University of Gothenburg

Assignment 4

Anonymous ID: 303

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1 Introduction

For this analysis the two pervasive games Pokémon GO[1] and Geocaching[2]. The games are analysed regarding how the games can expand the magic circle socially, spatially and temporarily, how they can be used to encode and decode the environment and how they can cause or put emphasis on potential ethical or even legal problems.
For the description and analysis gameplay design patterns will be used as defined by Staffan Björk, Sus Lundgren and Jussi Holopainen[3]. Patterns will be marked as *Pattern*.

2 Descriptions

2.1 Geocaching

Geocaching is a location based game. Geocaching as a game is relying on the community to create so called caches. Caches are usually containers, containing a log and sometimes additional objects. There are different types of caches, which are described in detail on the official Geocaching website[4]. These caches are typically *Player Created Game Elements*[5], which are located in the world, submitted to a list of caches, that can be found online, and maintained by players. The game makes use of *Player-Location Proximity*[6], as other players can choose to travel to the cache's location and find it in the environment. Once a player finds a cache, the player should document his finding in the caches log and in an online portal. Other objects contained in the cache, are either meant for trade, which allows the player to exchange the objects in the cache with objects owned by the player, or trackables, which are meant to be taken by players to bring them to caches in other locations. These trackables are *Game Items*[7], which usually have

a certain destination they should reach or path they should travel, and players are to document, when they move trackables to new locations, which can be viewed as a form of *Artifact-Location Proximity*[8]. To be able to play Geocaching a player only needs internet access (not necessarily mobile) to access the online portal, an account on the online portal and some way of navigating to the caches, which typically involves a GPS sensor of some sort. The gameplay of Geocaching can be perceived as *Pervasiv Gameplay*[9] as it is usually paired with hiking, which also results in *Player Physical Prowess*[10]. The player can also be engaged in the game in other ways, e.g. when planning hiking routes or exchanging with other players about caches. Geocaching as a game is *Unwinnable*[11], but players can set *Player-Defined Goals*[12], e.g. finding a certain amount of caches on one day. Else the game makes use of rewards of environment[13], as players may have to overcome obstacles on their way, solve riddles and find the cache in the environment, and social rewards[13], as players can compare their achievements, e.g. how many caches they have found.

2.2 Pokémon GO

Pokémon GO is also a location based game. Players in Pokémon GO have to have a mobile app. With this app it is possible to catch Pokémon. Which Pokémon are appearing is depending on where the player is, the current weather and other factors. Players can earn experience points to increase their *Level*[14]. Once a player reaches a certain *Level*[14] they join one of three *Teams*[15]. Ways to earn the experience points necessary are besides other catching Pokémon, fighting in Gyms or completing different missions to fulfill *Achievements*[16]. Pokémon GO uses the data set from Ingress, which was developed by the same company, to place PokéStops and Gyms at real world landmarks. PokéStops can be visited to get *Items*[17], which can include Pokéballs required to catch Pokémon, healing potions to restore Pokémon's health, eggs, which can be hatched to get Pokémon, and many others. Gyms can be taken over by the different *Teams*[15]. Players from that *Team*[15] can then place up to six Pokémon in that Gym. These Pokémon then have to be defeated in combat for another *Team*[15] to take over that Gym. Gyms are also locations where raids take place. In raids players have to cooperate[18] to defeat a strong Pokémon within a certain *Time Limit*[19]. If the group of players is successful the players get a chance to catch the defeated Pokémon. To interact with Gyms or PokéStops players have to be near the corresponding landmarks, forcing *Player-Location Proximity*[6]. Players can also trade Pokémon with other players nearby, resulting in *Player-Player Proximity*[20]. Some features of the game, e.g. hatching eggs, requires players to cover a certain distance, which makes the game dependent on *Player Physical Prowess*[10], is one example of *Real Life Activities Affecting Game States*[21], as e.g. a player's jogging workout can influence the game state, and shows *Pervasive Gameplay*[9]. Pokémon GO is an *Unwinnable Game*[11], which relies on *Player-Defined Goals*[12], *Achievements*[16] and social rewards[13] to keep players motivated.

3 Analysis

3.1 Expanding the magic circle

In this section the magic circle, as well as it's social, spatial and temporal expansion are discussed, as used by Markus Montola[22]

3.1.1 Social expansion

The magic circle is socially expanded in multiple ways in Geocaching. Players can meet other people while looking for a cache and later realise, that they are also players looking for the same cache. Also bystanders that are not actively playing the game, might become part of the game as *Non-Player Help*[23], e.g. when players ask them for directions. Non-players may even accompany players, as they are hiking while the accompanied players are engaged in the game. The non-players can then also get engaged in the game by helping the player. In this case it becomes unclear who is player and who is not, as one could argue that the "non-players" are also players in that moment as they are engaged with the game, although they may not be registered players or may not even have had the intention to play. There are also social network groups, where people can exchange about their experiences with strangers and arrange meet ups to play geocaching together. Players may also use live-streams or social media apps like instagram or snapchat to create a co-presence[24] for other people putting them in the role of *Spectators*[25]. One could argue that people experiencing this co-presence are also part of the game.

In Pokémon GO the social extension is rather similar to Geocaching. For example Pokémon GO offers a build in snapshot functionality to make it easier for players to take screenshots , which can then be shared on social media and create a co-presence[24]. Especially the raids emphasis the social expansion, as here up to twenty players have to cooperate[18]. People arrange meetings on social networks with friends or strangers and some players may even go there on their own hoping to meet other players. However raid groups are only open to be joined within a certain *Time Limit*[19] before starting a raid, preventing late arriving players to join the raid group. Raids often attract *Spectators*[25]. During a raid, especially in crowded places, it can be unclear to the players who they are playing with. They may mistake players for non-players or vice versa. In Pokémon GO it became clear how this social expansion can also change over time, as the public perception of players changed rapidly as Pokémon GO grew as a global phenomenon, while in the beginning it was perceived as strange that large groups of people would meet up outside playing on their mobile phones it quickly became widely accepted from non-players.

3.1.2 Spatial expansion

Originally Geocaching was derived from Orienteering[26, p. 6], therefore caches were mostly placed in nature. As the caches are placed by the community, the area where

caches are placed expanded as the community grew. Today most caches are placed in urban areas and some are even placed on private properties[27]. As I would argue, that playing Geocaching includes going to the cache and planning where to go for Geocaching, the game is essentially played everywhere. As in Geocaching the "game world" is the real world, *Game World Navigation*[28] becomes *Physical Navigation*, which is very important for players, so the players have to use some way of navigation in the real world. There are mobile apps, that use GPS, available, but those are not required, as the game could also be played with a printed map, where caches are marked.

Other than Geocaching, playing Pokémon GO requires the use of the mobile app, so one restriction in the spatial expansion is that players are required to have an internet connection and a GPS signal. PokéStops and Gyms are located at specific locations based on the data set of Ingress[29]. As *Player-Location Proximity*[6] is needed for players to interact with the locations' corresponding PokéStops and Gyms, *Physical Navigation*[30] becomes necessary. However the game is not limited to these locations, as Pokémon can spawn anywhere and some features require the player to walk multiple kilometers, e.g. hatching eggs. However, the game prevents the player from playing actively, when the player is moving to fast, as no Pokémon are spawned, PokéStops can not be visited and the kilometers covered are not counted by the app. This limits the game in some locations, e.g. in trains or when driving a car.

3.1.3 Temporal expansion

Geocaching can for the most part be considered an ambient game[31]. Players have the option to play at any time they want, without the game forcing them. However owners of private properties where caches are located, may find it disturbing when players roam their property at unconventional times. In some cases one could argue that Geocaching can become an asynchronous game[31], when players are connected via social networks and the players are notified by other players to join the game at certain times. As I would argue that the *Physical Navigation*[30] to the cache and even planning a Geocaching trip can be considered playing the game, it can be really unclear at times when the game is played and when a game session starts/stops.

Pokémon GO can for the most parts be perceived as an asynchronous game[31], as the player can get notifications on his phone, which ask him to start the app and be active in the game. Also when having the mobile app opened, the player is notified about raids nearby, which will start in a certain amount of time, pushing the player into activities in the game. Player also have the option run the game on battery saving mode to have the game running on low battery usage, e.g. while going for a walk, which results in a *Real Life Activity Affecting The Game State*[21]. This will keep the game active and the player is notified by vibrations. Another option to stay active in the game and be notified by happenings is to purchase the Pokémon GO Plus hardware[32], which notifies the player of appearing Pokémon and PokéStops nearby and enables the player to execute

minor activities in the game, like catching registered Pokémon and looting PokéStops, by pushing one button. However the player can also choose to play Pokémon GO more like an ambient game[31], as the Pokémon GO Plus device is not mandatory to play the game and the player has the option deactivate various notifications in the app's settings or to prohibit the app from sending any push notifications in the mobile device's system settings.

3.2 Encoding/Decoding the environment

3.2.1 Encoding

In Goecaching the environment is encoded by placing physical caches in the environment. When players are looking for these caches they may start to encode the real environment as game elements and possible cache locations. Some cache containers contain objects for trading. Here the players are asked to replace one of these objects with one of their belongings, of equal or higher value. Here properties of the players become *Game Items*[7] and to the player it may become unclear if everything they have with them in that moment is part of the game, while they are playing. I would argue this is also a way of encoding, as personal objects become tradable *Game Items*[7].

In Pokémon GO the environment is encoded in many different ways. One example would be when the player is trying to catch a Pokémon in AR mode, here the virtual Pokémon are added on top of an image of the real environment as depicted in 3.1. Other cases of encoding would be specific Pokémon being more likely to be spawned near specific real world terrain, e.g. water Pokémon being more likely to be spawned near real bodies of water, or using the actual weather to determine which types of Pokémon are more likely to appear or get an increase in strength. Another example could be landmarks in the environment, which in the game may only be perceived as PokéStops or Gyms.

3.2.2 Decoding

Geocaching helps players decoding the environment, as players may start to observe their environment in a different way, as they are conditioned by rewards of environment and social rewards[13] to look where caches might be located or were they could locate caches themselves. Mystery caches or multi caches can in some cases also help the player to decode the environment, as the player has to find multiple locations, with the help of clues, to find the final cache. One more obvious example of players decoding their environment are EarthCaches^{TM}[33], as these have to be educational and provide the player with knowledge about the earth.

Pokémon GO does not seem to offer much help to the player to decode the environment[26]. However I would argue that Pokémon GO still offers possibilities to the players to decode their environment. Players may go to parts of the town they live in where they usually don't go to attend a raid. This may lead to rewards of environment[13] and help the players to decode their town. Another example could be that players may start to

Figure 3.1: Screenshot from Pokémon GO, showing a Pokémon displayed on top of an image captured by the mobile phones camera. Source: `http://blog.lenovo.com/uploads/general/Pokemon_Ponyta-900.jpg`

look for prominent places or landmarks in their environment that could be PokéStops or Gyms, as they can be conditioned by experiencing social rewards[13] in the game to look for these locations. Players may also start to observe their environment including the weather in order to find out if their environment is favourable for specific Pokémon to appear.

3.3 Potential ethical or legal problem

One aspect in Geocaching that can lead to ethical or potentially legal problems, is that caches are *Player Created Game Elements*[5] maintained by the community. There are reviewers that check the caches from afar before the cache is published on the Geocaching website, but there is no physical check of the cache's validity. The caches are in the responsibility of the player that submitted the cache. This way other players have to rely on the player, who submitted the cache, that the cache is actually where it is supposed to be and dose not have any inappropriate or even illegal content. On the other hand the player that is responsible for a cache has to trust other players to not move the cache or modify the content in any unwanted ways. Additionally there is always the risk of non-players removing or modifying the cache or it's content either not knowing of the game or even with bad intention. Other problems could come from caches placed on private property, when the permission to place the cache there is not documented properly.

Since Pokémon GO does not require the player to interact with their environment except walking, people can easily lose awareness of their surroundings. There have been multiple reports of accidents due to Pokémon GO players losing awareness of their surroundings and playing while driving[34]. Since Pokémon can appear everywhere and raids are only available at certain times, some players might be tempted to trespass private properties to catch Pokémon there or take a short cut to reach a raid in time, as they are bound to certain *Time Limits*[19]. The developers are aware of problems like that, as players get a warning message when starting the app, which can contain different information ranging from "Do not play Pokémon GO while driving" to "Do not trespass while playing Pokémon GO", as seen in 3.2. The game also limits the gameplay and gives players warning notifications, when they are moving to fast, to prevent people from playing while they are driving. Other ethical problems can be that some areas contain less PokéStops and Gyms than others, which can lead to some players feeling underprivileged. Although people meeting up in groups to play Pokémon GO in public spaces is widely accepted, some people may feel alienated or disturbed by the players.

Figure 3.2: Screenshot from Pokémon GO, showing an example for a warning message. Source: `https://phandroid.s3.amazonaws.com/wp-content/uploads/2016/07/Screenshot_20160730-170958.png`

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