Mapping the city, playing the city: Location-based apps as navigational interfaces.

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ABSTRACT

In this paper we will examine how maps in location-based mobile games are used as surfaces on which players can inscribe their whereabouts and other local information while being on the move. We will look at three different location-based games to which maps are central as a playing surface: *RunZombieRun*, *Paranormal Activity Sanctuary* and *Own This World*. Our main argument will be that such cartographical location-based games foreground the fluidity of mapping and emphasise the performative aspects of playing with maps. As such they are not representations used by players for consultation, but they produce new social spaces (Lefebvre 1991). It therefore does not suffice to conceive maps in such games as "mimetic interfaces" (Juul 2009). Instead they should be approached as

what we will call navigational interfaces. To understand them as such we will combine perspectives from game-studies with understandings of maps as technological and spatial practices as developed in Human Geography and Science and Technology Studies (STS).

Keywords

Location-based games, maps as games, casual play, navigational interfaces.

INTRODUCTION

With the emergence of smartphones, many highly popular applications have been developed whereby digital maps are used for more purposes than solely finding your way. Since it has become increasingly common for people to have smartphones with GPS and Internet connections, a myriad of applications which invite users to play with mapping have been put on the market. Rather than containing links to maps (e.g. *City Secrets*) or employing fantastical maps (e.g. *Bounty Island*), the central game-board where players make their moves is a topological map that displays the actual location of the player on a representation of the physical space they inhabit. As such, location-based games or applications which use maps as game-boards, hold the potential for a new understanding of the way that spatial relations are structured.

Some of these applications are best called quasi-games, because they do not have very well established rules and lie somewhere between social networking tools and games (e.g. *Foursquare*, *SVNGR*, *Gowalla*). Such quasi-games definitely

entail play-like elements in relation to maps, but one can debate their (often promoted) status as games (cf. Glas 2011, Deterding et al. 2011).

That said, other comparable location-based apps have well-established rules and game mechanics. Three such games - *RunZombieRun* (RZR) *Paranormal Activity Sanctuary* (PAS), and *Own This World* (OTW) - have emerged as particular examples that use generic maps of the player's physical environment as a graphical user interface. These games ask players to employ their phones as navigational interfaces, and by doing so, hybridize the map (as a game-board) with the playground (as an area for touring). This paper examines how players interact with, and give shape to these topological maps, and how maps simultaneously function as (urban) navigational interfaces and game-boards.

Finally, this paper argues that it is necessary to rethink exactly how location-based games alter the cultural meaning of maps as game-boards, and if their socially produced and performative nature generates a different awareness in which categories such as inside/outside, object/subject, play/non-play, map/tour become contested.

THE MAP AS GAME-BOARD AND PLAYGROUND

In the games that are central to this article, players use maps on the screens of their mobile phones as their chief "play equipment" (Sutton-Smith 2001). In the massive multiplayer location-based game PAS, for example, the objective is to carry your phone around chasing, avoiding and annihilating demons that are depicted on a Google map. When a player does get 'possessed' by demons the

goal changes and you join the demon party that aims to rob other players of their sanity.

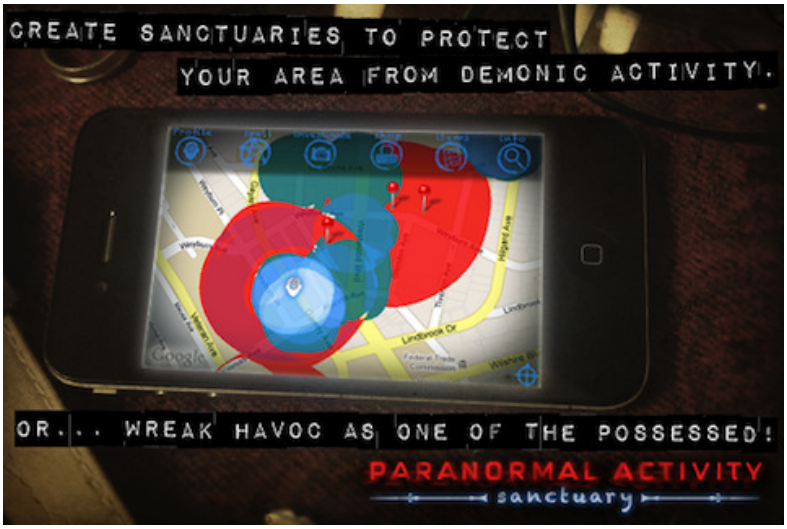

Figure 1: *Paronormal Activiy Sanctuary* (Ogmento, 2010)

A red pin on the map depicts the location of the player. Ominous demonic spheres are shown as red circular blotches while 'sanctuaries' are demarcated as blue areas. Icons above the map allow you to cast spells, purchase magical items and so forth.[i] Spells can be cast on the map by drawing a pentagram on paper and taking a photograph of it, which is then transferred and 'projected' onto the map. In this way, the map absorbs signs from the material world into the game-board, a profound difference from pervasive games like *Geocache* where players are encouraged to use a GPS device to find treasures that remain (hidden) in the physical world. In PAS, the map on the screen functions as a game-board on which you fight with or against 'bad spirits", which may be other players. These

spirits, in turn, are made visible by the game-board that superimposes their location on a local map, assimilating all your actions as player.

This is also significantly different from analogue cartographic game-boards like *Conquest of the Empire* or *Age of Steam*. While the game-board in analogue games may be considered a classical Latourian *immutable mobile*, digital game-boards are somewhat different. Analogue boards can be transported without changing form: they are *flat inscription* that can vary in *scale*, can be *reproduced*, are *re-combinable*[ii] and other inscriptions may *super-imposable* them (Latour 1990, 37-38). The surface of the map may be layered with pawns, markers and so forth, yet the surface, or the *fond de carte* (November, Camacho-Hübner, and Latour 2010, 581) remains immutable or unchanging. Here lies a clear difference with analogue board games that depend on maps: the visual appearance of the map as surface or game-board has become transformable.

While the visual transformability of maps is arguably a trait of *all* digital maps (cf. Lammes 2012, forthcoming), in location-based games this visual mutability is even more prevalent. Like in other mobile digital maps (e.g. satnavs) there is an interdependent physical mobility and transformability of map and user. But furthermore, digital games explicitly address this interdependency by openly inviting users to *play* with images of maps, further increasing their mutability. And, although it wouldn't be prudent to go so far as to argue that, in the case of location-based games, the game-board has become a mutable mobile, it's not too far to suggest that the *image* of the map itself has lost some of its immutability.

More precisely, the image transforms constantly as a result of a hybridisation of playground and game-board. As such mapping activities in cartographic location-based games are a strong example of how touring (going) and mapping (looking) have become hybridised in digital mapping practices. The French philosopher Michel de Certeau used both terms as separate categories to describe the frictional spatial relationship encountered in daily life between going places as a subjective experience and simultaneously having to deal with abstract and depersonalized renderings of our environments such as maps (de Certeau 1984). Digital maps in location-based games open up possibilities to play with and overcome this friction by hybridizing activities of going and looking (Lammes 2008). In RZR this merging is, for instance, established through running (going) while looking at personal location and that of Zombies on the map. Or, as displayed on opening this app: *Zombies in the neighbourhood. They are not fooled by plants. The only way to hold them back is to run. Run with your iPhone in hand*. A Google Earth photographical aerial image of your surrounding functions as the map on which you have to take this fast tour of your environment. In the left-upper corner a smaller inserted map shows an overview of the area. On the main map and the inserted map the position of the running player is indicated by an arrowhead-symbol and the position of Zombies as contours of bodies (corpses). In this game aerial photographs function as a game-board on which both the real position of the player and the virtual position of the zombies is inscribed. Consequently a fusion of playground (touring) and map (looking) occurs.[iii]

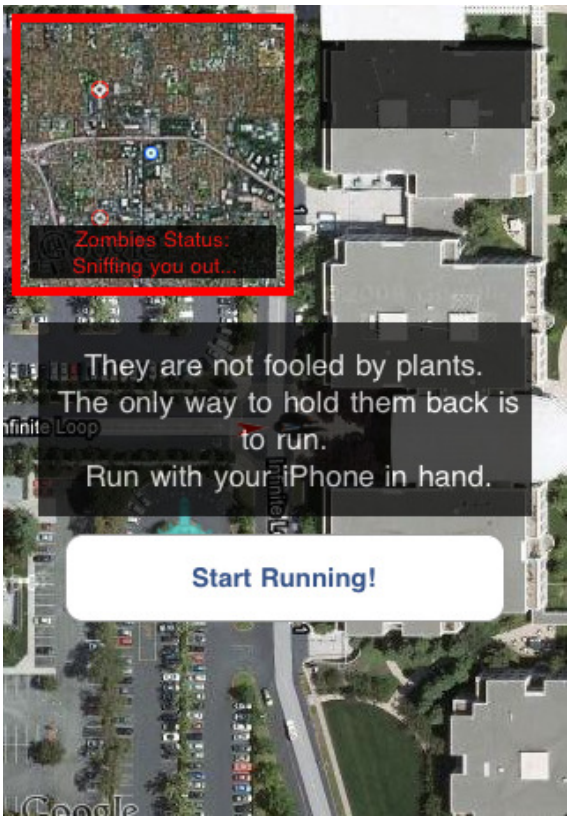

Figure 2: *RunZombieRun* (SeeSawApp, 2010)

In OTW a similar process is at work. In this strategy game, reminiscent of a board game like *Risk*, players tour their actual environment to locate, map and outwit other players. A Google map functions as the mobile game-board that is overlaid with gridlines that delineates territories of players and alliances. The position of the player is shown as a blue dot on the map. Underneath the map, icons give players options to conquer, to look for leaders, to purchase resources, to leave messages, or to join alliances (with nerdy names like “eye candy posse”). Like in RZR the map functions as a mobile game-board on which players can *physically* situate and see themselves and others moving. Hence touring and mapping are

hybridised to shape ever-changing images. Furthermore, the processes of using cartographic game boards means that the disjuncture between two kinds of spatial activities – that of movement and that of representation – is significantly dissipated to the point where their relationship has become apparently fluid (and perhaps even synthesised) in game-play.

THE NAVIGATIONAL INTERFACE

In his book *A casual revolution: Reinventing video games and their players*, game-scholar Jesper Juul speaks of casual games as a contemporary phenomenon:

> There is a new wave of video games (…) that are easy to learn to play, fit well with a large number of players and work in many different situations. I will refer to these new games using the common industry term casual games. (Juul 2009, p.5)

Juul describes one particular kind of casual game as depending on *mimetic interfaces* (p.5). Such casual games 'take' performances of players in real life - such as dancing or singing – and render them visible on screen as part of the game-world. Location-based games follow a similar process by integrating physical movements of the player in the image of the mapping interface. But while Juul's theorisation might be adequate for hardware interfaces like *Guitar Hero* guitars or *DDR* dance mats, it is not fully suitable for the casual games examined here. The term mimetic suggests that interfaces solely imitate or represent the movements of players. However, we contend that the hyrbidisation

of mapping and touring in the cartographical games discussed in this paper demonstrates that the conceptualisation of interfaces as mimetic is over-simplified, because they produce new spaces through the differential relationship of playground and game-board.

It is all too common to think of interfaces in metaphorical (and idealistic) terms of windows or mirrors. Both designers and academics seem to be recurrently unaware that interfaces are 'sign-things' (Latour 1990) which play a crucial part in producing (spatial) meanings (Pold 2005, Lammes 2011). As the games under scrutiny here foreground, interfaces (in this case the screen of the mobile phone) are not so much mimetic tools but rather mediators via which players are invited to produce new spatial relations. A park may be changed into a battlefield, a haunted space or a racing track via an interface. Thus, it is not too far-reaching to suggest that new spatial connections are produced by how players move with their phone in hand.

OTW and RZR thus blur the line between game-world and our physical surrounding by transforming the actual touring of our vicinity into a cartographical game. This integration of mundane spaces of daily life and game-world, as described above, is amplified by the fact that such games can be played for short stretches of time and can be effortlessly combined with other 'touring' activities (e.g. going to work, shopping, visiting a city as tourist) as well as other functions of mobile phones (e.g. texting, making a phone call, twittering). Being so strongly embedded in daily life, and in a techno-scientific multi-tasking culture of going, looking and doing, they are best described as casual gaming activities. It

is possible for players to constantly step in and out of such games, without necessarily destroying the gaming experience. It is therefore problematic to maintain that these games adhere to the notion of a magic circle (cf. Montola 2005; Montola, Stenros, and Waern 2009, 19,21).[iv] Instead, they generate a ludification or gamification[v] of casual spatial activities and, vice versa, turn digital games into unceremonious spatial events.

It would therefore be better to instead conceive of such interfaces as Latourian mediators (Latour 1990, 1993, 2004). Similar to, for example, a door-hinge or a key, they prescribe certain spatial actions (e.g. 'turn left', 'touch me', 'take me out of here') and invite specific interactions between the game, players and other humans or things. Interfaces are the material means through which the player as navigator and cartographer can create particular and shifting spatial relations. To view interfaces as technological artefacts that act as such mediators allows us to steer clear from a (occularcentric) preoccupation in which the transparent and non-intrusive mirror or window is conceived as "the archetypical interface" (Cypher and Richardson 2006, 2), as Juul's term seems to suggest. In the case of the cartographical location-based games that are being written about here, the term *navigational interface* would be more appropriate to use. The phone screen becomes an interface that invites players to watch themselves as a navigational vehicle that tours on the map. Via the mediation of the interface, the player navigates actively through physical environments and constantly blends playground and the mapping game-board. Thus the navigational interface does not

so much ‘mimic’ environments but takes an active role in transforming them by producing navigations that adhere to specific game-rules.

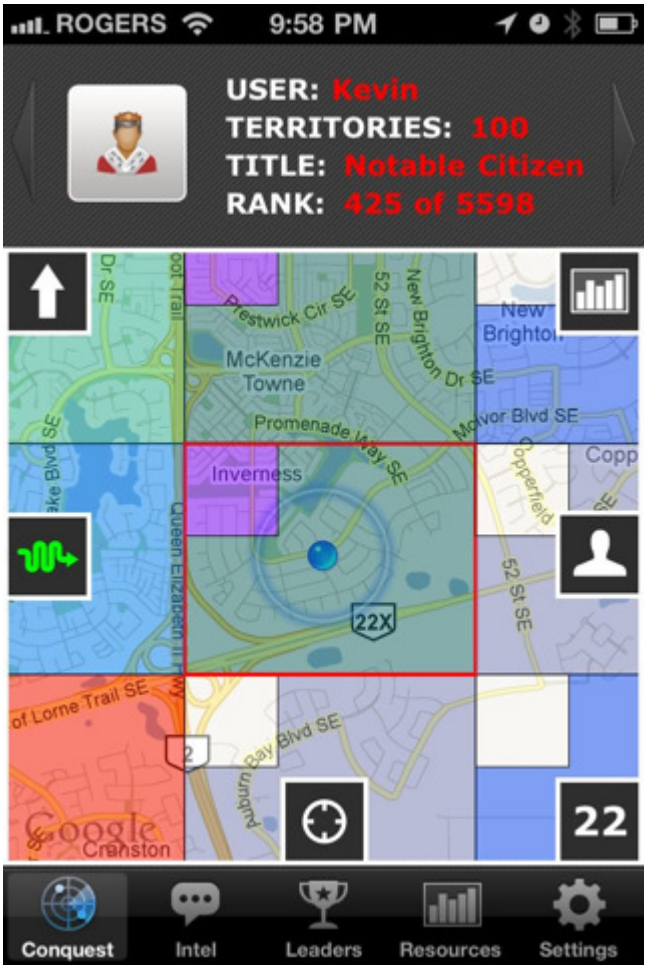

Figure 3: *Own This World* (BNID, 2010)

The production of playgrounds

As a particular kind of neo-cartography, maps in location-based games underline what November, Camacho-Hübner and Latour (2010) marked as a shift in the public perception of maps from the “mimetic” to the “navigational”. The crux of their argument is a consideration of risk as a key notion to allow scholarship to

move away from a flawed interpretation of maps as objects that mimic actual environments. Risks draw attention to the fact that maps are always the result of performative practices, whose outcome can never be fully calculated or determined beforehand. But risk in and of itself is not enough – it needs to be accompanied by a greater nuance as to the ways in which risks manifest themselves in the relationships between going and looking. To this end, it is crucial to add that 'play' is an important, compatible and necessary concept to account for this change: play always implies a certain degree of risk, even when we cannot speak of "deep play" (Geertz 1972; Sutton-Smith 2001).[vi] Furthermore, similar to risk, play can never be fully calculated, hence possibilities are opened for users to treat maps, and not only maps as game-boards, as the outcomes of constant processes of hybridisation. That said, unlike risk, play is far more embedded in the domain of popular culture and is therefore a powerful tool for changing the public perception of mapping from the mimetic to the navigational in the context of daily life.

Mimetic interpretations of maps rely on a singular semiotic relationship between an object and its representation or reference, while navigational interpretations seeing this as a processes or "chains of production" (November et al, p.584). Location-based cartographic games highlight the latter interpretation of maps. First of all, the chain of production is emphasized because players are constantly aware of the networks that are involved in making maps: data input, the strength or weakness of the Internet and GPS connections and so on. Players are, as November et al. put it, to a greater degree aware of "institutions, skills,

conventions, and instruments" (p. 584) that make up the map. Secondly, the disparity between the approaches is accentuated because players have to be constantly sensitive to their own role in creating such shifting alliances – the player is neither muted nor invisible on the map and as such, their role is augmented.

Players are part of and are playing with shifting references between landscape and map, never losing sight of their phone-screen as a navigational interface that invites them to produce such spatial relations. They are also constantly aware of the mundane world through which they move, which is not the same as the game-world mediated by the map that they see on their phone. A player of RZR runs while looking for 'warnings' such as the noise of approaching cars in the real world or Zombies that appear like ships from the mist in the virtual world. Or a player of OTW keeps track of other players and teams that may be roaming the street. In that sense, they very similar to navigators at sea, who are also always aware of the perilous and shifting connections between map and territory (November et al, 2010, p.585). Yet different from the navigator at sea, players of such digital cartographical games see their own and other player's manoeuvres (or better: moves) back on the map. Hence references from the 'outer world' that are important to the game are hybridized through the navigational interface and made part of the map. Or as November et al. state: "it is not mimetic (…) they do not divide in two, so as to form a real analogical 'outside' and a mapping representational one 'inside'" (p. 586).

But it is important to note that in such games and during play, players engage an alternative set of references from the navigator at sea. In play, references are chosen depending on their relevance for the game. Consequently, it makes players responsive and aware of how the construction of space is hinged on the selected references of the game (cf. Vertesi 2008). Furthermore, especially because playing such games generates "augmented" spatial relations (Manovich 2006), the player can be very observant of how dependent references are on their particular ludic framework. In PAS, for example, players are finding their way through a physical environment by the use of a navigational interface on which a symbol of a square can acquire an augmented meaning of both being a place where you can take a bus and of being haunted ground. For a 'normal' voyager that uses a (digital) map it may also have different meanings, but she may be still 'fooled' by the symbol on the map as bearing a mimetic reference to the environment. Navigational interfaces in location-based games emphasize that references on the map are actively chosen rather than merely mimetic, and that meanings of spatial relations are not pre-given but are rather socially produced (Lefebvre 1974).[vii]

PLAYFUL MAPPING

With the advent of digital maps and a simultaneous "ludification of culture" (Raessens 2006) all new kinds of playful mapping practices have emerged. Surely playing and mapping have a shared history that goes way beyond the digital turn (Perkins 2009; Flanagan 2009)? Yet, playful mapping has entered a new era now that players are able to manipulate the appearance of maps in multiple ways and can constantly wipe out images of maps to create new ones, while being on the

move. Furthermore, technological communication (satellites, WIFI, Bluetooth, GSM) enables a constant flow of transforming images. Digital maps thus demonstrably provide a new range of possibilities for agency and creativity on the part of the player as navigator and cartographer. They are 'processual' simulations (Kitchin and Dodge 2007) rather than representations, being adaptable to performative acts of players in daily life. As such they are also part of a shift in how we interact with interfaces in general in this digital era, which Nanna Verhoeff identifies as "a shift towards a logic of cartographic access: a logic of navigation." Location-based games are fertile ground for players to probe what this logic means and could mean in our daily life.

This paper aims to open dialogue about the possibilities that conceiving of maps as digital game boards may have. As discussed, it is not enough to think of the relationship between maps and play as a mimetic relationship between space and representation, or between going and looking. Rather, location-based games contest such simplified dichotomous relationships. No more can the map be easily conceptualised as a mimicry of real space but instead, through navigation, location-based games portent the gradual hybridisation of touring and mapping and the disruption of traditional notions of inside/outside, object/subject, play/non-play, map/tour. Furthermore, more so than risk alone, the inclusion of play into such hybridised activities heralds the transference of these transformative spaces from the particular, specific game-space into the everyday, whereby daily life becomes central to the socially produced and performative character of maps.

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ENDNOTES

[i] There is also an option to investigate your vicinities for looming spirits by using your camera to "shoot' demons' that otherwise would remain invisible.

[ii] In analogue board games like *Carcassonne* and *The Settlers of Catan* players combine pieces of maps. The pieces in themselves are nevertheless immutable mobiles and are, in perfect line with Latour's definition, *recombined*.

[iii] Digital location-based games are in this sense also closely related to analogue outdoor games where players can likewise be a physically part of self-drawn maps by literally standing on them. Maps are then demarcated on the ground by, for example chalk-lines (of which the depiction of the Zombies reminds us), pylons or other markers. However a strong incompatibility is that digital location-based games depend on the screen of the phone as an interface, a mediator on which the position of the player is externalized and *watchable*. Now players see and situate themselves on their phones. They do not exactly stand on the map but use an interface to merge playground and game-board.

[iv] One could even argue that such games foreground the fact that the magic circle is anyhow a highly problematic concept (Calleja 2012; Pargman and Jakobsson 2008; Consalvo 2005; Lammes 2008; Taylor 2006).

[v] With gamification we refer to the integration of game mechanics into daily activities, mostly as a marketing tool (e.g. reward systems), while ludification is a more general and cultural term to indicate the integration of play into daily life. The latter term doesn't primarily entail game mechanics and rules, but is far more about play as a general cultural and anthropological phenomenon in the way that Sutton-Smith (2001) approaches it.

[vi] Brian Sutton-Smith (2001) speaks of deep play as the most perilous kind of play. Clifford Geertz uses the same term in his famous essay on Balinese cockfighting: "play in which the stakes are so high that it is, from his utilitarian standpoint, irrational for men to engage in it at all" (Geertz 1972). When we envisage a continuum between "deep play" and less precarious kinds of play, shallow play would be on the other side of this spectrum. Risk is also seen as an important aspect for designing videogames (Yee 2009; Wilson 2011; Hayot and Wesp 2009)

[vii] After all a player feels like being in a different world when running through a street with an iPhone in hand avoiding Zombies etc., whilst 'by-standers' may not be aware of

the difference, except that the person is running and looking at a phone. (cf. Montola, Stenros, and Waern 2009, p. 203)

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