What does *Pokémon Go* teach us about geography?

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Abstract. *Pokémon Go*, a highly popular, recently launched augmented-reality-based video game, fosters players' interaction with the real world. In this commentary we elaborate on how location-based games, such as *Pokémon Go*, have provided insights into the perception and understanding of space, as well as into their impact on patterns of mobility. In addition to that, we compare *Pokémon Go* with geocaching, another location-based game, to further elaborate on what *Pokémon Go* fails to do in terms of the practices of geographical exploration.

1 Introduction

Nowadays, mobile technologies and devices are penetrating our daily life to such an extent that we could claim that most people could not live without them. According to comScore, of all time spent on digital media, 65 % is spent on mobile devices, whereas the early desktop computer is becoming a "secondary touch point" for an increasing number of digital users.

One of the most visible developments of mobile technology in the area of gaming in 2016 was the release of a location-based augmented-reality (AR) game: *Pokémon Go*. First released on 6 July in the United States, Australia, and New Zealand, *Pokémon Go* became a hit throughout most parts of the world almost overnight. It has been credited with popularizing AR, as it has introduced the technology to a broad consumer audience. Unlike most video games, which create a parallel virtual world in which players interact and communicate with each other through information technologies, the game has been praised by some critics for potentially improving players' interaction with the real world (Hjorth and Richardson, 2017).

As geographers we find it exciting to see that many people have joined in to play location-based video games. Geography has long been seen as becoming less relevant as new, space-shrinking technologies developed. However, by playing location-based and location-sensitive games, players might become aware of geography both in the virtual world in the game and in the real lives of the players. Although *Pokémon Go* is neither the first location-based game nor the only one based on AR technology, it is the first game combining both technologies that has reached a huge audience. It is the hybrid nature of location and juxtaposed features, the integration of the virtual Pokémon world with our everyday environment, that accounts for the game's conspicuous appeal – visible on many street corners in the towns and cities of those countries where the game has been made available.

However, what does the popularity of such location-based games tell us about geography? What can such a game add to the well-engaged debates on the role of geography in the increasingly digitalized world? By focusing on Pokémon Go, the purpose of this commentary is twofold: on the one hand, we intend to explore how the development of mobile technologies, as well as their application in location-based games, has provided insights into the perception and understanding of space (Sect. 2) and has impacted patterns of mobility (Sect. 3), which has been elaborated on in the literature only to a limited extent. On the other hand, we compare Pokémon Go to another location-based game, geocaching, to further elaborate on what Pokémon Go fails to do in terms of the practice of geographical exploration (Sect. 4).

2 Location-based mobile gaming and the perception and understanding of space

During the past decade, there has been an explosion of interest in mobile technologies in industrialized countries as well as in many emerging economies. Among these, "hybrid reality games", or "mobile location-based games" (De Souza e Silva, 2006, 2009), have become increasingly popular. *Poké-*

mon Go, as the most-played location-based mobile game in the latter half of 2016, represents a number of compelling research opportunities in location-based gaming and related areas (Colley et al., 2017). At the spatial level, the geographies produced through, produced by, and of such location-based games seem to be very interesting for many geographers. Ash et al. (2016), for instance, even proclaim the advent of a separate field of "digital geography" produced through, produced by, and of the digital. From a geographical perspective, *Pokémon Go* and the like have provided new insights into at least two relevant topics, i.e. the perception and understanding of space, which will be dealt with in the rest of this section, as well as human's patterns of mobility, which will be dealt with in the next section.

How we experience, imagine, and navigate through physical space has changed with the increasing popularity of location awareness and GPS-based games. *Pokémon Go* contributes to our perception and understanding of space at least in three ways. First, as mobile technologies increasingly permeate our everyday lives and mobile games use these technologies to entertain, motivate, educate, and inspire, a distinction between virtual and physical worlds appears more problematic than ever. Games such as *Maji*, *Ingress*, *Parallel Kingdom*, and *Pokémon Go* use location-based services and offer a playful lens for viewing relationships, communications, and experiences grounded in the context of real space. De Souza e Silva (2006) refers to such an integration of virtual and real spaces as "hybrid spaces". These, she argues, arise when "virtual communities (chats, multi-user domains, and massively mulitiplayer online role-playing games), previously enacted in what was conceptualized as cyberspace, migrate to physical spaces because of the use of mobile technologies as interfaces" (De Souza e Silva, 2006:261). Zook and Graham (2007:241) refer to this phenomenon as Digi-Place, where "digital data and physical places are continually recombined into lived, subjective space as one negotiates through time, space, and information". Grounded on the theoretical insights of Dodge and Kitchin (2005) concerning their distinction between "code/space", "coded space", and "background coded space" the notion of DigiPlace incorporates also networking routines conducted by individuals accessing these hybrid spaces via their smart phone devices (Zook and Graham, 2007). With the immediate success of *Pokémon Go*, this insight has become plainly visible on the streets.

Secondly, *Pokémon Go* and some other location-based mobile games also influence our perception of space by increasingly turning the "serious" ordinary space into playful space. By playing around, people can use the opportunities to navigate their cities in unusual and enjoyable ways. Traditionally understood, playful space is often separated from so-called "serious" ordinary space. However, with the popularity of *Pokémon Go* and the like, the distinction between these spaces has become increasingly difficult. By transforming the cityscape into a game board, the ordinary space of a city can be transformed into a new, playful, and surprising environment. It is as if the games create an imaginary ludic layer that merges with the city space, connecting people who previously did not know one another via mobile technologies according to their movement in physical spaces. As a location-based mobile game, *Pokémon Go*, through its design, encourages the reconceptualization of urban spaces by requiring players to physically experience different areas of the city that they would normally not visit. Moreover, as has been found out by many players and researchers (e.g. Colley et al., 2017), "PokéStops" and "battle arenas" are usually located in locations that are often "crowd-sourced historical markers" (Colley et al., 2017:3). By physically being there and talking with other players, one is actually experiencing the urban landscape in a different way. Taking this into account, players of location-based mobile games, such as *Pokémon Go*, interacting in new ways with their physical environment are creating new meanings for it and increasingly blurring the boundaries between ordinary and playful spaces (De Souza e Silva, 2009; Hjorth and Richardson, 2017).

The third issue of *Pokémon Go* and the like relating to the perception of space is the social construction of space. Players using their smartphones and moving through physical space raises the issue of social construction of space. Many gamers going to public places are using these places for their private use (i.e. catching Pokémon); therefore, the privatization of public space becomes prominent (Hjorth and Richardson, 2017). Moreover, as Sotamaa (2002) points out, individual places are also influenced by other outsiders who attach meanings to these places. What is home or "my neighbourhood" for some people might be a spot for Pokémon collection for others. Further, players also shape the spatial experiences of others through their interaction. Players gathering together in parks and other public places are affecting the spatial perception of both other players and non-players. This counts for both negative perceptions of obstructed streets and positive perceptions of revitalized public parks.

3 Location-based mobile gaming and patterns of mobility

Pokémon Go also provides new insights into people's mobility patterns. Sotamaa (2002:40) defines two different categories of mobility – semi-mobile and fully mobile. Semi-mobile refers to situations where users and surroundings are not necessarily on the move, but being wireless is advantageous to media use. Secondly, a fully mobile environment refers to situations where the environment plays an active part: the user is using the device while on the move. *Pokémon Go* and the like obviously require full mobility since the physical world is an essential role of the game and players have to move while using the device. Sotamaa (2002) also points out that the fact that players are forced to move to certain hot spots (i.e. the "required mobility") adds a new

level to the definition of mobility. In many studies in geography, sedentarism stresses that human mobility is highly predictable, with most people moving between a few fixed locations (e.g. home, office, locations of social activities). However, while playing *Pokémon Go*, many people actually go to places they have never been to before. Substantial changes, therefore, have happened to people's patterns of mobility. *Pokémon Go* therefore fits to the "new mobility" paradigm suggested by Sheller and Urry (2006). Mobility used to be seen as a means to an end (De Souza e Silva, 2009), but the new mobility paradigm challenges this idea by stressing the meanings that can be attached to mobilities.

4 Mobile technologies and different practices of geographical exploration

While much attention is paid to the constitution of hybrid spaces and social cohesion in cyberspace and real space (Hjorth and Richardson, 2017), the *Pokémon Go* hype distracts from other serious questions, such as the practices of geographical exploration and the related room for creativity.

Depending on the game set-up and design and how players actually play the games, practices of geographical exploration differ. This becomes clear when comparing *Pokémon Go* to the pioneer location-based game of geocaching, which started soon after GPS became publicly available and relies on user-generated content. Players who seek caches, i.e. small containers containing logbooks and sometimes small bartering objects, rely on others who have created these tasks for them (also known as owners). Players create a range of geocaching experiences ranging from simple hiding places that can be found using a GPS device to elaborate quests that include many different tasks in order to unveil the coordinates of the cache. Some owners will invest considerable resources and creativity to build these adventures and often pick the place out as a central theme. They will educate about a place's history, share information on its current peculiarities, or simply share personal stories connected to that locale.

Pokémon Go also relies on user-generated content but of a different kind. Within the game, players are directed to landmarks or points of interest decided by Niantic, the company that made *Pokémon Go*, resulting in the game being played also in cemeteries, military compounds, or Auschwitz – to the horror of those who feel that playing is not suitable in these places.

Within geocaching, users have established a code of place-compliant behaviour, which is also enforced by Groundspeak Inc., the largest commercial provider for this game, to avoid such conflicts. As a result, volunteer reviewers will delete caches that obviously defy these rules or where local stake holders have complained. Within *Pokémon Go*, such a mechanism is yet to be developed.

More importantly, *Pokémon Go*, in our view, is potentially much less enabling when compared to geocaching. As indicated above, geocaching allows users to highlight places of personal interest, to share stories, teach about history, or create experiences that relate to the places where the game takes place. *Pokémon Go*, it appears to us, has little potential in this respect. Here, the database of landmark places provides a scenic backdrop for yet another re-installment of an incredibly successful media franchise. The user-generated information does set the scene for the game, but there is little if no room for creativity (see also Hjorth and Richardson, 2017:10) (Fig. 1). Although an individual player might go to locations he or she would never have been to before, the general locations where gamers can go to are largely decided at the beginning. Players are unconsciously "controlled" to go to places where the game makers allocated more Pokémon than in other locations. This is somewhat similar to Thrift and French's (2002:323) observation of the increasing influence of software and code on modern life and the automatic production of space in contemporary time – "Wherever we go, . . . we are directed by software." Such "control technologies" have largely constrained players' geographical exploration and creativity. On a critical note Hjorth and Richardson (2017:10) also state that "the Pokémon experience . . . is not an interventionist strategy but rather a transformation of the local environment into a game resource, where place is literally made relevant by the extent to which it is populated by virtual currency, game objects, and rewards". Moreover, although *Pokémon Go* released as a worldwide phenomenon in 2016, its popularity dropped strongly in the months after its launch. One of the reasons why the game's daily user count has decreased might be the fact that currently the game only allows trading Pokémon with users nearby. Therefore, it has failed to provide a chance to swap Pokémon with other gamers around the world. Here a general question of how to make location-based AR games long-lastingly attractive and creative is a critical one that needs to be answered.

So depending on the game set-up and design and how players play the games and seize opportunities, the practices of geographical exploration differ. We see interesting future research avenues along the line of these practices of geographical exploration in different games, in which the vocabulary of practice theory could be used. Although it would go beyond the scope of this commentary to introduce this theory, it suffices here to stress that it contributes to "a dynamic and activity-oriented understanding of space and place" (Everts et al., 2011:237). In addition, it has also already been recently used to analyse and understand computer game consumption and the related consumer culture (Seo and Jung, 2016).

5 Conclusions

Pokémon Go contributes to our understanding of space in five ways. First, it has shown that the boundaries between the virtual and the physical worlds have become increas-
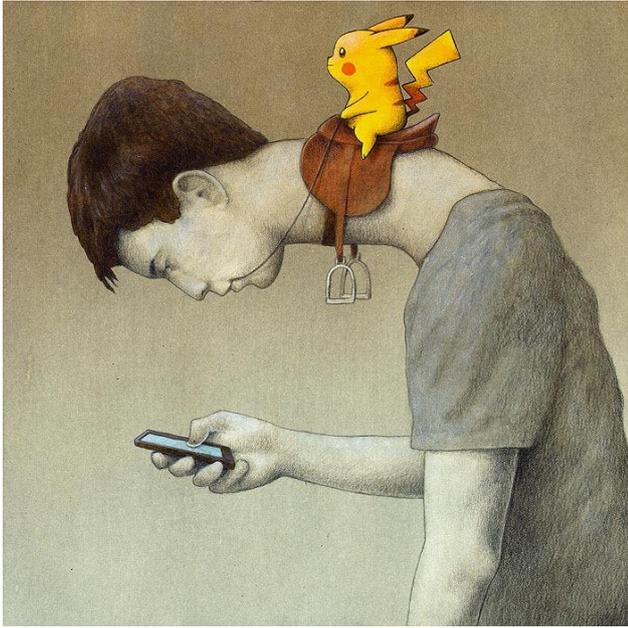
Figure 1. "Control" (2016) by Pawel Kuczynski (with permission to publish from the artist).

ingly blurred. Second, such location-based mobile games are increasingly turning "serious" ordinary space into playful space, and therefore challenge the boundaries between play and ordinary life. Third, the using of mobile technologies and the physical movement of players in space makes the social construction of space increasingly significant. Fourth, the game provides new insights in people's mobility patterns. While people's mobility is mostly predictable, *Pokémon Go* and the like might encourage people to go and experience new places they have not been to and thus alter the mobility patterns of their daily lives. They also facilitate the new mobility paradigm as their process of movement entails much sense-making. Fifth, *Pokémon Go* and the practices of its players lead to a specific way of exploring and learning about places and space, which seems to be less creative than in older games, such as geocaching.

All in all, *Pokémon Go* clearly encourages the discussion not only on the spatialities of the location-based games from various perspectives but also, in a broader view, on how these games "will shape the way in which places become defined, imagined, and experienced" (Graham and Zook, 2013:97). In this commentary we could only point out some hitherto unexplored implications for theorizing on the perception and understanding of space, mobility, and practices of geographical exploration, which we would like to see addressed in future empirical research.

References

Ash, J., Kitchin, R., and Leszczynski, A.: Digital turn, digital geographies?, Prog. Human Geogr., 1–19, https://doi.org/10.1177/0309132516664800, 2016.

Colley, A., Thebault-Spieker, J., Lin, A. Y., Degraen, D., Fischman, B., Häkkilä, J., Kuehl, K., Nisi, V., Nunes, N. J., Wenig, N., and Wenig, D.: The Geography of Pokémon GO: Beneficial and Problematic Effects on Places and Movement, Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 2017.

De Souza e Silva, A.: From Cyber to Hybrid: Mobile Technologies as Interfaces of Hybrid Spaces, Space and Culture, 9, 261–278, https://doi.org/10.1177/1206331206289022, 2006.

De Souza e Silva, A.: Hybrid reality and location-based gaming: Redefining mobility and game spaces in urban environments, Simulation & Gaming, 40, 404–424, 2009.

Dodge, M. and Kitchin, R.: Code and the Transduction of Space, Annals of the American Association of Geographers, 95, 162–180, 2005.

Everts, J., Lahr-Kurten, M., and Watson, M.: PRACTICE MATTERS! Geographical inquiry and theories of practice, Erdkunde, 65, 323–334, https://doi.org/10.3112/erdkunde.2011.04.01, 2011.

Graham, M. and Zook, M.: Augmented realities and uneven geographies: exploring the geolinguistic contours of the web, Environ. Plann. A, 45, 77–99, https://doi.org/10.1068/a44674, 2013.

Hjorth, L. and Richardson, I.: *Pokémon GO*: Mobile media play, place-making, and the digital wayfarer, Mobile Media & Communication, 5, 3–14, https://doi.org/10.1177/2050157916680015, 2017.

Seo, Y. and Jung, S.-U.: Beyond solitary play in computer games: The social practices of eSports, Journal of Consumer Culture, 16, 635–655, 2016.

Sheller, M. and Urry, J.: The new mobilities paradigm, Environ. Plann. A, 38, 207–226, 2006.

Sotamaa O.: All The World's A Botfighter Stage: Notes on Location-based Multi-User Gaming, in: CGDC Conf. 6 Jun, 2002.

Thrift, N. and French, S.: The automatic production of space, Transactions of the Institute of British Geographers, 27, 309–335, 2002.

Zook, M. and Graham, M.: From cyberspace to DigiPlace: Visibility in an age of information and mobility, in: Societies and cities in the age of instant access, Springer Netherlands, 241–254., https://doi.org/10.1007/1-4020-5427-0_16, 2007.