather, players actively engage with the experience to form habits, evaluations, opinions and feelings in their playing, and

thus curate a familiarity with the game, which in turn define gameplay (Murray, 2005). In playing Ingress this is also the case. Apart from producing directly visible changes and patterns of changes in the material Ingress game, players also produce the imaginary and social dimensions of the In-Game City by forming evaluations, opinions and feelings about the IGC. Indeed, this thesis argues that the evaluations, opinions and feelings about the IGC are not passively sensed from the game but rather are actively produced by players. In the following section these elements are collectively labelled as "ideas" about the IGC.

This analysis recognises two themes in the forming of these ideas about the IGC. Firstly, players can form ideas about their own playing. These include recognising emotions in their own engagement with the game, having preferences for different actions of play and styles of play, and evaluations of their own playing behaviour. Player D illustrates the forming of these ideas as he explains the different in game experience between a newer player and a seasoned player:

> *Player D: Like if you capture your first portal, you're very proud of yourself…You're playing for 5 days, and your first portal you already have for three days. So you're really happy about that. And somebody killing that, feels like, this level 14, 16 player killing my portal, why the fuck is he not leaving me alone? This, it's the perspective of the game you have. If you captured 10,000 portals already, different ones, and they have killed (them) 30,000 times, your perspective is a lot different, so you will not care about that one portal.*

A prominent idea about one's own playing which was mentioned by several players, was the notion of what is considered "fun" and what is considered "not fun". "Fun" is

often associated with the process of acquiring in-game achievements, as well as the process of playing with others in teamwork. “Not fun” is associated with play-activities that have become repetitive, boring, or stressful, as well as play-activities that are too difficult. Player Z discussed his playing behaviour where, for a period of time, he would regularly go to the Noordeiland area to destroy portals from the opposite faction:

> *Player Z: “…It’s just something that needs to be done, because they get too strong too easily. But it’s no fun. So you should go there, ok, I got the day off, that means I have to get the gear. So you walk around Noordeeiland to get your gear, after you’ve had this gear, you use all this gear to take it out. And then you leave with no gear. It takes a long time to do on your own… And at some point there’s like, it’s no fun in doing this. It’s just a job. And that’s not good.”*

Secondly, players can form ideas about other players’ playing. This often involve evaluations of other’s playing behaviour, regarding qualities such as whether they are commendable, whether they are fair, whether they are irritating, along with other possible qualities. Sometime these ideas intersect to illustrate the perceived culture and the perceived collective playing style of a player community. Player Z and Player C described their evaluations and opinions about the perceived in-game culture of the opposite faction:

> *Player Z: “…Blue tends to be…the guys who would leave you alone until you’re (level) 8, we can use you, ok now you’re an agent, you are a slave to the big master minds and do these things. And green’s like, oh let’s have fun, let’s have drinks first and do other stuff. It’s far more social, the green side.”*

Player C: "…We once talked to a Smurf (nickname for a blue player), and he said yeah, well it's very easy, you don't have to think, you just get your order what to do. Well I think that's boring, cause I want to have my own orders and I want to have my own initiative."

Ideas about others' playing are most vividly expressed when players discuss the practices that they disapprove, and practices that engendered unpleasant playing experiences. This may involve overly enthusiastic aggressive or defensive play that begin to make playing unenjoyable, i.e. "not fun". These ideas are, in fact, produced as combination of ideas about one's own playing and ideas about others' playing: the two themes of ideas contextualise each other in the making of the imaginary and social dimensions of the IGC. Player H's account of an interaction with another player ,and his opinions about it, demonstrate the production of these ideas:

Player H: "Don't go to Amsterdam. There are some quarters in Amsterdam, where you shoot some bursters, capture some portals, they will follow you on their bike, and they will annoy you until you leave. And that goes the same in Den Haag there. If you enter… I knew a player who lived there, and we played for an evening there. We were playing, turning the neighbourhood green, and within the hour there was a player undoing our work, and staying with us. So just walking behind us, we destroy a portal, he build it again. It was so annoying, well, dude, I'm leveling here, cut me some slack, because it's more interesting when more people can play. And he said I don't care what level you are, you're e a stupid frog (nickname for a green player), you need to die…it's not fun to be harassed like that."

To summarise, Ingress players can form opinions, evaluations and feelings about the IGC as they play. These ideas can be either about their own playing, or about other people's playing. Sometime they can also be about both.

4.1.2.3 Making Social Relationships in the IGC: Relationships defined by roles in collective play

One of Guy Debord's famous theses in the Society of the Spectacles stated that, the media spectacle is "not a collection of images; rather, it is a social relationship between people that is mediated by images" (Debord, 1967, p.5). In considering the In-Game City as a piece of immersive media, which this present thesis does, Debord's notion rings true in several ways. As mentioned in the previous sections, the majority of in-game content in Ingress is produced by fellow players. As such, interacting with these content is always a mediated form of interaction with other players. In these interactions, relationships between players are produced.

This section of the analysis account for the constitution of social relationships that exist in the IGC, this is to say they exist while players engage with the rules of the game. Two major categories of the relationships that are made in the IGC are relationships with players in the opposite faction, and relationships with players in one's own faction. The relationships involve a combination of the two previously mentioned process of making the IGC: a relationship in the IGC consist of players forming playing pattern in context of each other's playing pattern, and forming ideas about each other's playing.

Previous quotes from the data may have already demonstrated some of the playing relationships between factions, for example Player X's weekly interactive play with

other players in Nesselande, or Player H's typical competitive playing routine on his way to work. Similar kind of relationships were often brought up by players, also including statements such as "that player always destroy my Work Portal", or "capturing this portal doesn't matter because every day 3 Smurfs pass through here between 7 and 9 o'clock". These in-game relationships can be superficial, especially as players often limit discussions about gameplay with the other faction in order to not give the in-game opponent a possible advantage. Therefore a lot of what players know about the other factions playing style and playing methods come from observation and analysis but not from bilateral discussions. It is possible to see what an opponent player does in game, but it is difficult to know how or why without more information.

Relationships with players in one's own faction, on the other hand, are more often formed through organised play, and through awareness of each other's role in organised play. Player C described how he would discuss in-game actions with Yoga45, who is considered to be a strategic organiser in S's faction:

> *Player C: "Sometimes if it's important I'll check with Yoga45 or whatever, if it's alright if I do things like that, how he would solve it, and then he gives some advice, but they gives us freedom to do."*

In this example of a relationship, Yoga45 has taken a more informative and instructive role. Player Z provided an account for how some players had taken up these leading, organizational roles, which is to describe how this types of relationships are formed over time:

Player Z: "…It's the first gen, the first generation. The people who started play testing the game in 2013, those were the first players, and they had to make contacts to each other all over the country, because well, there was no community…And if you wanted to built P8 (a high level portal), you had to invite everyone from the Netherlands to your city to actually create this portal… As soon as more people started slowly drifting in, they were the very first one who actually knew everything, who knew the other people in other cities. And when the community started getting bigger, they were, they became the de facto leaders, because they knew everyone, and in other countries, they knew people from the organisation, from Ingress itself. So this whole network was all in existence."

As accounted by players, in more strategic and organised forms of play (e.g. "Operations"), specific roles in player relationships become more prominent, as the playing activity of each player become more consequential for the others' playing. In these occasions, players in organising and leading positions are likely to give suggestions or orders to others regarding how others should act in game, as an organised approach is necessary for achieving the immediate strategic objective in collective play. Player G is often an organiser of such collective play. In the following example this specific scenario, a player who is from G's faction but was not participating in the operation, unknowingly disrupted the collective action in his individual play ("shooting a block-link"). Player G explains his approach in solving this situation, which in turn describes how a relationship is negotiated and constituted between players who play different roles in the situation:

Player G: "…It can happen that somebody walks on your back without knowing. In that case you've got different reactions. For me it's important to uphold, even if the

(unknowingly disrupting) agent is known, to give them respect and also ask them friendly, keep it friendly. If they don't want to do it, do it yourself. Don't get mad on another person, because it's quite normal you get sometimes a blocker from your own faction. In that case be nice to him if you can reach him…and if he doesn't want to help you or is against it, that kind of thing, try to hold him there. Hold him talking so he doesn't move anywhere else, and get a team to remove the blocker that shoots across or the lane itself, just what's possible…we don't wanna push him in a wrong spot, we just want to give him also his free play, we're gonna do our action of course, because we are there with thirty forty fifty sixty even more people, then one person is for us in comparison not enough to stop the operation itself…So eventually you try to still have respect for him, and give him his own possibilities without making him do something against his will."

To summarise, relationships which are a part of the Ingress IGC can be categorised into two categories: relationships with those in the opposite faction, and relationships with those in the same faction. The former are usually constituted in the competitive-interactive playing patterns in the game. The latter are constituted in the organisation of collective play activities.

It should be noted that, as the In-Game City was defined at the beginning of this analysis as the urban environment that exists when players engage with the rules of the game, the aspects of relationships analysed herein were only those that directly engage with the game rules. In practice, many of these relationships carry their social and emotional meanings and implications into dimensions of players' urban lives that are not included in the Ingress game rules. These aspects of the relationships will be elaborated on in the following part of analysis: Constructing the Out-Game City.

4.2 Constructing the Out-Game City

The Out-Game City (OGC) in this thesis is defined as the urban environment which exists regardless of whether the game rules of Ingress are engaged with or not. While in a broader sense this could include an infinite range of dimensions and themes in the urban condition, in this thesis analysis the OGC mostly involves aspects of the urban environment that is, although not inherently defined by Ingress rules, still have relevant roles in the players' playing activities, and thus can be analysed as a part of their urban experience while playing the Ingress LBMG. It should be noted that it is not possible to completely and precisely distinguish which aspects of the urban environment and urban activities are a part of playing and which are not, and it is fundamental to this thesis' understanding of LBMGs that the players play in both cities at once. Therefore, the purpose of describing an Out-Game City constructed by playing, is not to specify urban elements that are arbitrarily defined as "relevant to playing but not directly related to game rules". Rather, the purpose is to describe a range of urban conditions and aspects relevant to playing, that exist before playing starts and/or exist after playing stops. This is in contrast to the In-Game City, which is made up of elements that effectively cease to exist when playing does not occur.

As mentioned in the Theoretical Framework of this chapter, Atkinson & Willis (2007) provided an inspiring notion of the "Ludodrome", a playful imagined space in which play occurs while being informed by urban experiences from both the simulated urbanity in a video game and the real urbanity in the physical world. While this thesis analysis take inspiration from the Ludodrome, particularly the notion that in-game and out-game experiences constantly inform and shape each other, the current

thesis had chosen a specifically narrow definition of a “game”, which defines the game to be its system of rules. As such, any activities or aspects of activities that do not engage the rules of the Ingress game, although they might still display playfulness and playful mentalities and might even occur within the Ingress mobile app, are considered to be “out-game” playing. Some phenomenon discussed in this section can be thus labelled as elements of out-game play. It should also be stated that, while the Ludodrome describes a relationship between a virtual simulated urbanity and a physical real urbanity, this thesis instead describes a relationship formed through playing between an urbanity defined by game rules (IGC) and an urbanity not defined by game rules (OGC). Elements in both the IGC and the OGC can be virtual and/or material.

More specifically, as parallel to the In-Game City, the Out-Game City in question can also be understood in the material, imaginary and social dimensions. Firstly, the material dimension consists of the material reality that exists around the players, including the geographies and infrastructures of the urban environment, such as buildings, parks and roads, but also their material physical activities such as the ways and routes of their movements within a city. Aspects of the Ingress mobile software that are not related to the game rules are also included in this material dimension. Secondly, the imaginary dimension consists of the players’ mental understanding and imaginations of the urban environment. Thirdly, and perhaps most emphasised in the following analysis, is the social dimension, which include the social relationships and the shared or negotiated understandings of the out-game urban environment which players have created with other people, both within and beyond their capacity as Ingress players. As parallel to the IGC, in the context of this research the three dimensions inform each other and shouldn’t be understood in isolation. A basic

example may be that movements in the material OGC can be defined in terms of the social OGC, such as when a player drives his car to the house of another player who is his friend. We can also note that, regardless of whether the player was engaged with playing Ingress during this car trip or not (whether he was playing on the car, whether he was going there to play etc), either way he was still making the physical distance with his body and vehicle, and either way the other player was still his friend. Therefore this trip and his friendship with the other player would be identified, in this thesis, as existing in the Out-Game City. This is in contrast with previously presented elements of the IGC, which are primarily defined by playing the game, and cannot be perceived or acted upon when the game is not being played.

The following presentation of the analysis elaborate on how the elements of the players' playing activities contribute to the construction of the Out-Game City (OGC). The analysis had identified two major themes: "Sensing the Out-game City", and "Making the Out-game City". The former consists of players perceiving conditions and qualities in the OGC, and the later consists of players engendering changes in the OGC. As with their parallels in the Construction of the IGC, these two processes are not distinct and isolated but rather work in tandem, and should be understood as relatives to each other, i.e. as a duality.

4.2.1 Sensing the Out-game City

Sensing the Out-Game City is a playing process which involves the players paying attention to or having awareness of urban elements that are not defined by the rules of the Ingress game. The nature of this investigation and the nature of data collection

had placed a focus on sensing the OGC in context of play (this is to say that the interviews were *about* playing Ingress). It should be kept in mind, therefore, that the following results provides a focused account on the forms of perception players have of their urban environment in context of playing a LBMG, as opposed to the players' total perception of their urban environment in general. Accordingly, the Out-Game City as described in here is one that is constructed by the players through the act of playing this game.

In analysis of the process of Sensing the Out-Game City, two important sub-processes emerged, namely Paying attention to the material Out-Game City, and Paying attention to players in out-game social contexts.

4.2.1.1 Attention to the material Out-Game City: In-game contexts influence ways of sensing the material world

The ways players paid attention to the material dimension of the Out-Game City could be further organised into two elements, which form their own duality: those ways that are related to gameplay, and those ways that are not related to gameplay.

In the former cases, on one end of the duality, conditions in the material Out-Game City can be perceived and serve as conditions that inform in-game knowledge, motivations and actions. Examples can include paying attention to which parts of the city other players live in, which portal locations are physically difficult to reach (this involves knowledge of the way to reach there), paying attention to where streetlights are available to decide if it is suitable to play there at night and so on. Players also observe and create awareness of the distance and travel time between portals, and therefore distance and travel time between real life places. This observation is often

used to determine if they themselves or other players would like to travel to a portal to interact with it, evaluating whether the portals are too far. In an interesting case, Player M also explains how he uses his knowledge of out-game distance between places to identify suspicious spoofing-cheating practices in game:

> *Player M: At least on the Intel map, I was looking, what's this (player activity), this is not right. You can't go from that portal to that portal in less than one minute. It's like this portal is here, and that portal is on the other side of the building, and you can't circumvent the building in one minute. I know for sure the building is not open. Things like that.*

Alternatively, in-game motivations can also encourage players to pay attention to specific aspects of the urban materiality which do not directly have in-game significance. The most obvious example is of course seeing the physical portal items in person. Ingress portals are always based on the geolocations of real items in public space, such as buildings or public artwork. While strictly speaking only the geolocation of these items (i.e. their GPS coordinates) have in-game roles, players often also see the physical items themselves in physical space. Many players mentioned instances of how the game guided them to visually discover these items in their environment:

> *Player Z: "What does Ingress do? It forces you to go to the little place and sometimes find you a little statue in a garden that someone thinks is cool, and you have to walk to that garden. You look at the statue, you look at all the places, you look around you, and you go oh this is kinda interesting. You walk away, you'll probably never come back again unless you want that portal again. That's the beauty of it. It allows you to*

see the small bits that you otherwise would not recognise."

Furthermore, on the other end of the duality, players also accounted for paying attention to aspects of the city that are totally not related to the game. As Player Z's experience had shown, he not only looked at the statue but also "looked around". In the process of playing, many players reported paying attention to the physical environment that the portals are situated in, looking at architecture, nature, and being immersed in the environment in general. One player mentioned how in playing Ingress he discovered new streets, new bars and new cafes in the city which he had lived in for many years. In doing so, he said, his "world became bigger".

It should be mentioned, however, that there were also several accounts of players paying attention exclusively to the Ingress app on the phone, and paying relatively little attention to the material environment surrounding them. This could be due to feelings of disinterest in the material portal items as judged by their in-game pictures, the need to play quickly and leave the site quickly (due to either the lack of personal free time or being involved in timed collective play such as making a big field), darkness in the environment while playing at night (and the inability to see), the need to concentrate on the Ingress app screen to perform certain in-game actions accurately (e.g. the "glyphing" mini-game), and other possible factors that may influence one's playing style. Overall, how a player pays attention to the material Out-Game City can be dependent on his/her particular goals for that playing occasion, and the circumstances in that playing occasion such as available time and means of transport. If the goal for that playing session is to perform in-game actions that require high attention and/or high in-game efficiency and speed, as often in the case of collective play, it may be less possible to pay attention to the out-game

material environment. If the goal for a playing session is more akin to free-play, casual play and individual play, it is more possible for the player to direct some attention to the out-game material environment and notice/explore the material urban landscape.

4.2.1.2 Attention to players in out-game social contexts: Players' life details & Out-game relationships between players

This element in Sensing the Out-Game City involve paying attention to and having knowledge of other players' lives, beyond their playing activities and playing patterns in the Ingress game. The analysis had produced two sub-themes in this way of paying attention: attention to other players' out-game life details, and attention to out-game relationships between other players.

Firstly, through observation in games, but also through meeting them in person, chatting with them, and through communications within the community (i.e. hearing from others), players can gain access to personal information of other players both in their own faction and in the opposite faction. As previously mentioned, it is possible to deduce a player's location of living and location of work by observing their in-game patterns. Furthermore, if you meet this player in person and have a conversation with him, it is possible to triangulate more extensive information. Accordingly, decisions regarding which personal information to offer to fellow players can be negotiated and nuanced. Player D accounts for a possible scenario of meeting an opponent player for the first time:

Player D: (after interacting with a player in the game) … and then you meet him on

the street, you just go by to say hi… Normally in that way, you make a small talk. Sometimes you improve to that and talk about things beyond the game, like what is your job, sometimes people are protective about that simply because of privacy reason, other times also because of game reason. Because for example if you have a job with irregular times, knowing somebody is a harbour worker, ahh this is why you have the irregular times. It can be, to a certain extent, a strategical reason to not tell that.

Familiarity with someone's in-game activities can encourage players to eventually meet up in person. A player reported that in a non-playing setting, travelling through an airport, she was contacted by another player in the in-game communication tool ("Comm"). As it turns out, this was a player from her usual playing area, and as he was also travelling through the same airport and recognized her username in game, they tried to find and greet each other in person. As players pay attention to each other and learn more information about each other, out-game relationships such as friendship can be built.

Secondly, attention is also paid to out-game relationships between other players, especially when the relationships have an impact in the game. One player had spoken about a dispute in the community in which one player accused a teammate of being "too close" with a member of the other faction, and suspected that she might purposely play to the opposition faction's advantage. Another interviewee accounted for how one player was the employee of another player, and how this influenced their interaction dynamic in gameplay.

The most relevant situation of an out-game relationship having significance for the

in-game condition is perhaps the case of the Faction Change. In Ingress, every player has an one-time opportunity to switch to the opposite faction. Players observe that when this happens, it is usually due to disputes and other negative social experiences between a player and members of his/her original faction. Therefore, a Faction Change is a change in the way of playing as well as a change in social ties, essentially distancing older ties and forming new ones in the other team. Players pay attention to these faction changes that happen in the community from time to time. As will be discussed in the next section of analysis, ways of making and managing out-game relationships, both friendly and hostile, can play a significant part in the construction of the Out-Game City.

4.2.2 Making the Out-Game City

While playing Ingress does not provide a way for players to alter the materiality of the urban environment, that is to say it does not enable them to modify the city's architecture or physically re-decorate public space, it does enable them to alter the urban environment by means of what Alfrink described as "softer" urbanism: reprogramming urban spaces rather than making changes to city's hardware (Alfrink, 2015). By reprogramming, which is to say by inventing or adopting new ways to use and experience the urban environment, Ingress players can (re-)make the Out-Game City in the act of playing Ingress. The Out-Game City thus made has a presence in the urban lives of players and non-players even in contexts where they are not engaged with the game rules.

The following section elaborate on three ways by which players make the OGC in their acts of playing. Each of these ways correspond to one of the three dimensions of the OGC. While playing Ingress, players are making the material dimension of the OGC through their mobility choices and mobility patterns. By means of forming feelings and opinions about the Out-Game City, players make the imaginary dimension of the OGC. Finally, through playing Ingress, players make the social dimension of the OGC by forming and managing social relationships that extend beyond the game rules.

4.2.2.1 Duality of Mobility Motivation in the Out-Game City

Mobility is an essential aspect in the playing of Ingress, as players must move to different GPS locations to access different portals and interact with the game world. Unlike actions in the Ingress mobile app which only has a presence in the In-Game

City , when players move during play, from one location to another in the physical world, their embodied movements also contribute to the constitution of an out-game material urbanity. Not only do players create a bodily experience of moving through the material city for themselves, but they also play a part in making up the city's human circulation, perceivable for other players and non-players.

One key quality defines the players' mobility in the OGC: their motivation for movement, namely whether the players are moving for the primary purpose of playing Ingress, or if they are playing Ingress while moving from place to place with other goals in mind. This duality of mobility motivation has implications for both where the players are travelling to (to a specific quarter of the city, to a different city etc) and their means of travel (by walking, by car, by public transport etc). Many players reported cases when in-game goals motivated them to go to places they otherwise would not have gone to, including areas in their own city but also to other cities for the sake of completing Ingress "banners" or to achieve certain goals in collective and strategic play. They also report that sometimes they deviate from their daily routine routes and routine time of travelling in order to interact with the game, including hacking more portals, destroying opposition portals etc. On the other hand, players also reported many instances when they play the game in ways that are possible during their regular movements through the city, for example interacting with portals that are accessible on their commute to work, or hacking new portals while sightseeing in a different city on holiday.

Oftentimes, the two motivations interact with each other and produce a style of mobility that is defined by both:

Player H: "….a friend of mine lives in Amsterdam, and he takes one or two trains earlier before getting to work, and then he walks from station. He can take a tram, but he walks or takes the bike from the station to his work, and he walks around and destroys blue portals and link everything back. Yeah they finally caught up with him saying well, this guy is destroying this route everyday. So what we will do is we will put AXAs (in-game items) on it. So then he won't have the time to destroy everything or the gear. Then he took just another route around it… He didn't care, he said well yeah, more points for me."

In this example, as in many others, we can see that both in-game and out-game motivations contribute to a player's chosen way of movement. While the origin and destination are determined by out-game factors (commuting from home to work), the means, route and timing of travelling are all influenced by in-game considerations. The reverse scenario was also often reported by other players, where players decided to travel to somewhere for in-game purposes (for example going from one portal to another portal that's in a different city in order to link them), but the means and timing of travelling had to be determined according to the circumstances of their out-game lives, such as the time and budget restraints. Overall, the playing of the Ingress game contribute to the bodily mobility of Ingress players in the form of in-game purposes. Unlike the purposeless wandering of the flaneur, Ingress players adjust their movements in the city along the duality between in-game motivations and out-game motivations.

4.2.2.2 Forming ideas about the Out-Game City

As discussed in the first half of the results section, concerning the making of the IGC, when players play Ingress they form feelings and opinions about various aspects of

the urban environment in the context of the rules of gameplay. The following section outlines how, as they play, they also form ideas about the Out-Game City, and thus make up the imaginary dimension of an Out-Game City that exist beyond the rules of Ingress gameplay. As with the IGC, the player's experience in the Out-Game City is not passively received but rather is actively made.

The feelings and opinions players made about the OGC, labelled as "ideas" about the OGC below, can be categorised into two sub-themes. Firstly, through playing Ingress, players form ideas about the out-game material urban environment surrounding them, beyond the context of game rules. Secondly, through playing Ingress, players form ideas about other players beyond the context of game rules.

4.2.2.2.1 Forming relationship with the urban out-game environment

Ideas that are formed about the out-game urban environment can be described as feelings of attachment to and care for said environment, and can be understood as renewed relationship with the city. One player reported the case of becoming more involved in the public life of the urban environment after started playing Ingress. This includes paying more attention to problems in the public infrastructures (such as broken street lamps) and reporting them to the municipality. It also includes paying more attention to missing-persons notices, paying attention to whether something suspicious is happening around the neighbourhood, and contribute to the safety of the local community just by means of being "extra eyes on the streets". Phrased quite poignantly, the player expressed how playing Ingress helped him to "break out of his cocoon", and instead of only caring about the small protected personal world where his family is in, now he also cares more about the "outside world".

The majority of other experiences reported by players, in regard to their new relationship with the city, were more directly described in terms of the feelings rooted in gameplay but grew beyond the game rules. The most prominent example is the sense of territory some players have over the areas they regularly play in and the areas they live in. Many players reported that they like to "live under a green (or blue) field", meaning that they like the GPS location of their house to be covered by a territory of their own faction, formed by claiming and connecting several portals nearby. While living under a field of one's own faction provide no in-game advantage, and in Ingress a field covering one's house is no different from a field several kilometres away , many feel so strongly about this preference that they would go out of their way to interact with the game to make sure their house is covered in their own faction's colour. For some players, this sense of territory extends beyond their house and expand to cover their entire neighbourhood. On the other hand, once knowing where an opposition player lives, some players would purposely commit effort to cover this person's house with a field in the colour this person does not like. Often this kind of fields primarily serve as a provocation to this person's sense of territory. Because these fields players put over their own house and over each others' houses usually do not contribute to greater strategic in-game goals, they contribute instead to a negotiation of the sense of territory players have in the imaginary dimension of the Out-Game City. While the location of a player's house may have no significance in Ingress as far as game rules are concerned (i.e. it may not be a portal), they are important to the players' imagination of urban space and their relationship with urban space beyond the game rules.

As per Brighenti's thesis (2010), territory is not an area marked in space but rather a

relationship one makes vis-à-vis other people regarding access and movement. This understanding of territory becomes pronounced when players act to “defend” their neighbourhood not only by means in the game but also by means outside of the game. Instead of defending a portal in the app by “recharging” it or placing virtual defensive infrastructure on it, some players physically follow and confront opposition players who “invade” their territory. Confrontations can happen via verbal chats or verbal harassment and name calling, and in the rarer scenario more aggressive and bodily. These examples demonstrate that the territories which began in the IGC also have such a presence in the OGC that they motivate out-game actions. Player X provides an account of such an encounter:

> *Player X: “ It only happened once I think, I was attacked by a blue player, what happened was he spit at me. I was in a part in Zoetermeer, and he was on a bike in a park, I was just walking and then he came to me and… he was on his, not bike his scooter, and he nearly hit me, and then he spit to me. Because I was the other faction. Well, I think ok, that’s not my problem, he’s crazy, I’m not crazy. But I think what nerve, we are playing a game, and act like this?”*

4.2.2.2.2 Forming ideas about other players in out-game contexts

In the previous section of this result chapter we discussed the ideas players formed regarding each others’ gameplay, including evaluations of each others’ in-game performance and playing style. Players also reported, however, other ideas they formed about each other which extended beyond the in-game context and concerned other players’ character and personality. While the players (especially on opposing factions) are often times fellow city dwellers who have no other intersection in either their private or working lives except for the Ingress game, they

were able to generate strong feelings about each other on a personal level. In these feelings, two prominent themes are the phenomenon of personal vendettas between players, and the feelings of moral disapproval in certain players and their behaviours.

Personal vendettas were observed and reported by many of the players interviewed, often not as accounts of their own feelings but of the social tension that they had noticed in the community between certain individuals. It is when two individuals harbour specific negative feelings about each other, and therefore prioritise irritating/inconveniencing/displeasuring each other through in-game actions, even though these actions do not contribute much to other in-game goals. Player L reported an observation of this phenomena which, according to him, is particularly prominent among long time players in the Rotterdam area:

> *Player L: "...2nd and 3rd generation players are more social and interested in the game, while for more 1st generation players who are still playing, it's personal. There's personal hate, personal trouble, that for 2nd or 3rd generation players it's difficult to understand... They make it really personal to constantly attack someone's home portal or work portal, while yeah, one portal, what does that make a difference in the total gameplay? Personally I wouldn't make the effort to get on my bike and cycle for a few kilometres to destroy someone's home portal, but that happens. I won't mention names, but I guess you have an idea of who."*

These vendettas manifest in the consistent destruction of home portals and consistent covering of someone's house with opposition field, as aforementioned, but perhaps most obviously they can be observed in the in-game/out-game action of "Guardian Hunting".

The Guardian badge is an in-game achievement one can obtain, which requires a player to have claim over the same portal continuously for 150 days. Guardian Hunting, therefore, is an in-game practice which consists of destroying and claiming this specific portal (a "guardian portal") before it was held for 150 days, to prevent that player from obtaining the Guardian badge. Guardian hunting provide no in-game achievement for the hunter, nor does it provide any in-game strategic gains. Oftentimes, the only gain is to achieve personal irritation for the guardian portal's original owner. This is particularly visible when the hunter often chooses to destroy such a portal only when it is held for 149 days, just enough to prevent the Guardian badge achievement. It is an in-game manifestation of out-game personal motivations against specific persons. This phenomenon is explained in Player C's experience of obtaining the guardian badge and dealing with guardian hunting:

> *Player C: "After I got my Guardian, I asked some people (from the opposite faction) here in Rotterdam from eh, did you know my Guardian? Yes it was that one and that one, yeah we know. So why didn't they take it down? They didn't hate you enough.*
>
> *Researcher: They didn't what?*
>
> *Player C: They didn't hate me enough. I said ah, that could be true.*

In the case of personal vendettas, one player can commit a lot of effort to perform an in-game action for the sole purpose of causing grievances to another player, motivated by out-game negative feelings against that specific person. Imaginably, these actions feed back into the out-game feelings and the players' evaluations of each other, and the vendettas can exacerbate over time. On the other hand, a player

can also be evaluated by another as one who plays “fairly”, and it is possible that certain players can have positive opinions about each other, in which case they then avoid causing each other grievances. While these feelings and evaluations can manifest by both in-game interactions and out-game interactions (e.g. chatting in person happily or aggressively), they are ideas that players form about each other not only as fellow participant in the game’s system of rules, but also as out-game personalities cohabiting the same urban environment. Otherwise strangers with no shared social or professional spaces in urban life, the Ingress game provide a new context in which these urban people can get to know and form ideas about each other.

Feeling of moral disapproval is when a player holds the opinion that another players’ playing style is “wrong” or “unfair”. Sometimes this feeling can be either the origin or result of personal vendettas. Moral disapproval is an evaluation one holds against another players’ personality and character, which can define that player beyond the context Ingress game rules. Player L, for example, explained his disapproval of guardian hunters:

> *Player L: “I know there are Guardian hunters, I know there is a trophy list, and I know there is a lots of people who get down as many guardians as possible, yeah if it’s your fun in the game in not letting anyone else getting something, like a medal, yeah go ahead, but to me it’s pathetic. At least I, I cannot say it’s a job well done. I don’t care if it’s a blue guardian hunter, or a green guardian hunter, in both cases I say yeah, don’t speak to me.”*

Another commonly reported cause for moral disapproval is when a player is

suspected of cheating or of tolerating and benefiting from others' cheating. Disapproval of players who cheat can manifest in evaluations and comments about their character, name calling, black-flagging and ostracising them from the playing community.

To summarise, players can form ideas about each other in an out-game context beyond Ingress gameplay. That is to say they can form ideas about each other not only as players but also as people. The most prominent themes in these ideas are personal vendettas and moral disapproval of certain players, however players can also form positive ideas about each other. The following section will discuss how these ideas can contribute to the making of out-game social relationships.

4.2.2.3 Making Social Relationships in the Out-Game City: In-game interactions and out-game feelings

As aforementioned, when Ingress players play, they can become familiar with the in-game and out-game behaviour patterns of other players, they can learn about the life details of each other, they can interact with each other via both in-game and out-game ways, they can form ideas about each other, and of course in doing so players can form social relationships with each other. These social relationships may start as in-game interactions but eventually extend to out-game areas of life also. Several players reported that, after playing Ingress for an extended period of time, the goals and achievements in the game itself become secondary to the social interaction with other players. Playing Ingress become a means to socialise and spend time with the friends made through playing Ingress. We can say that these relationships have presence both in the In-Game City and the Out-Game City.

Out-game social relationships are not causally made by the activity of gameplay. Rather, the making of a relationship between two players is a two way process between their relationships in the IGC and their relationship in the OGC. For example, by playing together to achieve in-game goals, two players can form a friendship that extend to out-game context. This friendship, in turn, can contribute to the playing style to both players and to the decisions they make in-game, regarding when and where to play, whether to play more casually or more strategically etc. For another example, the phenomenon of the Ingress personal vendetta is, while the opposite of a friendship, also an interpersonal relationship, often originating from gameplay but extend into out-game social contexts, and in turn come back to motivate the players' in-game actions in ways beyond the logic of the game rules. When the relationship between two players in the IGC changes in quality, it can have consequence on their relationship in the OGC, and vice versa is also true.

This dynamic in the making of these out-game social relationships is best illustrate in the phenomenon of Faction Change. In Ingress, it is permissible for a player to switch from one faction to the opposing faction, but this is only allowed once per account in the game. In other words, once a player switches faction, it is not possible to switch back. Decision for a Faction Change can often be motivated by out-game social tension or dissatisfaction with one's own faction's community, but it can also be motivated by the wish to experience the game from a different perspective. When a faction change is performed, a player forms new out-game relationships with players from the new faction, and their out-game relationships with fellow players from the older faction become weakened:

Player G: "Well to be a part of a team, that's very fun. That's why I can't understand people suddenly change, do faction changes… I had a bad year last year, I nearly died. I got so much support from Ingress players, and when they do a faction change they don't speak so much. But they know so much also, on the Telegram (a messaging app used by the Ingress community) everybody type now because you get more knowledge about each other, it's more not only (talking about) where are you playing, where are you now, but also the problems in divorce, a man is sick, problem with family also. That's hard sometimes, because you know something, then they change to the other faction, and then well, the case about myself when you meet them again, of course they say how you doing blah blah, but you don't see them much often. You don't see them on the farm anymore. That was sometimes hard. Why do they do it? I had a good relationship with Lincoln (a friend who did a faction change to the other faction). But I still see Lincoln on Mission Days and Anomaly, and we talk, but it's different."

To summarise, out-game social relationships are formed between Ingress players such that they interact and socialise with each other beyond the context of the Ingress game. Players' social relationships in the OGC and the IGC constantly inform and contribute to the making of each other. Ingress players in the city, who are otherwise people who come from diverse backgrounds and have little overlap in daily private or professional activities, are able to create complex social and emotional dynamics between and amongst each other in the context of being Ingress players.

5 Conclusion & Discussions

At the beginning of this thesis, we suggested a possible parallel between the Ingress in-game story element of the portal network having an effect on human minds, and the real-life phenomenon that playing a LBMG may consist of specific ways for players to mediate their urban experience between an In-Game City and an Out-Game City. Considering the existing theoretical context in the field, and the existing studies that have been done on the topic of urban media, games in cities and playful urbanism, this suggestion seemed almost intuitive. Indeed, current research had provided much theoretical insight on the ways players' experience in video games and their experience in the city can inform each other to form a total experience, such as in Atkinson and Willis' model of the Ludodrome (2007). More specifically, Moore's study on Ingress had identified the playing of the game as a "situated practice" (Moore, 2017), where the players' knowledge of the urban materiality contribute to practices of play within the urban environment, just as they recontexualise this knowledge in terms of play and redefine urban space as playful space.

What was not intuitive, however, was the question of *how*. In the rich theoretical insight of existing research, there is little empirical exploration that describe what exactly the urban experience of playing a LBMG consists of. Therefore, this thesis set out to generate empirical findings that connect with existing theories. Starting out with the theoretical understanding that players play in both an In-Game City and an Out-Game City, this thesis sought to identify the exact processes players experience as they interact with these cities. This goal was accomplished as this researched identified the Four Processes of Playing a LBMG, described in the results section in

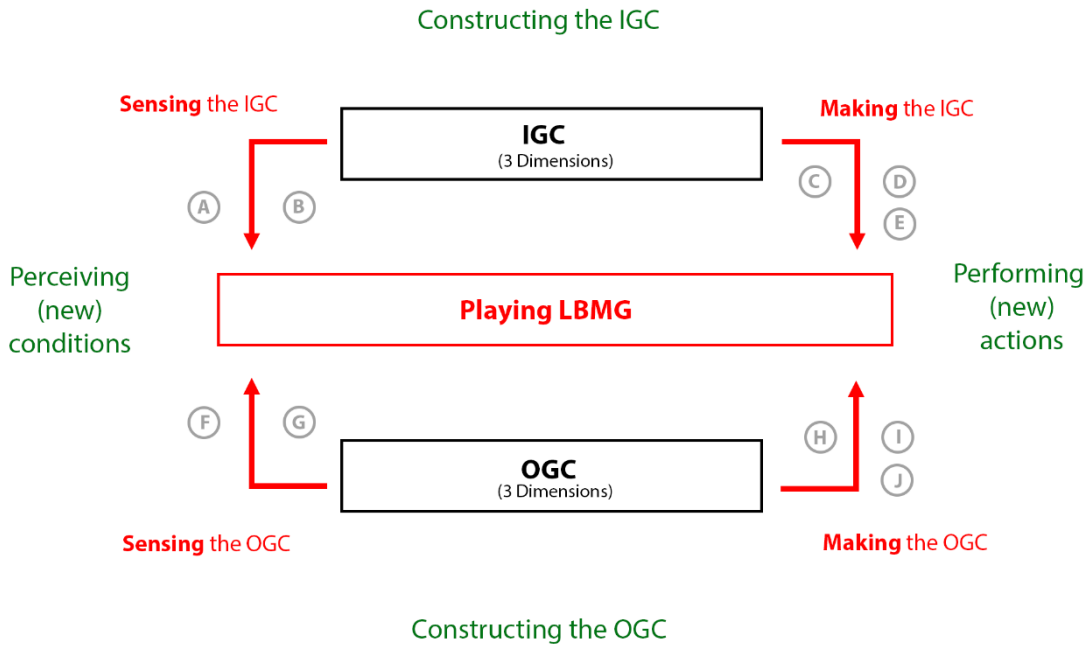
the 4th Chapter of this thesis. This current and final chapter will discuss how the Four Processes contribute to answering the thesis' Research Question. Furthermore, this chapter will also discuss the thesis' limitations, and in the end include some recommendations for future researchers in the same field.

5.1 Conclusions: Answering the Research Question

In the beginning, this thesis sought to answer the research question:

RQ: How do Ingress Players mediate their urban experiences between the In-Game City and the Out-Game City in the act of playing?

The answer to this question is best presented in the following diagram of the Four Processes of Playing a LBMG:



1. Sensing the In-Game City:

A. Duality: Immediate Attention and General Awareness

B. Duality: Attention to Individual Playing and Attention to Collective Playing

2. Making the In-Game City:

C. Actions in the In-Game City: Producing Playing Patterns

D. Forming ideas about the In-Game City: Ideas about one's own playing & Ideas about others' playing

E. Making Social Relationships in the In-Game City: Relationships defined by roles in collective play

3. Sensing the Out-Game City:

F. Attention to the material Out-Game City: In-game contexts influence ways of sensing the material world

G. Attention to players in out-game social contexts: Players' life details and out-game relationships between players

4. Making the Out-Game City:

H. Duality of Mobility Motivation in the Out-Game City

I. Forming ideas about the Out-Game City:

I-1 Forming relationship with the out-game Urban Environment

I-2 Forming ideas about other players in out-game contexts

J. Making Social Relationships in the Out-Game City: In-game interactions and out-game feelings

An important notion is that, as was mentioned in Chapter 2 of this thesis, playing a LBMG (just as experiencing any locative media) is an active process that players do. Therefore, their experience in the urban environment is something Ingress players actively construct rather than something they passively receive. As they do play, they construct the In-Game City by 1)Sensing the IGC and 2)Making the IGC, and they construct the Out-Game City by 3)Sensing the OGC and 4) Making the OGC. The Four Processes take place concurrently in the activity of play, and together make up the totality of the playing of a LBMG.

While these Four Processes may initially seem like 2 sets of parallels, in actuality each process contains themes that are uniquely relevant to itself. The diagram above presented the sub-qualities and sub-themes that constitute each process. These sub-elements are signified on the Four Processes diagram with letters of the alphabet, and they will be briefly summarised in the following paragraphs.

In **Sensing the In-Game City,** players actively perceive conditions in the in-game urban environment. This process of sensing can be characterised by two dualities. Firstly, there is the duality between **Immediate Attention & General Awareness (A)**. These are two modes of sensing the city that exists in the game rules, one as reaction to specific sensory stimulations from the game, and another as having a more constant recognition of the IGC's presence. Secondly, there is the duality between **Attention to Individual Playing & Attention to Collective Playing (B)**. These can be understood as the two approaches to paying attention to the game, one relating more to a perception of the game as an individual experience, and the other a perception of the game as a collective experience. Together, the two dualities qualify a range of possibilities by which the IGC can be actively perceived by players during

their engagement with the game.

In **Making the In-Game City,** players create and/or alter the IGC that can be sensed. **By performing in-game actions and producing playing patterns (C)**, players are able to make up the material dimension of the IGC, specifically in the form of player activity content in the Ingress software. By **forming ideas about the In-Game City, namely by forming opinions, evaluations and feelings about one's own game play and about other people's gameplay (D)**, players are able to make up the imaginary aspect of the IGC. Finally, by **forming social relationships in the IGC, that's to say forming relationships with other players that are defined by each other's roles in collective gameplay (E)**, players make and alter the social dimension of the IGC. While the game's basic infrastructure is designed and regulated by Niantic Studios, it is the players who produce what constitutes the actual "stuff" of the Ingress game world, the 3 dimensions of the IGC.

The Ingress software serve as a platform for players to exercise the game rules, and it is in exercising and interacting with these rules, i.e. in the act of playing the Ingress LBMG, that players construct the Ingress In-Game City, via the twin processes of sensing and making the IGC. The sub-elements **A,B,C,D** and **E** illustrate several qualities and characteristics of these two processes.

As players exercise and interact with the rules of Ingress, they also construct aspects of an urban experience that are not defined by Ingress rules, and therefore not a part of the Ingress game. These aspects of the urban experience will continue to exist even as playing is terminated. This thesis had labelled the totality of these urban experiences as an Out-Game City.

In **Sensing the Out-Game City**, players **pay attention to the material out-game Out-Game environment (F)** in the process of play. This can involve them sensing urban materiality that is related to the Ingress game (e.g. public statues which are portals), but also sensing urban materiality that are not directly related to the game such as new roads, architecture, nature, and general immersion in the material environment surrounding the activity of play. Players also **pay attention to other players in contexts that are beyond the game (G).** This can involve paying attention to information such as where they live, where they work and so on, but can also involve following the social relationship between other players beyond their in-game actions. In playing, Ingress players can learn information about other players with whom they otherwise have no shared space in their professional or private urban lives.

In **Making the Out-Game City**, players create and/or alter the out-game urban environment in the process of play, an environment that exists beyond the Ingress game rules. This can involve **creating mobility patterns, motivated by the duality of both in-game conditions and out-game conditions (H).** It can also involve **forming a relationship with the out-game environment (I-1)**, a relationship made of evaluations, opinions and feelings. Furthermore, making the OGC can involve **forming ideas about other players in out-game contexts (I-2),** regarding their personality and characters not only as players but also as persons. Finally, these ideas inform players to **form social relationships with other players in out-game contexts (J).** The social and emotional relationships with other players influence styles of gameplay just as gameplay influence these relationships.

In considering the players' construction of the Out-Game City through the twin process of sensing and making the OGC, it becomes evident that playing a LBMG

such as Ingress contribute to the players' urban experience beyond the context of the games' rules. Specifically, these contributions can be qualified by sub-elements **F, G, H, I** and **J**.

All together, the Four Processes of Playing a LBMG, as specified and qualified by the 10 sub-elements, provide a rich illustration of how players mediate their urban experience in both the IGC and the OGC by constructing both cities at once. Thus this thesis was able to answer its own research question.

5.2 Limitations & Recommendations for Future Research

The greatest limitation in this thesis is the question of its generalizability. This can be discussed in several aspects. Firstly, there is the limitation of possible bias in sampling. The snowball sampling conducted for this thesis, initiated through the researcher's own status as a fellow Ingress player of the Enlightened faction, resulted in a sample that was mostly made of Enlightened players. While two Resistance players participated, the data they were willing to share in the interviews may be more reserved than what they would otherwise share with a player in their own faction, including more specific insights into how play is organised, how relationships are formed between players and so on. While many of the interviewees had commented that the two factions have very different playing cultures, they have also admitted that their knowledge about the other faction is not complete and is most likely biased. Ideally, players from both factions should be equally sampled, in order to achieve a more complete perspective on players' experiences.

Secondly, all of the players interviewed were players who are active in game in or around the area of Rotterdam. While this adds certain value to the research, as the

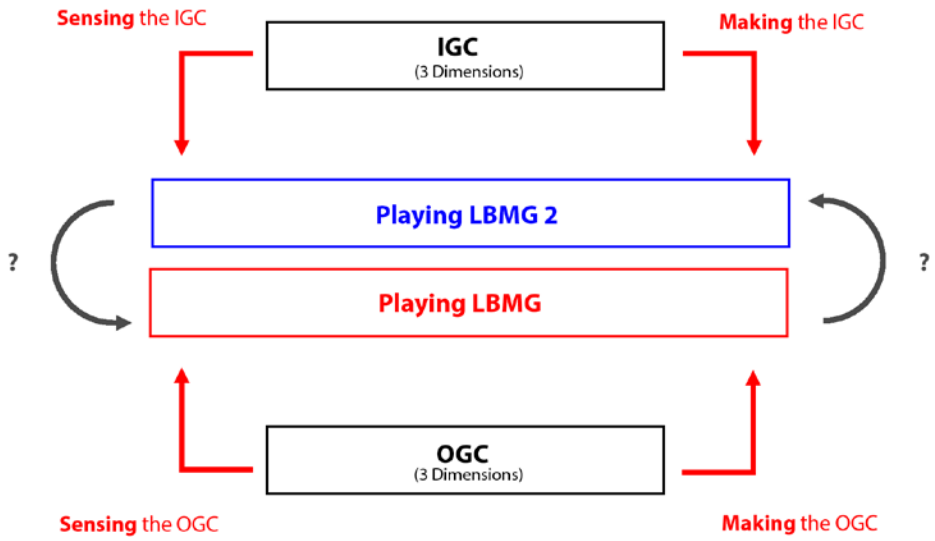
players would be able to discuss or confirm the local playing experiences that they share, it also places a limit on the research's perspective. As one player had accounted, Ingress communities in different regions can have very different playing practices, depending on both in-game and out-game factors in that area. When he visited Poland, as mentioned in the Results chapters, local players there were mostly playing against the artificial intelligence accounts devised by cheaters. When he visited Sicily, for another example, there was only one high level local Ingress player in a city, and for that local player the game was almost purely an individual game, except for on the rare occasions where players visit from outside of the island. The playing practices analysed in this thesis, then, surely do not cover the entire range of all possible ways to play Ingress. A research project of greater scope should seek to collect a sample that include more possible ways to play, in order to produce a more complete analysis.

Lastly, as discussed in the Methods chapter, this thesis analysis had chosen Ingress as its subject of study because it is a popular and prominent LBMG, and therefore contain a range of possible themes regarding the urban experience of LBMG players. However, because LBMGs are a relatively novel phenomenon, examples are few and it is not possible to determine whether Ingress is a typical LBMG or not. Which of the findings presented in this study are relevant to other LBMGs, and which ones are unique to Ingress? Future researchers may be better equipped to comment on this question by comparative investigations into the playing practices of different LBMGs. As it is the belief of this thesis that LBMGs and other location based media will become increasingly prominent and prevalent in urban lives, such comparative investigations will also become increasingly relevant.

5.3 Conclusive Remarks

In the thesis' introduction chapter, as we discussed the relevance of this research, we suggested that stakeholders such as game designers, urbanists, (city) marketers and municipalities may be interested in this study so as to better understand the urban experience of LBMG players. The most intuitive way to present the current research to stakeholders, then, may be to phrase these results as the "impact" or "influence" of LBMGs, that playing a game such as Ingress can "change" the players' experience in several such specific ways, and that the stakeholders may be able to thus make informed decisions to regulate and/or utilise such "impacts" and "influences" in the benefit of their own objectives. Such a presentation would be, however, an inaccurate one. While this thesis produced an analysis of the Four Processes of Playing a LBMG, which included ten qualifying sub-elements, our qualitative research design do not allow for any claims on the matter of causality between these processes and sub-elements, phrased as "impacts" or "influences". The only claim made, is that the Four Processes and the ten sub-elements constitute the playing of a LBMG, such that they construct an In-Game City and an Out-Game City in the players' urban experience.

With that said, now that we have identified the processes involved in playing LBMGs, future studies may be designed to explore the possible causal relationships between them, investigating which process might motivate another. To briefly touch on the importance of this possibility, we can consider this hypothetical diagram:



The diagram of the Four Processes can be described as hamburger-shaped. This was an intentional feature, as it is then possible to conceptualise additional layers of the hamburger. In the increasing prevalence of LBMGs and other location based media, it will be possible for city dwellers to access and interact with many layers of information and meanings at any single geolocation. To a certain extent, this is already the case. Throughout the process of this study, the researcher had witnessed situations where Ingress players and Pokemon Go players encountering each other at the same geolocations of interest, only that they are interacting with different games and therefore different meaning structures through their phone. Furthermore, many of the interviewed Ingress players also play Pokemon Go. Although not included in the scope of this research, it is definite that there is some interaction between the cities construct in both games. Currently these are the two prominent LBMGs in our urbanity, but in a very near future there might be an infinite number of location-

based media content to choose from for any person living in the urban environment, not unlike how there is already an near-infinite number of websites and TV (anyway audio-visual) channels, always available for most internet users and tv audiences. Some of these future location-based media layers may be related to citizenship and political participation, others within the professional sphere, others with the person's capacity as consumer, and so on and so forth. In this richly-multi-layered location-based-media future landscape, it can be critical to understand which processes involved in the construction of each information-meaning layer are causally related to each other, as much of the urban dweller's wellbeing may be at stake. In order to have that understanding, however, it is first necessary to identify what the processes to construct these layers are. Here, the hamburger model of the Four Process of Playing a Location Based Mobile Game may be one way to begin to imagine how one navigates these layers of infinite constructed cities, that exist on top of the same geographical space.

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Appendix A

Ingress Research Interview Guide

Section 1: Demographics Information

1. What is your name?
2. What is your age?
3. Where do you live and play?

Section 2: How do you play Ingress

1 When did you start to play Ingress? For how long have you played it?

2 If you were to explain how to play Ingress to a person who doesn't know the game, how would you explain it?

3 Where do you play Ingress?

- 3.1 Which cities, which town, which parts. Where have you played Ingress?
- 3.2 Where do you typically play?
- 3.3 Do you go somewhere specifically to play, or do you play in the places you usually go to?

4 What makes you play? How do you decide that "this is a time to play Ingress"?

5 What do you feel when you play Ingress?

6 What do you see when you are playing Ingress in the city? Describe how you pay attention when you play Ingress

7 Do you search for that real thing at the Portal or do you just get close to it on the map?

- 7.1 Do you look at the real city or do you just look at portals on your phone?

8 What about places in between of portals? Do you also explore them during gameplay?

9 Do you search for places that could be portals?

Section 3: How has Ingress affected your Urban Experience

1 Do you make different mobility decisions because of what goes on in Ingress?

- **1.1** Have you been to anywhere new because of playing Ingress?
- 1.2 Do you ever go to places you wouldn't otherwise go to because of Ingress?
- **1.3** What is the most significant urban mobility decisions you've made for Ingress?
- **1.4** How far would you go for playing Ingress?
  - **1.4.1** Physically how far away would you go?
  - **1.4.2** Would you go to places that you wouldn't typically want to go?

2 Is it important for you to own a portal? How does owning a portal make you feel?

2.1 Describe a typical interaction with a familiar portal. Describe a typical interaction with a new portal.

2.2 Do you have some favourite portals? Why?

2.3 Do you have favourite places to play Ingress?

2.4 What is a portal to you?

2.5 What are the importance of 1)names of portals 2)picture of portals

2.6 What is a link to you? What about a field?

3 Do you keep track of who owns which portal?

3.1 How often do you look at the intel map?

4 What is most rewarding about playing Ingress for you?

4.1 What gameplay actions are most rewarding? Why?

4.2 What does it mean to "explore physical space"?

4.3 Psych-geographic contours: does Ingress encourage/influence movements in other ways than simple goal-driven gamification?

5 How do you think your playing experience could be different from other players? Do you play in any unique ways?

6 Does Ingress change the way you pay attention in the city?

6.1 Do you think the Ingress world compete with the real life world for attention?

7 Do changes in the city affect the way you play Ingress?

8 Do you think this city feels differently to you after you have played Ingress in it?

9 What do you think about guardian hunting?

Section 4: the social level

1. How often do you play Ingress by yourself? How often do you play with other players?
2. What is the difference between playing with yourself and playing with other players?
3. Have you met new friends through playing Ingress?