

# Augmented Reality Games as an Urban Planning Tool: An Exploration of Pokémon GO

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**Abstract**

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When the mobile location-based augmented reality game *Pokémon GO* came out in July 2016, it exploded in popularity as hundreds of millions of players got out walking, explored their communities, and gathered in public spaces. This flourishing of urban life is exactly what every planner strives to accomplish. However, little research has examined the nexus between augmented reality games like *Pokémon GO* and urban planning. This study explores this relationship by researching how *Pokémon GO*, a form of augmented reality game, contributes to place attachment among players and identifying how planners can utilize augmented reality games to achieve their goals. Using Seattle as an observation site, the researcher conducted in-depth semi-structured interviews with 20 Seattle-based *Pokémon GO* players to explore their gameplay experience and behavior. The data were analyzed using an inductive approach informed



by place attachment literature. The results indicate that augmented reality games can create place dependence through functional aspects of the gameplay location that meet the player's needs and goals. The enjoyment of successful gameplay and proximity-maintaining behavior contributes to feelings of affective attachment. Although further research is required to confirm the impact of augmented reality games on place identity, this study concludes that urban planners can utilize the gamification of augmented reality to achieve their planning goals. Planners can either design their own original augmented reality game or collaborate with the developer of an already popular augmented reality game like Niantic, the developer of *Pokémon GO*.


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## Acknowledgment

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without sharing your stories, experiences, and feelings. Thank you again, and I look forward to seeing you all at *Pokémon GO* events in the future!



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## Introduction

On July 6, 2016, Niantic released *Pokémon GO*, a location-based augmented reality mobile game for iOS and Android devices. *Pokémon GO* is part of the Pokémon franchise created by Satoshi Tajiri in 1996, centered around fictional creatures called Pokémon or Pocket Monsters in Japanese. The franchise began with the Japanese release of *Pokémon Red* and *Pokémon Green* on the Game Boy in 1996, where players could play as Pokémon trainers who catch, train, and battle with Pokémon. By 1998, *Pokémon Red* and *Pokémon Green* had become Japan's best-selling video games, with over 10 million copies sold (Zenko, 1998). In the following years, the games were released as *Pokémon Red* and *Pokémon Blue* in North America, Europe, and Australia with record-breaking success. These games set the precedent for what is now one of the world's largest media franchises with globally successful movies, animated series, and merchandise.

Twenty years after the release of *Pokémon Red* and *Pokémon Green*, *Pokémon GO* was released and players again had the chance to relive their childhood dreams and become Pokémon trainers and catch 'em all<sup>1</sup>, this time in the real world. *Pokémon GO* displays the user with a trainer avatar standing on a virtual map based on the player's GPS location. To explore the map, players must physically move within the real world to find Pokémon and visit PokéStops and Pokémon gyms. PokéStops and Pokémon gyms are based on real-world points of interest and waypoints. These are artistic, historical,

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<sup>1</sup> The English slogan for the Pokémon franchise that means to go out and catch all Pokémon species.

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educational, and community points of interest such as murals, landmarks, plaques, and parks. Once players reach come within a 40-meter radius of the location, they can interact with them in-game. Players can spin a virtual photo disk and receive in-game items such as pokéballs<sup>2</sup>, berries<sup>3</sup>, potions<sup>4</sup>, field research<sup>5</sup>, Pokémon eggs<sup>6</sup>, and gifts<sup>7</sup>. At gyms, players can work with other players of the same team to battle and take over a gym with their Pokémon. They can also collaborate across teams in raid battles in which up to 20 players can battle an over-leveled Pokémon, and if successful, they have a chance to catch it.

Similar to the release of *Pokémon Red* and *Pokémon Blue*, *Pokémon GO* was met with global success with over 100 million downloads and a peak of 45 million daily active users within the first month of release in July 2016. (Gilbert, 2022). By the end of that year, it reached over 500 million total downloads and grossed over \$980 million. The mobile game has maintained success with over 1 billion downloads and an average monthly player base of 80 million. More impressive than the financial success of the app is the social phenomenon it created. Players from all walks of life got out walking, explored their community, and gathered in public spaces. The game also served as a social catalyst as players not only played with already established friends but were able to meet, interact with, and collaborate with strangers also playing the game. It is

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<sup>2</sup> An in-game item used to catch Pokémon.


<sup>3</sup> An in-game item used to help catch Pokémon.

<sup>4</sup> An in-game item used to heal Pokémon.

<sup>5</sup> A mechanic that offer various rewards for completing tasks.

<sup>6</sup> An in-game resource that allows the player to obtain Pokémon after walking a certain distance.

<sup>7</sup> An in-game item that features a postcard of the PokéStop it was obtained from and can be sent to friends and opened to receive rewards.



remarkable that a video game, notoriously lambasted for promoting socially isolated, sedentary lifestyles, caused this explosion of urban life.

Though much research has been done on how *Pokémon GO* impacts physical activity and mental well-being, activates public spaces, and fosters a sense of connectedness, few researchers have explored the relationship between *Pokémon GO* and urban planning. Given that this flourishing of urban life triggered by *Pokémon GO* is exactly what every planner strives to accomplish there is an opportunity to understand how the urban planning field could utilize augmented reality games (Jacobs, 1961; Olmstead, 1870). Though studies have looked at *Pokémon GO's* ability to create sense of place, very few have looked at its ability to facilitate place attachment. Since players must rely on locations that provide the necessary physical characteristics to complete their gameplay goals, they may become attached to these locations. Through this attachment, they continue to revisit the place and contribute to creating a vibrant public life within the city. This presents an opportunity to understand how planners can use augmented reality games to achieve their planning goals.

This study explores the connection among augmented reality games, the experience of players, and urban planning. This study has two main research questions: 1) How does *Pokémon GO*, a form of augmented reality game, contribute to place attachment among players? 2) In what ways planners can utilize augmented reality games to achieve their planning goals? This study will answer these questions by exploring player history, behavior, and motivation through in-depth semi-structured interviews with Seattle-based *Pokémon GO* players. The interviews will accomplish a

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number of objectives related to player experience and gameplay location. These objectives include determining overall player experience, examining the bond between players and their preferred gameplay location, and determining the factors that influence player location choice. Additionally, the interviews will identify gameplay phenomena related to the field of urban planning which will guide the recommendations for how planners can utilize augmented reality games as an urban planning tool.

This paper begins with a literature review highlighting the wide breadth of research conducted on *Pokémon GO* and examining place attachment theory and concepts, including affective attachment, place identity, and place dependence. The research method section will outline the qualitative data collection process and analysis methods used in this research study. The results will showcase the themes and key findings expressed through participant quotes. The discussion will interpret the results for their meaning, relevance, and importance to this study's research aim, questions, and objectives. Additionally, the discussion will note the study's limitations and make recommendations for future research. Lastly, the conclusion will provide an overview of the paper's contents and provide potential opportunities to continue this study's work.

## Literature Review

During the height of *Pokémon GO's* unprecedented success, millions of players around the globe went outside, explored their communities, and gathered with other players in public spaces in what can only be described as an explosion of urban life. This social phenomenon piqued the interest of researchers to understand the phenomenon and discover the relevant implications to their respective fields. Though

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public health researchers have conducted the majority of studies identifying the game's impact on physical activity and mental well-being, other fields have carried out research to understand the game's history and success, player behavior and motivations, and implications for public space, sense of place, sense of community, and education. This literature review aims to understand the wide breadth of research conducted on *Pokémon GO*, determine and analyze key themes or areas of research, and situate this study within the literature by identifying potential knowledge gaps.

This literature review also explores place attachment literature to become familiar with the topic and its scholarly context. It reviews, sorts, and selects definitions, theories, and varying concepts of place attachment to find a suitable framework for this research study. The literature review gathers further information to develop a deeper understanding of these concepts and their processes, which will later be applied when interpreting the results. Lastly, it notes the benefits of place attachment to showcase why it is a worthy phenomenon to study for various subject areas. Understanding these elements of place attachment was critical in developing this research study.

### Pokémon GO's History and Success

To understand the phenomenon of *Pokémon GO*, researchers have explored the underlying reasons for the game's broad-reaching success. Some researchers have gone so far as to study the Japanese historical roots of the game. Through an ethnography completed in rural and urban Japan, Davies (2020) examined the Japanese social, cultural, and religious practices that underly the origins of Pokémon. Such locative practice activities include insect collecting, shrine pilgrimages, rail tourism,

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and stamp gathering. The parallels between catching Pokémon and collecting insects, which is becoming increasingly difficult in Japan's evergrowing urban spaces, have been noted as an intentional design choice to connect urbanites to nature (Dorward et al., 2016). Davies (2020) theorizes this deep history embedded within Japan's own location-based and seasonal play inspired the earliest development of the Pokémon franchise and became fully realized through *Pokémon GO*. Though specific to Japan, the underlying cross-cultural appeal of these collection-based activities helps to explain the game's global popularity and offers insights for future augmented reality applications.

Most studies have explicated the present-day factors that explain the unprecedented success of *Pokémon GO* through player interviews and surveys. Many studies identify nostalgia as a reason for success because millions grew up watching the *Pokémon* animated television series and playing the video game series (Bonus et., 2018; Ghazali et al., 2019; Tang, 2017). *Pokémon GO* presents the perfect opportunity to relive those memories by exploring the world in search of Pokémon and becoming a real-life Pokémon Trainer (Tang, 2017). The social aspects of the game, including cooperation and competition among family, friends, and other players, encouraged many people to play. This number grew even larger through its hype and powerful social influence, which drew in non-players. Through social media, strategic word-of-mouth marketing, and Niantic-promoted events and sponsored stops, *Pokémon GO* became a sub-culture with its own strong social norms, practices, and identifiers (Corres Luna et al., 2020; Tang, 2017). Understanding these underlying reasons for

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*Pokémon GO's* global success and its promotional marketing strategies is critical for developing further uses of such technology in other practical applications.

### Player Motivation and Behavior

While researchers have studied the reasons for the game's success on a macro level, there has also been interest at the micro level in identifying the individual motivations for continuing to play *Pokémon GO*. Some studies have established the initial motivations for downloading the game and why people decided not to download it all (Broom et al., 2019). Through a survey of 461 participants, Broom et al. (2019) identified the main themes for downloading the application, including social motives such as spending time with family and friends and competition to compete with others and themselves to 'catch 'em all' and become a Pokémon master<sup>8</sup>. Those that never downloaded the app failed to do so because of a lack of interest and time, had other preferred exercise activities, and felt the game was immature (Broom et al., 2019). Other studies that measured and assessed motivations through player surveys found that the three strongest motivations for playing *Pokémon GO* were outdoor activity, nostalgia, and boredom (Zsila et al., 2018). Some have noted other motivations, such as exploration, escapism, competition, enjoyment, and achievement (Zsila & Orosz, 2019; Ortiz de Gortari, 2019). Although studies have disagreed on the exact motivations for playing *Pokémon GO*, research has shown how such a multi-faceted game could achieve global popularity among people with different tastes and interests.

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<sup>8</sup> A title many Pokémon players seek to achieve. There have been a few interpretations such capturing all Pokémon or defeating the current Pokémon champion. However, recently it was revealed that the title means the relationship shown between Pokémon and their trainers.

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## Physical Activity and Mental Well-being

Most of the academic research interest in *Pokémon GO* has been in the public health sphere, exploring the game's impact on physical activity and mental well-being. Many studies have sought to quantify the anecdotal reports that the game increases physical activity through game's inherent design to have player 'go' out and play. (Althoff et al., 2019; Ma et al., 2018). For example, Althoff et al. (2019) conducted a three-month physical activity study using wearable sensor data, which found that it does lead to significant increases in physical activity over a 30-day period regardless of age, gender, or weight status. A study in Hong Kong sought to quantify the impact while researching how it varies among players with different levels of physical activity while also considering the built environment (Ma et al., 2018). Conducting a field survey among 1248 players across five different built environment study sites, including office, mixed-use, green space, residential, and retail in Hong Kong, found that *Pokémon GO* increased average daily walking and running by 18.1% within the first three weeks of installation and had a stronger association among less physically active players (Ma et al., 2018). This study identified a positive relationship between daily walking and playing in green spaces.


Studies have also targeted potential impacts on specific populations, such as sedentary people (Nigg et al., 2017). Through a survey of 486 players, Nigg et al. (2017) found that playing *Pokémon GO* increased moderately to vigorous physical activity by about 50 minutes per week and reduced sedentary behavior by about 30 minutes per day. Given the large array of *Pokémon GO* studies concerning physical



activity engagement among players, a research team conducted a systematic review and meta-analysis across 17 studies with a total sample of 33,108 participants and found that playing *Pokémon GO* was associated with increases in walking duration, distance, and steps taken (Khamzina et al., 2020). These studies, including the meta-analysis, show the potential for augmented reality games to be used as a public health tool to promote healthy and active behavior and lifestyles, even among sedentary populations.

In addition to increased physical activity, public health officials have researched *Pokémon GO's* impacts on mental well-being. For example, an 8-week study among Spanish adolescents between 12 and 15 years old analyzed the effects of *Pokémon GO* on cognitive performance, including memory, selective attention, concentration, mathematical calculation, and linguistic reasoning, as well as emotional intelligence including well-being, self-control, emotionality, and sociability (Ruiz-Ariza et al., 2018). The results found that *Pokémon GO* significantly improved their attention and concentration levels and led to better social relationships than their non-player peers. Bonus et al. (2019) examined whether playing *Pokémon GO* benefits players' psychological well-being and other positive responses. A survey of 399 US adults found that players reported experiencing positive emotions, including nostalgic reverie, friendship initiation, and friendship intensification (Bonus et al., 2019).


*Pokémon GO* also has the potential to be a behavioral activation and exposure tool for mental health treatment (Cacchione, 2019). One Japanese study focused on *Pokémon GO* as a potential intervention for hikikomori who are Japanese adolescents



and young adults suffering from severe social withdrawal (Kato et al., 2017). Kato et al. (2017) discovered that *Pokémon GO* did motivate patients to go outside on their own volition to catch Pokémon in places full of people. Though these studies have vastly different contexts, they collectively show the value of *Pokémon GO* as a tool to increase mental well-being across various samples, including children, adults, and even those requiring mental health treatment.

## Public Space

Prior to the popularity of *Pokémon GO*, researchers examined how location-based games impact public space. de Souza e Silva (2006) explored the concept of hybrid spaces, hybrid realities, and how these games contribute to them. She argued that hybrid spaces are comprised of users carrying mobile devices combining the physical and digital worlds into a social environment (de Souza e Silva, 2006). Sociability and mobility within this environment create a hybrid reality for users. Location-based games further connect users to urban spaces based on location, recreating them into multi-user environments. de Souza e Silva (2017) later used *Pokémon GO* as a case study to explore the concepts of mobility, sociability, and surveillance in hybrid spaces. She found that *Pokémon GO* added an augmented reality element making the entire urban space a playing field that fosters stronger connections to the physical space (de Souza e Silva, 2017). However, hybrid space sociability is limited because players cannot socialize within the game. Though *Pokémon GO* lacks certain components and has some privacy and data collection concerns, it presents the



best-case study for exploring how players of augmented reality games experience urban and hybrid spaces.

Researchers interested in the connection between *Pokémon GO* and public spaces have explored players' individual needs, experiences, and impacts. Potts et al. (2017) examined how augmented reality game players interact with public spaces and how public spaces meets their physical, social, and psychological needs. A survey of 994 Australian players found that augmented reality games encourage the visitation and exploration of public spaces (Potts et al., 2017). Potts and Lee (2019) later revisited their research and explored how these public space experiences vary across age and gender. While age, racial, and gender differences do exist within the *Pokémon GO* public space experience, particularly for mobility, sense of marginalization, and sense of place, the findings present an opportunity to increase the levels of engagement across public space among varying gender and age groups (Potts & Lee, 2019; Santry, 2019). Feldman (2018) delved deeper into *Pokémon GO* players' challenges in public spaces to explore the connections between technology, agency, and space. Through an online discourse analysis, Feldman (2018) identified three challenging themes, including rural v. urban play, governance within the space of play, and interactions between players and non-players. These studies represent the varying opportunities to learn more about how *Pokémon GO* impacts public space usage and the opportunity to use the game to increase and improve public engagement and socialization within public spaces.

## Sense of Place

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Many researchers have examined the connection between *Pokémon GO* players, their behavior, and place. Some note how the game creates individual player space and pushes and guides them to move in certain ways and linger in public places (Gerimenko, 2019; Rhodes, 2019). Through this game-guided exploration players visit spaces they may never have otherwise visited (Doerr, 2019). In these unknown areas, players use the game elements of PokéStops and gyms based on real-world points of interest as waypoints. The information they gather from the game, such as the place's name, picture, and location, helps the player make sense of the location. Players also have the opportunity to create place and place meaning through functions in the game (Doerr, 2019). For example, players can place a lure module on a PokéStop, which attracts Pokémon to that location for 30 minutes, making it a gathering spot for players to catch Pokémon. These *Pokémon GO* cases show how augmented reality games and their virtual overlay have the potential to enhance physical spaces and positively impact public space use and awareness.

While studies have shown that playing *Pokémon GO* encourages players to visit and engage with public spaces, researchers have further studied how they individually connect with the place they play. Wang and Hsieh (2020) explored the relationship between player experience and affection for their physical surroundings through the lens of enjoyment and environmental psychology. They discovered that game involvement includes enjoyment, self-determination, movement, and that augmented reality technology mediated the relationship between game and place enjoyment (Wang & Hsieh, 2020). Game transfer phenomena which account for the sensory, mental, and

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behavioral impacts of interacting with a blended physical and virtual reality support these findings (Doerr, 2019). Oleksy and Wnuk (2017) explored the relationship between augmented reality games and the emotional connection to the physical gameplay location. A survey of 279 participants found that positive emotions from the game, such as satisfaction and success, can lead to a positive perspective of the gameplay location (Oleksy & Wnuk, 2017).

Studies have further understood how closely players connect with the physical locations they visit in the game. Through a group observation of beginner players, Kot & Wyszynski (2021) found that while the players did not interact with the locations physically, they became familiar with the location through in-game information. Similarly, in a study on augmented tourism, Woods (2021) explored how *Pokémon GO* can make unfamiliar places and people feel familiar. Twenty-two interviews with Singapore-based players revealed that *Pokémon GO* helps players navigate unfamiliar locations through its map and waypoints, sparks local connections, and creates digital travel memories. Though different in scope and findings, these studies offer insight into how *Pokémon GO* can deepen the connection between players and place by increasing familiarity with the place, knowledge of the place, and positive feelings associated with the place.

### Sense of Community

After *Pokémon GO* was released, there was a conflicting narrative regarding the sociability of the game. Some believed the game increased chances of social interaction and created community, while others viewed players as wandering zombies just staring

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at their phones and isolating themselves. *Pokémon GO's* potential to create a sense of connectedness became a topic of interest for many researchers. Humphreys (2017) focused on the sociospatial aspects of *Pokémon GO* in determining if the game was a social catalyst or shield. While some people do use the game to shield themselves from social interaction, three distinct features within the game promote the game as a social catalyst, including cooperative team features, social interaction among players, and interaction between players and non-players (Humphreys, 2017).

Vella et al. (2019) took a comprehensive approach to examining the overall social outcomes of play and the mechanisms that promote it. Through a series of player interviews and online discourse analysis, they discovered that the social outcomes of playing *Pokémon GO* include strengthened ties with family and friends, icebreakers and conversation facilitation, and a sense of belonging within the *Pokémon GO* community (Vella et al., 2019). This sense of belonging stems from a feeling of community that can be both virtual and actual (Manning, 2019). The mechanisms to facilitate these social outcomes include outdoor gameplay, which is technologically accessible, easily integrated into daily life, and creates a shared passion (Vella et al., 2019). These studies indicate that *Pokémon GO* has the potential to create a sense of community through sociable gameplay qualities.

## Education

The *Pokémon GO* phenomenon and its augmented reality applications have garnered interest for their potential educational utility. Some have tried to capture the game's power to encourage physical activity, promote positive social relations, and

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spark incidental learning by incorporating the game into educational settings (Ruiz-Ariza et al., 2019). This endeavor is supported by their previous study that examined the game's potential to support health, social, emotional, and intellectual development (Ruiz-Ariza et al., 2018). Some argue that augmented reality keeps students motivated and engaged by transforming the classroom and enriching real reality (Cacchione, 2019). Educators have already utilized *Pokémon GO* as a learning tool in physical education, geography, language arts, and history lessons (Bruno, 2019; Trapido-Lurie, 2016). However, researchers have noted some limitations in these educational applications. The learning is unpredictable and depends on several factors, including overall content interest and alignment with the physical surroundings (Cacchione, 2019; Mozelius et al., 2019). Linking the game to the teaching situation and following up the augmented reality activity with traditional classroom lessons has been suggested. Nevertheless, augmented reality games remain an emerging technology that has the power to transform educational instruction and serve as a learning tool for students and players alike.

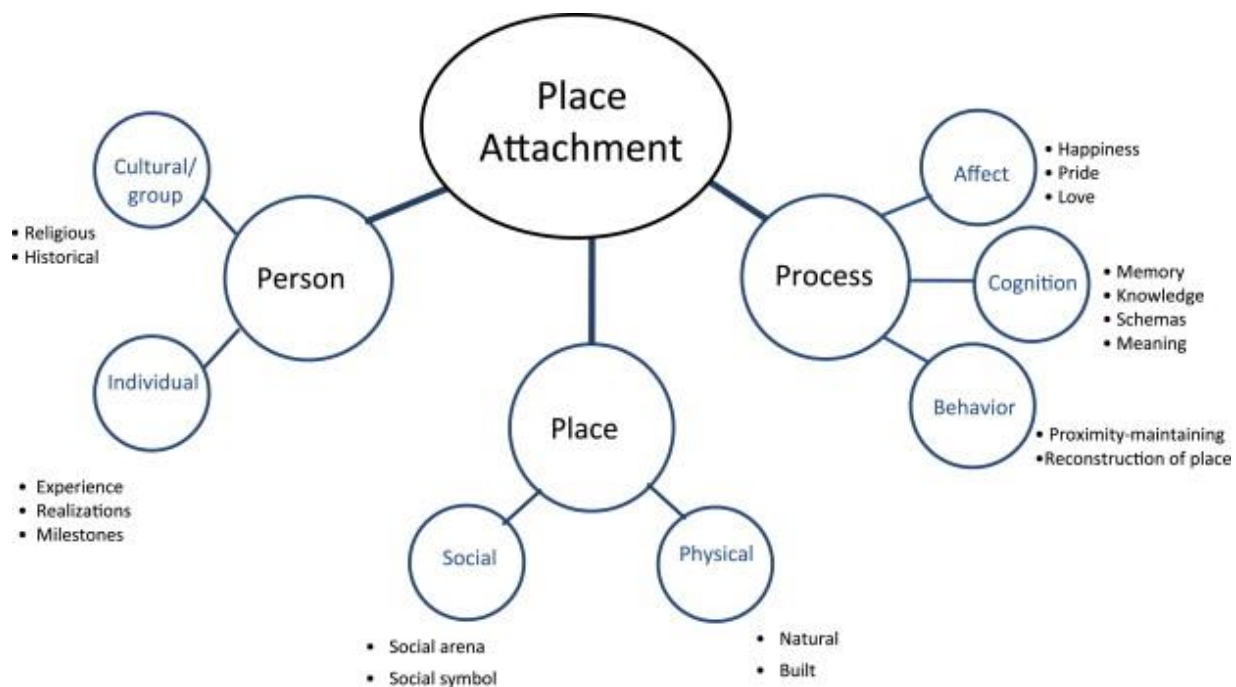
### Place Attachment

Within place attachment literature, there is a lack of consensus on the exact definition of place attachment. However, many agree it is a multifaceted concept that refers to the affective bond between people and place (Giuliani, 2003; Low & Altman, 1992). As shown in Figure 1, Scannell & Gifford (2010) proposed a tripartite organizing framework that incorporates the varying definitions from the literature into a three-dimensional person-place-process concept. The person dimension refers to the

individual and their experience and memories; the process dimension includes the behavioral, affective, and cognitive components of attachment; and the place dimension is its physical and social characteristics (Scannell & Gifford, 2010). This framework recognizes the diversity of place attachment elements and neatly organizes them into a single overarching concept that shows they are related yet distinct. It also emphasizes the person, place, and process components rather than focusing on the personal dimension at the expense of place and process, a common trend in the literature.

**Figure 1**

*Tripartite Organizing Framework*



*Note.* This model was produced by Scannell & Gifford in 2010, showcasing their three-dimensional framework of place attachment. From "Defining attachment: A tripartite organizing framework," by L. Scannell and R. Gifford, 2010, *Journal of Environmental Psychology*, <https://doi.org/10.1016/j.jenvp.2009.09.006>

## Place Attachment Theory and Concepts

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In addition to the lack of consensus on a single definition of place attachment, there are competing ways of conceptualizing place attachment, but each way is still coherent (Low and Altman, 1992). Patterson and Williams (2005) blame this on the variety of research traditions based on different epistemological foundations and assumptions. Still, many place-related concepts remain under the place attachment umbrella, including affective attachment, place identity, social bonding, place dependence, and place satisfaction (Lewicka, 2011). Hernandez et al. (2007) point out that place identity alone has at least four different perspectives on whether it is the same concept as place attachment, a component of place attachment, or two separate concepts. Despite the varying conceptualizations, leading place attachment scholars Low and Altman (1992) argue that most agree that the three main components of place attachment are affect, cognition, and practice. Affect is the emotional connection to place, cognition is the thoughts, beliefs, and knowledge of place, and practice is the behavior and activities within place (Low & Altman, 1992). Among the place related-concepts, these are most similar to affective attachment, place identity, and place dependence, so it is best to focus on these concepts of place attachment.

Place attachment literature considers affective attachment the base of place attachment as it is the emotional connection people form with place. While this is typically a positive emotional bond, researchers note that the connection can also be formed through an array of emotions and experiences, including negative ones (Manzo, 2003). Place identity refers to people's cognitive connection with place (Proshansky et al., 1983). It was originally defined by Proshansky (1978) as "those dimensions of self

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that define the individual's personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideals, beliefs, preferences, feelings, values, goals, and behavioral tendencies and skills relevant to this environment." Place dependence refers to the functional connection to place and how well the place serves the individual's goals (Stokols & Shumaker, 1981; Jorgensen & Stedman, 2001). Individuals become dependent on a place and less willing to go to alternatives because it offers superior resources or amenities for their desired experience. Despite the varying concepts, numerous studies have focused on these three particular elements when researching place attachment (Kyle et al., 2004a; Patwardhan et al., 2020; Stezelecka et al., 2017).

### Place Attachment Processes

The processes that form affective attachment, place identity, and place dependence are unique to each concept. Affective attachment occurs when the place evokes a certain emotion in the individual (Giuliani, 2003). People express their affective attachment through positive emotions like pride and love and proximity-maintaining behavior like revisiting the location (Scannell & Gifford, 2010; Hidalgo & Hernández, 2001). The positive feelings of affective attachment can also result from goal attainment within the location (Kyle et al., 2004a; Proshansky et al., 1983). Twigger-Ross (1996) explains the process of place identity using the four principles of the Breakwell model of identity. This model includes the desire for distinctiveness or uniqueness, continuity over time, self-esteem, and self-efficacy (Twigger-Ross, 1996). Place dependence forms when an individual recognizes a place's value for specific

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activities or personal goals (Bricker & Kerstetter, 2000; Williams & Roggenbuck, 1989). They are also aware of the alternatives and consciously choose the other location because of its superiority in serving their needs. The various ways that place attachment and its components occur shows how the relationship to place is truly a dynamic phenomenon.

### Place Attachment Benefits

Being such a multi-dimensional concept, place attachment has various benefits relevant to various fields and disciplines. Many have studied how the bond between the individual and place motivates action. Scannell (2010) researched the connection between place attachment and pro-environmental behavior and found a positive association. A similar study noted that place-identified respondents had stronger perceptions about environmental conditions than place-dependent respondents (Kyle et al., 2004b). Lewicka (2005) studied the connection between place attachment and civic activity and found a positive relationship mediated by neighborhood ties. Lewicka (2008) later found that place attachment leads to more substantial interest and care for a place's past. There has also been broad research interest in place attachment by the tourism industry. Patwardhan et al. (2020) researched the connection between place attachment and destination loyalty and discovered that place attachment directly influences loyalty through emotional solidarity. Place attachment can also increase the brand-building of a place through ambassador behavior, such as word-of-mouth from the attached resident (Chen & Dwyer, 2018). Other studies have noted that place attachment and place identity can empower residents through tourism development

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and serve as a primary catalyst for creating a festival atmosphere (Davis, 2016; Strzelecka et al., 2017).

Of course, there are also the emotional benefits of place attachment. Gilford (2017) studied the psychological benefits of place attachment through community member's descriptions of places and identified 13 benefits, including memories, belonging, relaxation, positive emotions, activity support, comfort-security, personal growth, freedom, entertainment, connection to nature, practical benefits, privacy, and aesthetics. Korpela and Hartig (1996) researched the restorative qualities of favorite places using the Pain Resilience Scale (PRS) and scores for being away, fascination, coherence, and compatibility were all high in the participant evaluations. These psychological improvements benefit the individual by improving mental well-being and supporting memory through increased ties to the past (Twigger-Ross, 1996). This transfers to the community through improved social capital and increased action (Manzo & Perkins, 2006; Lewicka, 2005). The wide variety of benefits of place attachment showcases why it is worthy of study in several fields, including psychology, environmental studies, and urban planning.

### Key Takeaways

The *Pokémon GO* literature revealed that the phenomenon has been a worthwhile case study in a number of fields. Interestingly, few researchers have explored the relationship between *Pokémon GO* and urban planning despite the connections between objectives that planners are interested in, including increasing walking, public space visitation, and creating a sense of place and community.


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Moreover, place attachment has been little studied and never in an American context. Additionally, many of these studies were conducted directly following the height of the game's popularity in the summer of 2016. Since then, the game has continued to develop and improve upon its initial release through regular content updates and in-game and in-person events. This situation presents an opportunity for continued research and for this study to fill the gap between *Pokémon GO* and urban planning by researching its potential to facilitate place attachment and its planning implications.

The place attachment literature revealed a messy field of varying definitions, concepts, and theories. Even the scholars themselves recognize the lack of consensus within their field. However, Scannell & Gifford's (2010) tripartite framework clearly organized the multi-faceted elements of place attachment. By reading further through the literature and sorting through the competing frameworks and theories, certain components of place attachment became consistent and clear. These components, including affective attachment, place identity, and place dependence, are particularly suitable for the study's context and were used along with Scannell & Gifford's (2010) tripartite framework to develop this research study. While perhaps not mentioned here, all place attachment literature reviewed was useful in developing an understanding of place attachment and interpreting the results.

## Research Method


This research study sought to understand how players of augmented reality games such as *Pokémon GO* can contribute to place attachment, using Seattle as an observation site. The answer to this research question required an in-depth examination



of player history, behavior, motivation, and experience regarding gameplay and preferred gameplay location. This study employed qualitative methods using an inductive approach to deeply explore player experiences and their bond with gameplay locations. The qualitative paradigm is often used in place-based social research to understand the experiential qualities of place (Manzo, 2019). This approach has been deemed particularly useful when examining place experience and meaning through the participant's perspective. An inductive approach informed by place attachment literature allowed the literature to provide a guide for place attachment concepts, while the inductive coding allowed the researcher to draw patterns from the experiences themselves.

Using *Pokémon GO* and Seattle as an observation site, the researcher conducted in-depth semi-structured interviews with Seattle-based *Pokémon GO* players. Interviews were selected as an appropriate data collection method because they most effectively explore participants' individual experiences and perceptions in rich detail (Creswell, 2014). Through guided conversation, participants could freely explain their gameplay experiences and express their place-based behavior and feelings. Interviews are a common qualitative technique employed within the place attachment literature (Lewicka, 2011). The semi-structured style ensured the interviewer could address inquiry topics while probing for additional information when appropriate.

An interview guide (see Appendix A) featuring 15 questions and 25 follow-up questions was created based on qualitative research techniques and place attachment literature (Creswell, 2014; Scannell & Gifford, 2010; Yale University, 2015). The first



question was an ice-breaker to ease the participants into the interview, make them feel comfortable, and create a light atmosphere. The following four questions focused on background player information to explore their gameplay history, goals, motivations, style, and location preferences. The remaining ten questions followed Scannell & Gifford's (2010) tripartite organizing framework, which synthesizes the varying elements of place attachment into a three-dimensional person-process-place concept. Two person-dimension questions examined the individual's experience with their preferred gameplay location. Two place-dimension questions assessed their preferred gameplay location's physical and social characteristics and their relation to their gameplay experience. Lastly, six process-dimension questions explored the affective, cognitive, and behavioral aspects of the participant's attachment.

In the interviews, the researcher served as the primary data collection instrument, which necessitates the identification of personal values, assumptions, and biases (Creswell, 2014). The researcher brought certain biases to the study from their experience as a seasoned *Pokémon GO* player and feelings of place attachment to gameplay locations. While these experiences and feelings aided the researcher in understanding the topic and developing the research study, there is a potential for these biases to shape the way the data was collected, analyzed, and interpreted. However, the researcher made every effort to ensure objectivity throughout the research process and eliminate researcher bias.

The researcher created a consent form that detailed the purpose of the research study and provided the participant with the relevant information to inform their decision

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to participate. For example, participants knew their personal information would be made anonymous through a pseudonym. The participant signed the form prior to conducting the interview. The researcher submitted an application including the interview guide and consent form to the University of Washington Internal Review Board (IRB). The University of Washington Human Subjects Division (HSD) reviewed the application on February 13, 2023. The University of Washington HSD determined that the proposed activity was human subjects research that qualified for exempt category 2. This determination was valid for the duration of the research and meant it was exempt from the federal human subjects regulations, including the requirement for IRB approval and continuing review.

To be considered a potential participant in this research study, the person had to be 18 years or older and an active Seattle-based *Pokémon GO* player. This means the person actively plays *Pokémon GO* in Seattle but does not have to be a Seattle resident. The researcher recruited potential participants at Seattle Center on Noibat Community Day<sup>9</sup> (2/4/23), Pokémon GO Hoenn Tour<sup>10</sup> Day I (2/25/23), Pokémon GO Hoenn Tour Day II (2/26/23), and Slowpoke Community Day (3/18/23). The researcher chose days featuring in-game events because they promote social and collaborative play easing the recruitment process. Seattle Center was chosen as the recruitment location to increase the likelihood of encountering potential participants. The researcher approached players actively playing *Pokémon GO*, explained the research study, and asked if they were

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<sup>9</sup> A monthly event featuring a certain Pokémon that encourages players to get and out play.


<sup>10</sup> A global event that took place between February 25<sup>th</sup>, 2023 and February 26<sup>th</sup>, 2023.

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interested in participating. If interested and fit the criteria, the researcher asked for a form of contact information and what potential dates and times work well and then let them know they would follow up to schedule the interview.

Participants continued to be recruited and interviewed until the point of data saturation. The researcher interviewed 20 participants in total over a period of five weeks (2/17/23 - 3/24/23). The interviews lasted between 40 minutes and 1 hour and 40 minutes, with an average duration of 55 minutes. The researcher presented the interviewees with the option of conducting the interview in person or online, allowing them to select their most convenient and comfortable option. Four in-person interviews were conducted at Macrina Bakery, Cal Anderson Park, Tabletop Village, and the Kraken Community Iceplex. The researcher recorded these interviews using an Olympus WS-331M voice recorder and the Easy Voice Recorder mobile app. The researcher used two recorders in case of any technical malfunctions. Six interviews were conducted over Discord using voice and video chat and recorded using Open Broadcaster Software (OBS). The remaining ten interviews were conducted over Zoom and recorded using the local record function. The researcher took hand-written notes during all interviews in case of recording failure.


After completing all 20 interviews, the voice recording files were gathered and imported into the speech-to-text transcription application Otter.ai. Software transcription was conducted rather than manual transcription to increase the time efficiency of the research process. The interviews were transcribed all at once rather than as they were conducted so the researcher could complete the process within one



billing cycle of Otter.ai. After the initial software transcription, the text was manually checked and cleaned for spelling and grammatical mistakes and organized to ensure that all quotes had been attributed to the correct speaker. Each transcription was reviewed twice after the initial cleaning to ensure the best possible accuracy within the limited time frame.


Once all transcriptions were ready for analysis, the researcher read through all the data to get a sense of the general ideas presented by the participants. The researcher took notes regarding these ideas and other general phenomena observed within the margins of the transcript in Otter.ai. The researcher organized the interviews into a spreadsheet that included the interview's length, the interviewee's speaking percentage, a brief description of the interview, general phenomena observed, and their favorite gameplay location. Each interview was graded on a three-color scale for each of the three elements of place attachment: place dependence, place identity, and affective attachment. Green indicated the researcher felt there was substantial evidence to suggest they experienced that element of place attachment, yellow indicated probable evidence, and red indicated little to no evidence. All interviews were ranked based on the three-color scale, number of general phenomena, interview length, and speaking percentage. Given the limited timeframe, this ensured that the interviews with the richest data were prioritized and analyzed.

The researcher uploaded the interview transcripts into the qualitative data analysis software ATLAS.ti. This software was chosen over other qualitative data analysis software such as MAXQDA or NVivo because of its intuitive user interface and



because it offered a budget-friendly student license. The coding process followed an inductive approach guided by place attachment literature to inform the researcher of what to look for regarding affective attachment, place identity, and place dependence. Generally, it was an inductive data-driven coding process where codes were developed based on emerging information from the participants. This followed the traditional social sciences approach and allowed for the exploration of ideas and meaning (Creswell, 2014; DeCuir-Bunby et al., 2011). Beginning with the highest-ranked interview, the researcher went line by line and broke down and organized the data by assigning codes to represent meaningful information. The researcher assigned individual codes to chunks of data ranging from single phrases or sentences to entire paragraphs. The researcher coded as thoroughly as possible to allow for data expansion, transformation, and reconceptualization (DeCuir-Bunby et al., 2011).

Every time the researcher created a new code word, its context and meaning were defined to ensure consistency throughout the coding process (Miles & Huberman, 1994). As new themes emerged, the researcher reviewed previously analyzed interviews and reviewed and revised the codes as needed. This approach was consistent with the iterative process of data-driven coding (DeCuir-Bunby et al., 2011). Limited by time, the researcher coded interviews until the point of data saturation. The researcher coded 16 of the 20 interviews featuring 387 individual codes. The researcher created a codebook of all 387 codes, including their definitions. Using this codebook, the researcher reviewed each interview to ensure that all codes were applied consistently throughout the finalized data set.



The codes were organized into code groups to explore potential themes and the relationships between them (Crewswell, 2014). The code grouping process began with a list of preliminary groups identified by the researcher throughout the coding process. The researcher went code by code and assigned them to the appropriate preliminary code group. During this process, new code groups were created based on the discovery of new thematic connections between codes. After reviewing all 387 codes, some still needed to be assigned to a code group. The researcher reevaluated these codes, either assigning them to an existing code group or creating new code groups based on newly identified connections. The researcher reviewed the preliminary code groups and deleted those without any codes. Once each code belonged to a code group, the researcher reviewed all code groups to look for overlapping trends amongst the codes. Based on these overlaps, code groups were combined to form larger code groups or divided into more specific ones. Codes belonging to two or more code groups were reviewed and condensed into as few groups as possible.

In total, the researcher identified 43 code groups. The researcher created a final codebook (see Appendix B) containing their code names, definitions, and examples. The finalized list of code groups was reviewed and further grouped into nine categories based on thematic similarity. *Pokémon GO* and place attachment literature informed the grouping of the code groups. These final nine groups consisting of the 43 sub-groups represent the main themes identified during the coding process. Using the digital collaboration platform Miro, the researcher visually organized all code groups and their respective codes into larger groups. This visualization allowed the researcher to explore

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the connections between more prominent themes and further organize the data based on the research questions and objectives. Interpretations were made based on these connections, place attachment theory and literature, and the researcher's understanding.

Qualitative validity and reliability were ensured throughout the analysis and writing through a number of procedures. The researcher clarified their role, history with the research topic, and how they would eliminate potential researcher bias. Many interviews, perhaps more than necessary, were conducted to gather an abundance of information from various perspectives. The researcher spent a prolonged period of time transcribing, coding, and interpreting the interviews to develop a deep understanding of the phenomenon. The researcher also checked the transcriptions many times to ensure no apparent mistakes remained. The researcher constantly compared the codes with the data to ensure no drift in code meaning. The more time the researcher spent with the data in these ways, the more accurate and valid the findings became (Creswell, 2014). The themes drawn from the convergence of the abundant participant perspectives added validity to the study. The researcher also presented contradictory evidence to create a more realistic and valid analysis of the themes.

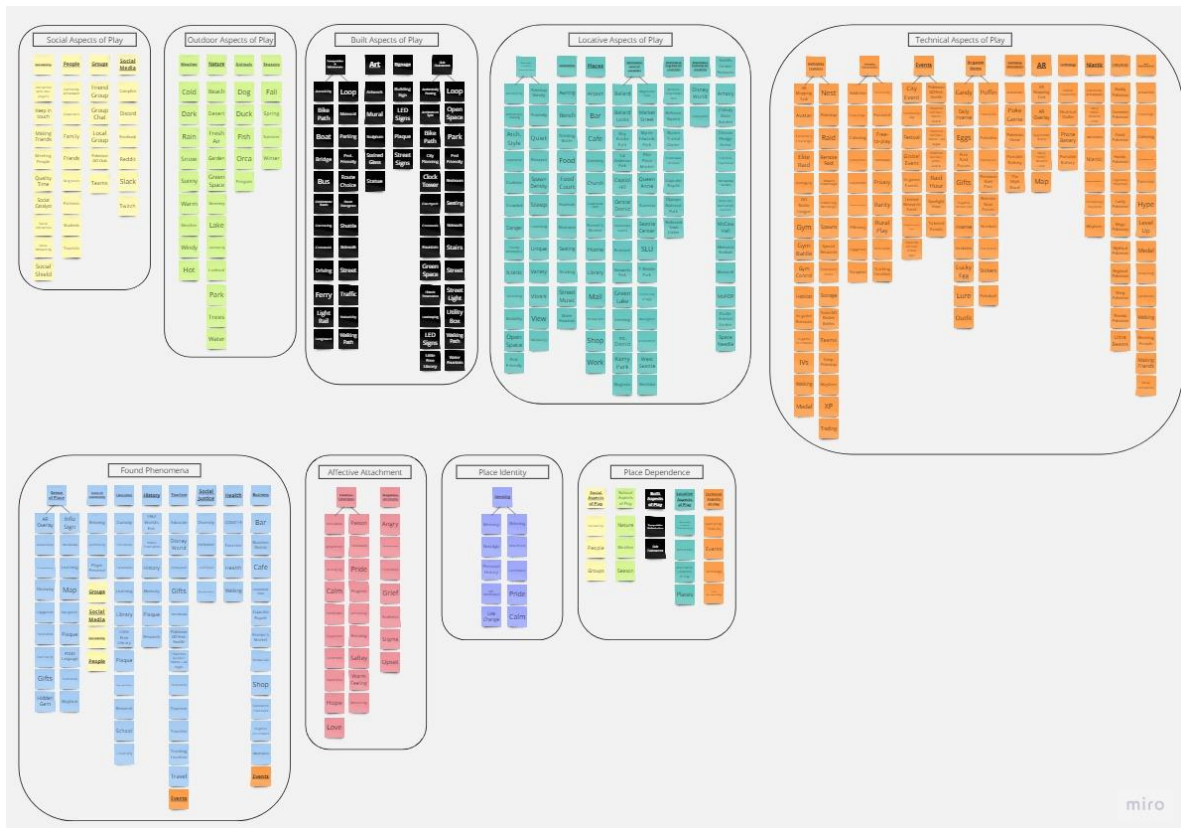
## Results

Through the inductive coding process, the researcher identified many subgroups related to larger themes as shown in Figure 2, including the dimensions of the player gameplay experience, urban planning phenomena, and the three elements of place attachment. The dimensions of the player gameplay experience include social, outdoor,

built, locative, and technical aspects. These gameplay experience themes represent the different elements the player wants to experience and what the player actually experiences while playing *Pokémon GO*. The phenomena related to urban planning include sense of place, sense of community, education, history, tourism, social justice, health, and business. While related to place attachment, these themes were supplementary data identified during the coding process that is still significant to the overall study. Lastly, themes related to place attachment included affective attachment, place identity, and place dependence. The place attachment literature informed the identification of these themes and was critical to answering the research questions.

**Figure 2**

*Visualization of Code Groups and Themes*



## Social Dimensions of Play

The social dimensions of play were the ways in which interviewees characterized their social motivations and experiences regarding *Pokémon GO*. Many interviewees noted that their motivation to play *Pokémon GO* was for social reasons. When asked why they play *Pokémon GO*, interviewees often mentioned the game's ability to promote social interaction. Caleb pointed out the difference between the sociability of *Pokémon GO* and other massively multiplayer online games (MMOs):

It tries to prioritize in-person interactions and things like that, which is, you know, not something most MMOs ever do.

Respondents specifically mentioned meeting people through these social interactions facilitated by the game. Steven explained how meeting people has allowed them to achieve otherwise likely unobtainable gameplay goals:

But also, I appreciate it in the sense of another reason to play the game is meeting all the different people that you do, and eventually, and this has already happened to me, I've met people who are willing to trade these Pokémon that they have from those different regions that I'll never do, or I'm unlikely to ever go to.

In addition to meeting people, many interviewees cited that they have made friends as a result of these social interactions. Steven detailed how just having the game open sparked a friendship:

While playing definitely either sitting down inside some restaurant, store what have you they'll glance over see what I'm doing like 'Is that *Pokémon GO*? Can we be friends?' So definitely made connections just by having the game out while I'm in a stranger's notice. I always say yes, absolutely. 'Can be friends?' I'd love to!

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Steven went on to say how these kinds of interactions have made them feel more at home in their neighborhood despite recently moving there:

Ballard is home I mentioned have lived here for a little bit less than a year. But through playing the game and getting what I'll call like the free interaction with other people just by having the game out and having that in common with them and all of that sort of culminating into you know building up a social network, building up a familiarity with the area it's much easier for me to call Ballard my home even after only living here for as long as I have.

In some cases, participants referred to “making friends” by adding each other to their friends list in the game, while others indicated they became friends outside of the game as well. Lillie clearly illustrated this difference when asked about whom they play with:

A lot of the people I play with I've known outside, but there's a handful of people I've just walked up to, and like there will a bunch of people will be standing around all saying, 'Oh my god, this is a great one it's just spawned right here' like you hear people talking about it and then you just started the conversation. I've made friends on the app a lot through that and then maybe I'll say maybe five or six of those, like, a couple of dozen people that I've met and friended have actually become people who I would spend time hanging out with not necessarily just playing the game like going to see movies that kind of thing.

Some interviewees commented on how these social interactions frequently occur during in-game events, which often promote social play. Miriam described their social experience during community days:

This has happened at all the community days where I'm just sitting next to somebody and then we become friends.

Wally described how raids during the city portion of Pokémon GO Fest: Seattle<sup>11</sup> played an integral role in bringing strangers together:

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<sup>11</sup> A three-day in-person ticketed event that took place from July 22<sup>nd</sup>, 2022 to July 24<sup>th</sup>, 2022 in Seattle, most prominently at Seattle Center.

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We for the city portion we formed like just a roving band of people who all happen to do the same raid we were like, alright, well now we got to go walk around. We just went to like all go together and like eight strangers just like in true Pokémon fashion just started a journey together. I don't know along the way we lost some, we gained some and whatnot but we had this like, sort of coming together of strangers and that was incredible.

Beyond meeting people and making friends, interviewees also discussed ways in which they have created or joined a network of players. Many have used social media applications such as Campfire<sup>12</sup>, Discord, Facebook, Reddit, Slack, and Twitch. Discord, in particular, was the most popular form of social networking. Respondents mentioned joining *Pokémon GO* Discord servers like Mega PokéGO Seattle to meet other local players, coordinate and complete in-game tasks, and play together during events like community days. Respondents noted that they often play community days at locations where the members of the Discord server decide. For example, Miriam said, "Seattle Center is a place that the discord group has used a lot. Although sometimes the Discord group alternates between Seattle Center and Green Lake and we will walk the lake." Marnie shared their experience meeting a player through Discord to make a trade and the realization it helped them make:

Yeah, because the first time we actually started chatting was when we met up at like, so we kind of connected on Discord because we were trying to make a specific trade of Pokémon and we said we'll meet up at Cupcake Royale. So the first time we met in person, the first time we really talked with each other was at Cupcake Royale. It was a nice realization because I'm like, I think because of those meetups, that Cupcake Royale made it was like oh, wait a second, it's not just young people playing it. It's actually people around my age or older that are playing.

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<sup>12</sup> An social app created by Niantic that aims to connect players with other players.

Respondents also noted joining more localized neighborhood-level Discord servers to participate in weekly events such as Wednesday raid hour, where a legendary Pokémon<sup>13</sup> spawns in raids from 6:00 to 7:00. Calem detailed their experience playing with a local group in Ballard and Wallingford:

The local Wallingford group has a surprising number of like, elderly folks. Like who are like talking about their grandchildren all of this stuff, and it was just sort of a shock to show up and, you know, have it be mostly these old women playing together? I just, I just found it, you know, a lot of the group days and whatnot are a lot of younger folks. But you know, there's a couple of, you know, more adult folks in there. But then this group being majority like elderly was just sort of an entertaining surprise, right? Yeah. I wasn't expecting that. And then the Ballard group I believe the creator of the POGO Seattle Discord server, they live nearby, and they run the raid hour regularly. But they have routes planned out and you can go on Discord and see all of the routes and see all the gyms that they tend to hit and how far they tend to go.

In addition to making new social connections, interviewees highlighted the importance of deepening existing connections through the game. This included connections to family, friends, partners, neighbors, coworkers, and students. Miriam described how the game brought her family closer together:

My son would come over once a week and it really changed our relationship because he would come over daily if we needed to trade something or you know, do raids. I had back surgery and so he was coming over and driving me around to the raids, and then we would bring in the other family members too.

Respondents also mentioned ways the in-game mechanics or events structure facilitate these connections, including raids, community days, and global events like GO Fest.

Lillie mentioned how community days have given their friends a reason to get together:

Um, I think it was because it was a reason to go outside and find a way to play with a friend because everyone was playing it. But it was actually at least in the

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<sup>13</sup> A subgroup of Pokémon that are extremely rare and powerful.

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city for me and for my age range it was hard to coordinate with friends a time to go play together because everyone has their own lives. Whereas something like a community day, we would all look forward to it. It was kind of it was a reward-based kind of event. You're like, yeah, I've got to make time for it and then I'll play with people as I do it. So it was kind of a win-win for both player and friend interactions.

Respondents further noted the creation of friend groups or clubs based around playing *Pokémon GO* together. They typically mentioned playing together during in-game events like raid hour or community day and often used group chats to coordinate gameplay and share achievements. Miriam described how group gameplay influenced interaction with other players:

So, and then in North Carolina, when I walk around with my family, we, you know, there's other people you encounter and some of that's more like, private like, like, you don't want to communicate because they're not in your group.

Lillie also mentioned how *Pokémon GO* works like a social shield to their benefit:

It's gonna sound a little weird. It was kind of like a little bit of a self-defense thing because if I look busy on my phone, but I'm not necessarily wearing headphones, anything as a woman walking around in the city that makes me look less approachable was always a benefit and something like Pokémon was kind of nice, because you could play it, but it never took so much of your attention, like reading an article or something and it also wasn't so attention-drawing that I couldn't walk safely, like being able to put the phone down when I'm crossing a street and stuff. So I really like the ability to kind of be in a bubble. So it's like I can hang out with friends but by myself, it kind of makes me look a little less like don't try to give me your flyer and don't try to interact with me and don't try to do whatever creepy 'I'm new to the city I need to like' thing. Yeah, I don't know why I get those a lot, those kinds of creepers. So I like that about it.

In summary, interviewees described the sociability of *Pokémon GO* through their own social goals and experiences. This included social interaction through meeting people and making friends and social networking via social media. Additionally, interviewees detailed whom they play with, how and why they play together, and how the game

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mechanics and in-game events helped facilitate this social gameplay. Importantly, not every interviewee reported using the game as a social catalyst; some preferred using it as a social shield.

## Natural Dimensions of Play

The natural dimensions of play were the ways in which the interviewees described how nature or outside conditions impacted their play experience and influenced their gameplay decisions. Many interviewees talked about weather conditions regarding their gameplay location choice. Weather conditions that presented gameplay challenges included temperature, wind, snow, rain, darkness, and sunlight. In certain situations, interviewees played at locations that allowed them to adapt to the weather challenges. Miriam described how they play when it is raining outside:

In fact, it's raining and I have done this more times than I like to admit, I have gone to Green Lake parked and then driven to the other parking lot and spun the gyms back and forth because I could park near enough to the stops so I don't even have to walk like on Tuesday when things are spawning and I don't want to get out.

Miriam went on to say how this has potentially changed the way they use Green Lake:

I'm just sitting in my car which would not be fun if it wasn't for *Pokémon GO* but I'll go there and just enjoy the lake in the rain and maybe I'll walk to hit a PokéStop or two, but maybe it's changed the way I use the lake.

Interviewees also described how gameplay locations that address these weather-related challenges are an attractive point. Lillie points out how Seattle Center is a weatherproof location:

Seattle Center, like it's what's uh, what's another nice thing about it is I feel like it is more equipped for year-round playing because whether it's really cold out or

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really sunny out, there's a lot of places where it's air-conditioned or heated, and you can just kind of take a break. Like, oh, we've been walking around for half an hour, because when I sit for a bit, we don't have to sit on a bench to the side of a path with no cover and most likely, like very strong winds in the winter and blazing sun in the summer. So it's much more creature comfort friendly. If you're someone who doesn't want to be away from your creature comforts for too far. So that's another perk.

Similar to weather, interviewees brought up seasonal play or how they base their gameplay on seasons. Winter presented the most significant challenges for the interviewees. Dawn highlights this issue while comparing playing at Seattle Center to playing in their home state of Alaska:

Honestly, like it just makes it feel more cozy in a way. Especially if you compare it to like, here with like snow everywhere like playing only based off seasons playing outside kind of thing. I think it enhances the experience and I mean just walking outside makes you feel good. Versus like sometimes here when we have to play because it's so cold we kind of have to just drive around which is kind of lame.

Dawn further elaborated on how the cold of winter determines their gameplay location decisions in Alaska:

It's like a big parking lot to the point where we're able to just drive in like a circle but it's not like a boring drive. We'll get like different spawns and there's like a couple of gyms there like if there's any reason. A lot of times that's where we do like community day if we feel like walking. Honestly, if it's cold outside we go to the airport. If it's not cold outside we play in downtown.

Interviewees also noted summer as a season with particular weather challenges including sunlight and heat. Erika recounted how a particular location in Miami was attractive to them because of how it handled the challenge of summer:

So while visiting Miami, I played at a place called Bayfront Park and very similar to Seattle Center a place for tourists. However, this place definitely wasn't as good as Seattle Center, but there's still a nice park area on the waterfront near downtown Miami so there are lots of skyscrapers and you can see really nice

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views. But the one thing that was a draw for me is because I played there in the summer, so it's really hot and you're walking around outside for like, at some of these events, like six hours, right? So there's a mall area, like an overhanging mall, it was like kind of an outdoor-indoor mall. But it was under like an awning so it was shaded and then there were actual stores you could go in and that was nice. So you can get away from the heat play under there, with lots of stops and lots of shops to visit too.

On the other hand, some interviewees regarded summer as a positive for their gameplay experience and even enhanced their gameplay location. Lance discussed how Olympic Sculpture Park became a more lively, social environment during the summer:

In the summer, lots of I mean, it's pretty crowded and it's got lots of people doing activities, you know, Frisbee, you know, fetch with their dogs and tight rope like slacklining you know, just chilling out in hammocks. It's usually like any park, it's, you know, people going there with their friends and family to hang out. So it's like an open social environment, I guess, in the sense that you can just like, go and meet new people. Yeah, it's like really lively and social.

When discussing their preferred gameplay locations, interviewees often mentioned the location's natural features. Commonly praised natural elements included fresh air, greenery, green space, trees, lakes, and water. Lance noted how these elements help them satisfy their gameplay goals:

Oh, yeah, I mean, I would much rather play in a like a, like a green area by the water with fresh air away from the streets. Then like if you're playing downtown, for example, yeah having to constantly watch where you're walking.

Other interviewees pointed out similar advantages of playing in an area with greenery away from the dangers of the street. Calem explained the safety benefit of a green buffer while talking about the natural elements of Green Lake:

It's a good naturey spot, right? Like, you know, there's green on all sides of you, as you're walking around. There are some spots where it's very hard to see the road, not a ton but I'd say, maybe 10% of the route, you know, you can't really

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see the road from while also being sort of a good length. So it feels like a safe space and being so naturey it feels distinct from other city locations.

For some, these elements are factors in deciding their gameplay location. Cheren

described it as a major factor when talking about potential locations:

One major factor is if it's a park or lake or something. So it's nice to walk around and also get a bit of fresh air and get some steps in not really a crowded city or someplace where you have to worry about traffic lights and stuff. Just walk in the park and just keep strolling around.

Others pointed out how the natural elements bolster their enjoyment while playing at a location without necessarily needing to aid them in their gameplay goals. Cynthia

explained how the natural elements of Olympic Sculpture Park are part of their personal meaning:

That's what makes Olympic Sculpture Park so wonderful for me because you do get like that tree made out of metal and so you get the art and the handmade arts but there's the water and there's the beautiful trees and in the summertime there's the gardens like going through the rose garden and you can see the ferries come and go. I love all that.

Lance described similar elements when explaining why Olympic Sculpture Park is their favorite place to play:

Olympic Sculpture Park is pretty great. Some great views of the ocean, they're really great. Like, tree cover. There's cool pocket beaches. It's kind of tucked away.

In summary, interviewees described the natural elements they consider when playing *Pokémon GO*. Many brought up the challenges of weather and how they choose gameplay locations based on how well they address them. Seasonal play was also a factor, and the current season determines their gameplay experience and location

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choice. Lastly, interviewees cited natural features as a plus for gameplay locations based on safety concerns and general enjoyment.

### Built Dimensions of Play

The built dimensions of play were the ways in which the interviewees described how the elements of the built environment impacted their gameplay experience and influenced their gameplay location choice. The most frequently mentioned subarea of the built environment was transportation and infrastructure, specifically accessibility and walkability. Forms of transportation included the bus, ferry, light rail, monorail, work shuttle, driving, and walking. Many mentioned transportation accessibility as a factor when deciding their gameplay location. Lillie mentioned this when asked how likely they would be to play in a location other than Seattle Center:

Very, very low unless it was incentivized, or my friends were like, if it was, if I want to play with a bunch of friends, and the majority of them are all going to a different place, it would, I might still not even go to meet them, depending on how accessible it is to me because I do in the city without a car. So if they're going to try to go somewhere that's not accessible, and there's really no incentive for me to go play with them. I prioritize playing at the center with whatever friends would meet me there rather than going anywhere else.

Other interviewees who do not have a car noted a similar experience when considering alternative locations. Cheren explained why accessibility is a factor:

I do look for accessibility. Like, so I don't have a car. So is it easily accessible using public transport? That's probably a big factor for me.

Lance shared a similar sentiment:

I mean, very willing, I'm open to going anywhere. My limiting factor is I sold my car when I moved downtown because it kept getting broken into. So I'm like,

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limited by how far I can go without an Uber or like renting a car or whatever, or wherever my longboard will go.

On the other hand, interviewees praised gameplay locations with accessible transportation. Jessie mentions how the monorail helps them get to Seattle Center:

Yeah, and plus, I like usually take the monorail there because I live downtown now. So it's just super convenient.

Erika recounted a similar experience while also highlighting accessibility being a factor for alternative locations:

Like I've definitely looked at other areas. I've heard Bellevue is a good place to play but it wouldn't be as convenient for me to get to. I think that's one thing about Seattle Center and since I've been in Seattle, it's always an easy location to get to with the light rail and monorail or even bus so I would look for a place that I can get to similar to Seattle Center in those ways and also would have like good transit connections to because like Bellevue is a place I would consider but I'm not sure how easily I could get there to be honest.

In addition to transportation and accessibility, interviewees frequently mentioned the pedestrian friendliness and walkability of the play location. They specifically cited pedestrian elements of the built environment, including crosswalks, open spaces, sidewalks, loops, and walking paths. Many interviewees noted pedestrian safety as a key concern regarding gameplay location choice. Calem illustrated the difference between playing in a pedestrian-oriented space versus a car-oriented space:

But the fact that Green Lake is, you know, paths that are not street adjacent and you know, very, right, I mean, it's made for walking, right, it's an area that's made for walking rather than, you know, made for cars, like most of the rest of the city.

Wally expressed a similar sentiment when talking about the benefit of playing at Seattle Center:

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I really liked that it has a long, sort of consecutive path you can walk without having to cross any streets. Obviously, like, if I'm going across the street, I have to like, sort of zone out of my phone and zone into the streets so I don't get killed and it's nice to be able to not have to worry about that because I'm not crossing any.

In addition to safety, interviewees often described how pedestrian elements like loops and paths helped them achieve specific gameplay goals. Caleb described how Green Lake's loop allows them to collect in-game items from PokéStops:

Well, I can walk back and forth on a path where there's a lot of stops and so it's easy to access them, and you're by the lake and it's a nice place to walk and I don't walk around the whole lake but there's the place I like and by the time I get back, they've all turned blue again so it's perfect as my little loop.

Lance explained why they chose a certain pathway at Olympic Sculpture Park to hatch eggs<sup>14</sup> and maximize daily incense<sup>15</sup> spawns:

The distance it's like a long stretch of bike path and you know sidewalk so the way like *Pokémon GO* tracks distances it will like muddy the numbers if you're walking like in circles or if you're making a lot of turns it won't accurately count like the distance you walk. It's also better for like hatching eggs and doing the daily incense in a long straight line at like a pretty fast pace. If you want to maximize how many Pokémon you'll get spawning so yeah, stuff like that is the reason why I choose for like gameplay mechanic wise why I would choose that stretch of park.

If not for specific gameplay goals, interviewees noted how playing in a pedestrian-friendly environment can increase their enjoyment of the game. Erika described this effect while playing at Seattle Center:

I think the pedestrian flow makes it really fun and easy to do like the laps and the walks and, like, even if I do my normal walk back and like, okay, I'm gonna take a loop around Climate Pledge, I'm gonna go down below the south of the

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<sup>14</sup> An in-game mechanic that allows players to obtain Pokémon by walking a specific distance.

<sup>15</sup> A daily in-game item that attracts Pokémon to the user for 15 minutes while walking.

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Pacific Science Center, and it makes it really interesting and fun to hit up a lot of stops and hit just a lot of areas while playing the game.

Other interviewees echoed a similar sentiment concerning the variety of built elements within the gameplay location. When asked what they would look for in a gameplay location, Erika likened a similar description to Seattle Center:

Ideally a similar place to Seattle Center that has like, the same kind of atmosphere and variety of buildings and variety of areas and variety of styles that also feels very open.

Lillie noted how landscaping helps create unique areas within Seattle Center:

That's what's it's one of the nice things about the landscaping around there is that everything is public and walkable and open and pretty much visible from really far away. But it's kind of all kind of sculpted well enough that it really is kind of like little pockets here and there for all these different spaces to be their own thing, which is really nice and really what I think makes they're pretty special.

Jessie was keener to pick up on the varying architectural styles offered by Seattle Center:

I definitely like the architecture the mix of the modern and the original buildings and also the history of it.

Furthermore, interviewees pointed out the impact of the 1962 World's Fair. Erika described the dichotomy of architectural styles that remain present:

I love that feeling of like the remnants of the World's Fair while also having a more modern buildings so I love Climate Pledge Arena that little loop of stops and the Armory like the historic buildings themselves and like the modern art that's there too.

Like Erika, who mentioned modern art, others also appreciated the presence of artwork at the play location, including murals, sculptures, stained glass, and statues.

Interviewees often mentioned artwork when referring to a PokéStop or gym they

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represented. Lance talked about how they seek art-related gyms to get gifts to send to friends:

As far as like gifts, like who wants to look at a plaque that commemorates some guy that donated money there or is like in remembrance of them? Like you can't even read the text. It's just like a picture of concrete or metal. So like, I won't spin those but the PokéStops that I do spin are things like the gyms right up at Olympic Sculpture Park there's like gyms for some of like the major sculptures. They're like that giant goat head, I think is what it's called. There's like a fish sculpture. There's the PokéStop for like this red. There's like a giant red abstract art sculpture that kind of looks like Charizard. It's like this giant red metal sculpture that looks like it could be Charmeleon or Charizard that's like roaring. And it has like a nice view of the Space Needle in the background. That's one of my favorite gifts.

Participants often assign value to different cultural points of interest, such as the Space Needle, as a part of the gift giving mechanic. To recap, interviewees discussed the ways in which the built environment affects their gameplay experience and gameplay location choice. Within the subareas of the built environment, transportation and infrastructure were the most commonly referenced. Interviewees frequently mentioned concerns regarding accessibility and walkability, especially when considering alternative gameplay locations. They also cited pedestrian elements such as open spaces, walking paths, and loops as important elements that help them achieve their gameplay goals. The variety and diversity of architectural styles and areas also increased enjoyment among interviewees. Street art was also a consideration for sending interesting gifts.

### Locative Dimensions of Play

The locative dimensions of play were the ways in which the interviewees described the characteristics of their preferred gameplay locations. Many also belong under the built dimensions of play, including accessibility, architectural style, pedestrian

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friendliness, variety, and walkability. However, many characteristics were related more to gameplay and the social characteristics of place. Gameplay characteristics were by far the most frequently mentioned consideration among interviewees. Chief amongst them was PokéStop density, which means there are many stops located close together which allows the player to easily replenish in-game resources. Most interviewees talked about how it is one of the most important characteristics to help satisfy gameplay needs. For example, Cheren mentioned how they match gameplay location choice to density needs:

I also look for like if it's a dense area. For PokéStops or gyms depending on what kind of event it is. If I need to focus on getting more research or something, then they should be going to want to PokéStops nearby. [...] If there's an event focusing on gyms, for whatever reason, like raids, then there should be a good amount of gyms there, too.

For some the PokéStop density attracted them to unlikely locations. For example, Drake talked about why it brought them to play at the mall:

Well, frankly, it's the density of PokéStops. So you need to place that has been judged by Niantic to be interesting because a mall can have a lot of PokéStops, and malls are not terribly interesting, frankly but the density of PokéStops physically in game wise is what draws you there.

Tied to PokéStop density is also spawn density because more Pokémon spawn near PokéStops. Calem illustrated this connection when explaining why they played at Green Lake to catch a certain Pokémon species:

I went there because I wanted to catch a lot of Slowpoke which, just because there are a lot of spawns there and so it was better than just sort of walking around a random spot because I think spawns are tied like there are more spawn points near PokéStops and so areas that are dense with PokéStops tend to be dense with spawns, right?

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Wally mentioned spawn density when talking about what makes Seattle Center a popular place to play *Pokémon GO*:

Seattle Center feels like it's kind of the mecca of everything. Like everyone comes there. It's got the most spawns it's got the most people like even you know, for events that are global. That feels like the largest place I can go to in reasonable proximity and I like that about it and that it's also just super spawn-dense which is nice.

They bring up another element players consider with locations: the density of other players. Player density was an important consideration for some because it helped them achieve their social goals for playing *Pokémon GO*. Wally described why it pushes them to play at Seattle Center over Redmond Town Center (RTC):

It's dense. I think, like, I like to play the game with people and the fact that there are more people there means that I have more people to interact with. Whereas, you know, something like RTC because people aren't coming there as much specifically to play *Pokémon GO* like, you'll notice a couple of people playing but it's not quite the same.

Interviewees mentioned the presence of players as a critical element in accomplishing other gameplay mechanics. Raids, a gameplay activity that requires cooperation among players, was often cited with player presence. Cheren expressed this when explaining why they chose Seattle Center for larger-scale events:

For much more bigger events I definitely prefer Seattle Center where you need to be in a crowded area with lots of people who can help with raids.

Interviewees also commented on how the density of players contributed to creating a friendly atmosphere. Dawn compared this difference between playing at Seattle Center and in Alaska:

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It's like friendly and it's nice seeing so many people like playing the game that we don't see over here and Alaska. [...] Definitely, like the participation of other players because over here, I mean, it being such a small community. That's like I don't know. I feel like maybe the games like really competitive here. It's like maybe it's not as encouraging as the Seattle players like over here like they try to be better than you kind of thing. It kind of makes you feel defeated kind of thing. But over there It's like, you don't have to worry about who's in the raid like there's more than enough people. The joy when we get something good and then we just needed people definitely like a different atmosphere because over here that's always the same thing.

Interviewees also praised gameplay locations for a variety of general characteristics related to gameplay. Most notably, these were convenience, proximity, coolness, uniqueness, vibrancy, and iconic features. Participants often mentioned convenience and proximity in relation to the distance from the gameplay location to the interviewee's home and the stops and gyms themselves. Marnie brought this up when asked what makes their gameplay location special:

It all comes down to convenience. Okay, it looks nice enough, but it's just there's easily like, no matter where I go, there are at least three or four PokéStops, I can spin from one spot.

Similarly, Lillie noted proximity as one of the primary reasons they play at Seattle Center:

So, I guess then the number one reason is I live a block away from it. That's primary.

In some cases, the uniqueness of the play location determined location choice despite other advantages like spawn density. Drake illustrated this when explaining why they choose playing at Seattle Center over playing at a mall:

The uniqueness of it because rather than like a mall because malls are good places to play sometimes it's really dense, especially like an indoor mall. It's pretty handy but this is just a mall, right? Playing at Seattle Center you're within

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the icons of Seattle and because it's kind of an epicenter you run into other people playing.

Erika also praised Seattle Center for its uniqueness:

The architectural style is very interesting for me, because it was the site of the World's Fair you have, like the older buildings like the Armory and the Space Needle that feel very retro at the same time you have those new buildings like Climate Pledge Arena. That makes the space feel very unique in a way.

Interviewees also looked for uniqueness and coolness in the PokéStop based on physical points of interest in the play location. Many explained a general appreciation of the stop as well as sending it as a unique or cool gift. Erika illustrates this while talking about their favorite stops at Seattle Center:

I like the Space Needle stop. That one's always great and pretty iconic and then there's like a couple of stops down in the south part of the Pacific Science Center that it's like a dinosaur. That's always super cool to get and send as a gift. The Climate Pledge stops are cool too. Some of those are good like there's an Alaska Airlines atrium one and I just love the alliteration there so I always try and get that one too.

Interviewees also valued the amenities provided by their gameplay location. This included amenities related to weather, human needs, and aesthetic enjoyment. The two amenities related to weather were awnings and shading. Erika described the benefit of awnings at Seattle Center:

You can also play when the weather's not good like if it's raining there are awnings outside you can play under.

Lillie described the shading provided by the landscaping at Seattle Center:

I like the landscaping but it's not necessarily anything that specifically stands out. I just do like how it's like a nice shaded walk area, which is not something that's easy to find in the city.

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The human needs-related amenities included food, drinking water, and restrooms. Lillie compared their experience with these amenities at Seattle Center versus other locations like Green Lake:

It's got bathrooms, it's got food, it's got a lot of stuff that if you spend a couple of hours in a place, it's got other amenities. Whereas, for example, in a place like Green Lake, there's like two bathrooms around the entire lake and they really there are park bathrooms and if you're going during a busy summer day they're not the best facilities. Yeah, I prefer a place where I can pause and stop playing for like 20 minutes and eat something or watch a fountain versus like a downtown.

Lillie went on to explain how these amenities help them focus on their gameplay:

I feel like I can just focus on the game and the game can just be that and I'm not necessarily having to think about managing other needs like oh do I have to use bathrooms, do I need to refill my water, like all the things that would necessarily sour the experience of making it a little bit more of a chore to try to get through. Some of the longer events are diminished by what you have available with what you have there.

Some interviewees mentioned the availability of food and a place to sit down and eat at the play location. Many who preferred playing at Seattle Center talked about the Armory. For example, Lillie talked about the benefits of the Armory being like a food court:

I think one of the things I like being able to hang out there is the food court. It's like a bunch of like small restaurant stalls not exactly a food court. Some of them are like actually restaurants but yeah, just the big interior of the Armory is a very nice kind of decompression space if you're hanging out with people and then you can also eat. It's perfect.

Interviewees also mentioned seating availability in indoor seating areas and outdoor benches as a human need for gameplay. Lillie talked about how the variety of seating offered at Seattle Center helped their gameplay needs:

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If I need to stop and sit down, if I want to take my bag off my shoulder and open it up, get my water bottle out. Take a seat if I'm going to have a snack and just like find a spot where a bunch of people can sit together. There are tons of different spaces that can cater to all those different needs. If you want to go somewhere quieter versus being able to sit amongst all the people around the fountain you have options, especially with the remodel of the arena.

When asked what they would look for in an alternative gameplay location many interviewees cited the presence of human need amenities. Lance exemplified this:

Amenities that are good for people. I don't know if anything specifically tailored for *Pokémon GO*. Maybe more amenities that would help people that play *Pokémon GO* that would also be useful for people generally speaking, like, I don't know, water fountains or bathrooms.

In summary, the locative dimensions of play were the characteristics the interviewees valued in their play locations. Many of these were gameplay-related, including PokéStop density, spawn density, and player presence. Interviewees frequently cited these elements as helpful in attaining their gameplay goals. Some more general location characteristics include proximity, convenience, coolness, uniqueness, and vibrancy. Interviewees often acknowledged these elements, especially proximity, and convenience, when choosing their gameplay location. Lastly, interviewees identified amenities related to weather, human needs, and aesthetics as important components of place by interviewees. Weather and human needs amenities helped players focus on their gameplay and were key considerations for alternative gameplay locations.

### Technical Dimensions of Play

The technical dimensions of play were the ways in which interviewees described experiences directly related to gameplay. This included gameplay features, motivations/goals, in-game events, in-game items, gameplay accessories, and more.

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Interviewees expressed a wide range of gameplay-specific goals and motivations for playing *Pokémon GO*, including collecting, leveling up, special research<sup>16</sup>, and completing challenges. For example, Lance explained why collecting brings them back to the game:

“I like collecting, I don't know, it's like I'm a completionist. I'm like a perfectionist kind of so always like completing and min-maxing. I've always liked that and like, you know, MMOs RPG is sort of just like building the best character I can and in terms of Pokémon that's like collecting and collecting the best Pokémon I can. So that's probably one of the big factors that's like the fun factor of the game that brings me back.”

Interviewees also had different types of collecting goals. Some, like Lance, looked to collect the best possible Pokémon while others had more completionism goals like collecting one of every Pokémon to complete the Pokédex<sup>17</sup>. Erika explained why they enjoy having this kind of goal:

I definitely have one goal to hopefully get a shiny<sup>18</sup> living dex<sup>19</sup> but I know I'll never get that goal. It's like but I like that I have an unobtainable goal. It makes me feel like I'll never complete *Pokémon GO* in a way and of course I also want to like complete I also want to complete the regular Pokédex and even that's really difficult with having to travel to certain areas. That is something I want to do.

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<sup>16</sup> Story-based questlines that offer unique rewards.

<sup>17</sup> An in-game resource that has information on all the species of Pokémon.

<sup>18</sup> A type of Pokémon with a different coloration than what is usual for its species that are extremely rare to find.

<sup>19</sup> To have every single Pokémon within the Pokédex.

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Interviewees also stated they had goals or motivations unrelated to the gameplay, like exercise or socializing. Leon mentioned how it motivates them to stay active while working from home:

One is a good excuse for me to get outside. Sometimes, like I work from home, I work remotely, and I don't necessarily get out of the house that much. It's a good excuse for me to get outside.

For some, their gameplay motivation and goals have changed throughout the course of the game. Wally talked about how the pandemic made an impact on their gameplay:

Originally, it was sort of I've always been a Pokémon fan and everyone else was doing it. So it was a mixture of both those things. Like everyone's doing it like you know, I'm a social guy. I want to interact with people I want to do the things my friends are doing and also just as someone that likes Pokémon, right and then once the initial wave died out, I think it was mostly just because I liked Pokémon and then once they added shinies, I really like shinies and so it was to get shinies and then because I took that huge break during the pandemic, and obviously didn't leave my apartment much for other reasons. Come post-pandemic, it became more of a fitness thing. Like I really wanted to get back into shape and I knew that that would like motivate me to do it and so now I would say it's probably a mixture of trying to be in shape and also like, trying to just sort of like collect shinies and chill.”

Interviewees frequently mentioned gameplay elements including PokéStops, gyms, raids, spawns, trading, and walking. Many also brought up the Scatterbug mechanic which requires players to pin gifts sent from certain regions of the world that are tied to a butterfly Pokémon called Vivillon each with a unique pattern on its wings. Once players pin enough gifts from that region, they are rewarded with a Scatterbug that can evolve into a Vivillon with that unique pattern. Erika talked about why they enjoy this mechanic:

I really like the Scatterbug mechanic that maybe is a little bit overwhelming sometimes because you're like now like you're just like it's basically in your favor

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to pin everything pin and unpin but I think that it's still a cool way that encourages people to have friends from other places around the globe.

Another gameplay element interviewees mentioned was the Niantic Wayfarer program which allows players to nominate real-world places of interest into PokéStops. Blaine, who is familiar with the program, listed some of the stops they've nominated at Seattle Center:

I work for the Kraken and our home arena is there I've actually if you've ever done a community day there and you've done a lap around the arena at least seven of those PokéStops are from me from Wayfarer. Yeah, cause it's a nice little ring the whole way there it didn't used to be that way. Yeah, so I've put in you know all those little LED signs that's all me. Yeah, and that little area on the west side by the street with those little light up benches that's the Alaska Airlines atrium. That's me. The Climate Pledge Arena one on the east side by the fountains that's me. Yeah, I love Wayfarer I'm probably responsible for 25 to 30 stops in the game.

Blaine further detailed how to get a stop nominated:

It's gotta be something that's unique. You know, unique or at least noteworthy and the better description, you know, the better concise description you can give us, the more likely it is, you know, obviously, you need a good picture too but, you know, so like, if you submit, you know, like a, like a street sign or something like that, you know, for roads, probably not gonna get through because those are dime a dozen but if that street sign, you know, has, you know, some artwork associated with it, like, I don't know what to say, you know, a statue of someone on top of it or something like that, that would probably get in because that's, you know, as long as it's permanent.

Drake, who is less experienced with the program, also expressed interest in nominating stops in their local area:

My kids are scheming to submit a PokéStop. They want to build a landmark near our house. I don't know, they told me level 38 and above can submit PokéStops suggestions. That's what they told me. I don't know. [...] So I've noticed, like, the neighborhood libraries, those little like little free libraries. Yeah, those are very common PokéStops so we might build one in the neighborhood and submit that as a PokéStop. That's, that's our scheme.

Calem talked about how a Discord server of Wayfarers works together to nominate stops for the betterment of the community:

So they are they sort of work together to game the system in a way that benefits the local community. So a lot of the Green Lake stops are like plaques that are on trees that they put there and then, you know, nominated into a stop right and it's like, you know, they're basically just doing something for the community. You know, I'm sure it benefits them as well but it benefits everybody.

In-game items mentioned by interviewees included eggs, pokéballs, raid passes<sup>20</sup>, incense<sup>21</sup>, lures<sup>22</sup>, stardust<sup>23</sup>, gifts, and postcards<sup>24</sup>. Amongst these items, participants most frequently mentioned gifts and postcards. Gifts are items the players receive from spinning a PokéStop, containing a postcard featuring a picture of the PokéStop and its geolocation. These can be sent to friends and opened to receive in-game items such as berries, pokéballs and potions. Many interviewees expressed a desire to find and send unique gifts. Drake describes how their feelings about the gift system have changed over time:

So, there were the first of the gift mechanic came out it it felt like there was no, it was like a gift is a gift is a gift. But then after a while, there can be like better gifts and less better gifts and so you kind of like a construct of like, yeah, like a Starbucks gift is like the lowest gift. It's bleh but like, especially you know before the Scatterbug thing you could send your friends like, hey, I'm in Hong Kong, here's a Hong Kong gift. How cool is that? Right? And so there was a little prestige in that and sending PokéStops that are unique. [...] Because the gifts are connected to PokéStops. Right? So yeah, it's like, one time my kids went to Disneyland you know, and they sent me 'Dad did you get the Millennium Falcon

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<sup>20</sup> An in-game item used by players to participate in raids.

<sup>21</sup> An in-game item that attracts Pokémon to the player for one hour while walking.

<sup>22</sup> An in-game item that players use on a PokéStop to attract more Pokémon to spawn near it for thirty minutes.

<sup>23</sup> An in-game resource used to level up, evolve, and trade Pokémon.

<sup>24</sup> An in-game item received from gifts featuring a title, picture, geotag from the PokéStop it was obtained from that the receiving player can pin and save.

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gift?' So there's a very special gifts. So they went to that place and they sent me it, they were really excited.

Other interviewees also sought not just interesting gifts but gifts that have a special consideration of connection to the person receiving the gift. Miriam talked about how they will go out of their way to send a particular gift to their kids:

There's one with Ken Griffey Jr. down by the baseball stadium and so I mean, I will really go out of my way to like, stop at the stoplight go around the block or something down there and I'll even say that I will, honestly embarrassed to admit save extra time when I'm going someplace. So I can go around in circles, and spin stops especially the Ken Griffey Jr. one I like to send that one to my kids. [...] I save the Ken Griffey Jr. ones because I know they were really into Ken Griffey Jr. with the cards and stuff. So I really try to identify those.

Miriam went on to say how they use the gift system as if they were sending a real postcard:

There's another one, when I go up to Bellingham, I saved those to send to them too so they know I was up there. So I really try to use them. Like I would like a real postcard.

Miriam also talked about how it can impact the feeling of place:

Here's something about place. So my husband is buried at Queen Anne Hill. There's a PokéStop there now. It's called the Tree of Souls. It's a beautiful tree and when he was when he died six years ago, it's not a PokéStop I was up there because it was his birthday last week and I spun that PokéStop and saved the postcard to send to my son from the graveyard where his dad is buried. It's a weird aspect of place.

In-game events were also a technical topic of interest. Interviewees often referenced events such as community day, raid hour, spotlight hour, global events like the Pokémon GO Tour: Hoenn, and ticketed events like the 2022 Pokémon GO Fest: Seattle. Many interviewees mentioned they play at a particular location for events. Marnie explained why they go to Cupcake Royale for community days:

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Community days I actually typically go to Cupcake Royale in West Seattle and it's because you could hit two gyms from within Cupcake Royale. Plus, they have a lot of outlets that you can plug into and they don't mind you sitting at their tables for hours. So I'll sometimes get a cupcake but I'll often get a tea and I'll park myself at one of the benches and plug in and, you know, play through community day.

Erika talked about consistently using Seattle Center for a variety of events:

Yeah, so since I've been in Seattle I have played there pretty much every single community day or big events like the Johto Tour I did last year the Hoenn Tour I did this year GO Fest. Unfortunately didn't play like the in-person GO Fest at Seattle Center but I did play the global one there and sometimes I'll go there for spotlight hour if I really want to grind that spotlight hour or if there's a raid hour I really want to do I go there.

Some specifically mentioned using a space to achieve certain goals during events.

Cheren talks about why they go to Seattle Center for larger-scale events:

For much more bigger events I definitely prefer Seattle Center where you need to be in a crowded area with lots of people who can help with raids, or trading or whatever it is.

Some interviewees stated they are willing to travel if it means using Seattle Center for events. After playing the global GO Fest, Dawn and Lucas from Alaska stated their intention to return for future events:

After like the finale for like, the first time we ever visited. We're like, Yeah, this is where we're gonna play like if there's like a global event. This is like, like the flight going here it's literally like the first stop like, it's not even that far. It's like three hours away from us. It's like, we love Seattle. It's like, that's when we're like, yeah, if we have time, like we'll definitely do global events here. [...] We'll be there for the next event.

An event many of the interviewees attended was the 2022 Pokémon GO Fest: Seattle.

This was a ticketed in-person *Pokémon GO* event in Seattle from July 22-24, 2022. Niantic split this event between two experiences, the park experience, where players had to

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play in Seattle Center, and the city experience, where they could play anywhere in Seattle but were encouraged to play downtown. Lillie describes how the two experiences impacted their gameplay location choice:

At the beginning of the day we played at Seattle Center, and then the rest of the day would not work for you in Seattle Center like it was geo-locked, so you had to leave it. So that was kind of the only time where I was like, okay, I'm gonna go walk around the city or walk around Seattle, we actually did end up going to Green Lake because I don't like walking around the city if I can help it because people don't respect pedestrians. We're just like meat and bones and they think that their big metal boxes are more important, and I just don't feel safe for the pedestrian in the city a lot.

Lillie went on to describe the experience at Seattle Center:

I feel like it's a little hyperbolic language but it was kind of magical. I was very nervous going because I've heard of other events that they've had in place like Chicago and just like what happened in Vegas like a week or two ago, where there's always problems. Yeah, connectivity, the system. There was nothing like that. It was just like, it was all like just like nostalgia for like little kids stuff and just, they really transformed the entire campus to really cater to playing the game like the fountain was turned into like a little jungle and every single area was playing different music to match the theme of the space. It was adorable and then they had, they just they went all out and I was very surprised, like I was excited to play but as soon as I walked and I saw every entrance where a pedestrian entrance had a bunch of the flags for the teams and as soon as I saw that, I just like, it was a very special feeling of like, oh my god, this is so exciting. But I haven't had very much as an adult. Like probably one of the few other times I felt that was maybe for the second part of the Avengers Endgame movie. There are not very many things that inspire that like child-like, oh my god, it's so a cool feeling. At least not for me. I thought it was very fun. They did a good job getting my money in that case. Because it was like \$25 I think?

Cheren talked about more gameplay-specific elements that made the GO Fest more memorable:

Participating in battles or trading events that's those are usually fun, like getting shinies. So, like some raids that I did, where I got some rare shiny or incense spawns, incense, like Unown shiny, shiny Unowns, things like that. So the GO

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Fest was basically a bit more memorable, as much better shiny chance. So that event was specifically more memorable.

Leon also mentioned how the GO Fest had a much different raiding experience:

The in-person raids were very different like, unlike in the real world that you could literally walk up to a gym that had a raid going and like, just join the lobby and then there would be like 10 other people. At any time yeah that part was really appealing just because like, you know, I do a lot of raids usually remote raids and it's usually coordinated because you know other people in the Discord or whatever. Yeah, but in this case, I was just like walk up to a gym and you know if your shiny hunting for like Darkrai for example, you could just walk up and get one probably. So yeah, that part was really good.

Leon also mentioned how they felt like they were part of a community during the event:

The GO Fest in person was actually really good. I mentioned before, like I was wearing that Garchomp shirt and I just got so many compliments on it. It kind of felt like I was in the community. You don't really get that very often.

A few interviewees mentioned that their first experience playing at Seattle Center was during this GO Fest or a previous global GO Fest. Some decided to return to Seattle Center for other large-scale events like global GO Fest and GO Tours. Nessa even mentioned they would return for all events:

Yeah I didn't go there before the GO Fest but now I go there to play most in-game events like community day or the spotlight hour.

To recap, the technical dimensions of play were interviewees' experiences specifically related to gameplay elements such as their motivations/goals, gameplay features, in-game items, and in-game events. Interviewees expressed a wide range of gameplay motivations and goals related to gameplay, like collecting and leveling up, and non-gameplay goals such as exercise and socializing. Among in-game items, the two primarily discussed were gifts and postcards, which are PokéStop-based items that

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players send to their friends. Interviewees sought unique gifts or postcards with a special connection to the recipient. The Scatterbug mechanic and Wayfarer program were two prominent gameplay features mentioned by interviewees. The Scatterbug mechanic promoted global friendship, and the Wayfarer program encouraged players to nominate stops in their local community. Lastly, interviewees discussed the in-game events and their impact on their play experience. Community days often encouraged social play and gameplay at a particular location. Global events and ticked events like GO Fest Seattle offered a unique experience in terms of aesthetics, community, and gameplay and convinced players to return to Seattle Center.

## Urban Planning Phenomena

Several phenomena relevant to urban planning arose through the interviews. These phenomena include sense of place, sense of community, education, history, tourism, social justice, health, and business. While some are directly related to place attachment, others are not. However, these are still important findings for the secondary research question.

## Sense of Place

Many interviewees described how *Pokémon GO* has impacted their relationship with place through in-game elements that sparked exploration, discovery, awareness, learning, and ultimately, familiarity. These in-game elements included the in-game map, its augmented reality overlay, gifts, and postcards. Interviewees noted how the in-game

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map focuses attention on real-world places of interest through PokéStops. Lance described this experience using the in-game map:

The way I see it, it's basically, you're just focused on a map more often than you would normally be and that has points of interest that have sometimes has cool information or, you know, pictures of what that place might have looked like in the summer. Yeah, just, you know, it's like you're looking at a map, and you're really studying that map, and you're learning about the environment through that map, and finding new places to go to.

Others talked about how the map has changed their perception of place entirely. Miriam detailed how it's changed their own sense of geography through place names:

So, you know, so here's like I said, there's an overlay with this metaverse and the real, physical world, that there's this vocabulary that you can communicate like, say to my son, you know, meet me at this PokéStop. I mean, I can say like I could say like meet me at Freenas but I'd say to meet me at this named PokéStop. There's a park there's a gym that we go to a lot and the park has a name, but the PokéStop is a checkerboard. Okay, we're going to raid our checkerboard. We don't call it the name of the park. You know the PokéStop becomes geography. It's like a map, a new map.

Some even used the map for navigation when other applications like Google Maps were unavailable. Cheren described their experience using *Pokémon GO* to navigate while hiking:

Yeah, like, I usually try to follow the PokéStops, because sometimes, even Google Maps doesn't tell you exactly the small route that you have to take, like when you're hiking or something or if you're visiting a rainforest or something like that, but PokéStops usually, if you're assuming you have signal, you can just follow the PokéStops since they're usually in a trail or something and the stops are usually helpful, like they tell you about like, I remember in a rainforest that I visited there, they had information signs, like, some specific mosses or something or some historical facts about it.

The most common thread amongst the interviewees regarding place was that the game led to a greater awareness of place. For many, this meant discovering places of interest

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they did not know existed. Miriam illustrated their experience with this phenomenon in North Carolina and Seattle:

You know, I'm, like, in West Seattle, I was noticing the mural on the back of the pizza place, that I wouldn't have known otherwise. There was a leader in the Senate here, you know, whatever it is, you're driving by and then, and there's a PokéStop, what is it? Oh, it's a library or whatever it is and so it's really changing my sense of where I am. [...] There's one in North Carolina, it's a street marker for a jazz musician, what's his name? I can't remember, but it's a jazz musician who lived in that town. I never would have known that. [...] But it's like I said, it's changed It's enhanced my sense of place a lot because I know things about places that I wouldn't. I wouldn't know that that tree in the graveyard was called the Tree of Souls. I don't even who calls it that. Maybe the graveyard people but my husband is buried right there and I actually picked the grave because it was near that tree, I wouldn't have known that it if it wasn't for *Pokémon GO*.

Lillie also mentioned discovering things they would never have noticed if they were not

PokéStops:

I have found like, for example, walking even just a couple blocks away from Seattle Center seeing PokéStops for art pieces inside churches and other buildings like stained glass. Somehow, like stained glass doors on a lot of old apartment buildings are now PokéStops, I would have never noticed that that was on the building until it became a PokéStop.

Interviewees also noted that through the gift system, they have created a more global sense of place. By exchanging gifts, interviewees felt a greater connection to the world.

Miriam expressed this feeling when receiving postcards from international friends:

So I got 200 friends that I was getting postcards from you know, from the Philippines and Guam and elsewhere and it's really fun to have that connection to the world and to have players around the world and just to even like you know, I think my sense of places has become you know by having so many friends around the world and sending postcards has really enhanced my sense of place.

Other interviewees mentioned a similar sentiment when talking about the Scatterbug mechanic, which encourages players to send and receive gifts from all over the world.

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Erika acknowledged the benefits of this system and how it has impacted their global sense of place:

I think that it's still a cool way that encourages people to have friends from other places around the globe and send gifts and like get to know the feeling of that place like through the gifts like through historical like points of interest in that area, like what is of interest to them and to you and I think it's a cool exchange of place basically. Even if they send like the same gift over and over again, you almost start to feel like oh yeah, I kind of know where this person lives in a way because I know they're like there must be a playground by where they live or something and you kind of you get the knowledge you get to see like you kind of are starting to understand like their place a little bit through the gift system and that's cool, a really cool feature and mechanic and I always love finding interesting postcards, sending interesting postcards. So I think that's also a cool element of place with the game that doesn't really get mentioned very much.

In summary, interviewees described ways in which *Pokémon GO* has impacted their sense of place. This occurred through in-game elements such as the map and augmented reality overlay, which created a sense of awareness regarding points of interest in their area. Interviewees described discovering things they would never have noticed without the game through their augmented reality-guided explorations. Interviewees also noted a greater global connection through the gift system, particularly the Scatterbug mechanic, which encourages players to make global friends. This has led to greater awareness and familiarity of international locations the interviewee has only experienced through the postcards.

## Education & History

Similarly to how the game has impacted the interviewees' sense of place, many also discussed how they have learned through *Pokémon GO*. This has mainly occurred

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through the interaction between the interviewees and the PokéStops themselves.

Miriam describes this process:

There's so much that's enhanced by the information from the PokéStops it's educational. So I tell people that way and they're like, 'Wait, you know, you're playing a game?' I say 'No, you don't understand I'm Learning about the world.' 'No, you're not. You're playing a game.' 'No, I really am.'

Miriam went on to tell a story about how PokéStops are like an encyclopedia of information:

My sister in fact, this is a funny story. We're here in New York City, New York and my sister was like, 'Why is somebody so presumptuous? Why did someone have a Latin name at this PokéStop?' She was like, 'What's going on this is so dumb' and I was like 'Nancy that's the name of the Latin name of the tree it was a maple tree' whatever the kind of maple tree it was, but she didn't know that and so she was like, 'Why is this? Why is this thing have a latin name? You know in the middle of this park?' and so, you know, I mean, I happen to know, that's the Latin name for maple tree for some reason and so, you know, I'm just saying it's like an encyclopedia of information.

Miriam shared another story about how *Pokémon GO* became an educational tool for her granddaughter:

When my granddaughter was 11, like, she's picking up stuff all the time. It's subliminal, she didn't even know all the information, she's storing stuff. We were at this Indian village in North Carolina and there was a PokéStop in the middle of this thing. So we had a hike in to go to this reconstructed village and then we left some Pokemon on there. So we had to go back again the next day. So every time we went there, we would read the signs and learn more about and it just happened that she was out of school because she was sick. So not sick enough to not go for a walk. But yeah, sick to go not cough on people at school. So we were truly walking there and, you know, we were walking into these grass pods and talking about how they were constructed and my son mentioned that this is way more interesting and way more educational than whatever she would have learned in school today. We wouldn't have gone there if it wasn't for the PokéStop.

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Interviewees commonly cited PokéStops which are plaques or information signs as ways they have through the game. Many discovered the plaque or sign because it was a stop and learned by further reading real-world information. Lucas talked about how they learned about the history of the Armory this way:

Well, I know, and like the Armory there's like a lot of like, plaques that have like details of like 'Oh Why is this here?' You know like the artwork and stuff like I will say that because like going there the first time I didn't know like the history at all.

Others mentioned how sometimes the PokéStop could serve as the source of information rather than the physical object. Lance described how the PokéStop served as a placard for the Salmon fish net pens out in the Puget Sound:

Also learning about stuff that goes on that you wouldn't normally pay attention to or recognize or acknowledge was there like the Salmon fish net pens. Of course, I've seen them and figured it was some kind of fishing maybe crabs or whatever but that PokéStop is basically like a placard for that thing. Without it being a physical placard you can go and read about it if that PokéStop has a description. Most don't but there are some that do which is kind of interesting. I have definitely read or, or even recognized, like, points of interest, or just like random artistic fixtures around the environment that I normally wouldn't have even paid attention to. But looking at the PokéStops, it's like, actually sit there and appreciate it for what it is and recognize it and look at it more whenever I'm out.

Some mentioned not just learning historical or environmental information but also artistic information. Steven detailed how they learned more about local artists through the PokéStops:

As a result of playing *Pokémon GO* I learned a lot more about the street art that I don't normally pick up on my own that exists in Ballard that I overlook if I'm not actively thinking about it, so seeing those PokéStops you know the you know the picture and the circle the photo circle that's it that's the art and it emphasizes it. I look up and never really considered it before. [...] The photo circles are something that I appreciate that I appreciate about them are they usually give

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like artists credit which is really cool and I love to continue finding all these different art centered focused and learning more about the local artists.

In some cases, these PokéStops based on historical, environmental, or artistic points of interest sparked curiosity within the interviewees and encouraged them to learn more independently. Erika shared a story about how discovering a hidden pagoda at Seattle Center inspired them to look up more information online:

I would say something I found that I didn't know about like something that I found out through the game like I mentioned before was the pagoda from Kobe like a friendship like a symbol of their friendship which was like so tucked away and so hidden I didn't really recognize it. It wasn't until I saw it in the game I was like what Kobe? And then I went over there and then I found it [...] Then I went online further and like was like oh looking into like Kobe and Kobe and Seattle's sister city-ship and learned about their history.

Interviewees cited the Wayfarer program, which allows players to submit PokéStops for approval, as a reason to conduct historical research. Blaine explained how more research can lead to a nomination with a higher chance of approval:

I will say that creating PokéStops definitely forces you to dig into the history of things or you know, because the more info in the more relevant info you can post in the submission the better your chances like remember I told you about that one with those light-up benches you know, it forces you to look at the plaque.

Blaine then gave an example of the process from a stop they nominated in South Lake Union:

There have been somewhere I've actually dug in on the internet and look to see what the history of it was. There's one over by over in South Lake Union where I think it took me three or four times before I finally got it in because it's this. There's this old laundry building, like literally, their, their business was laundry in the 1920s right? It's a big factory-type type place and now it's an Amazon building, but they saved the old sign from it. It was called Troy laundry building, right? Or laundry. Have you seen that? Okay, that was one of mine and, and that sign, you know, is a relic. It's a holdover from that but you know, when I first

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submitted it, I just took a picture of it. It's called Troy got rejected. So then I dug in, and you know, I had looked at, you know, oh, this was an old laundry building. So then, you know, it took two or three more tries to get it through, because of the location was hard to pinpoint, because it's inside that corridor. Yeah. But eventually, I got it and if you go and look at it, there is a, you know, I put some history of the of what that sign was in the thing. You know, it's not just some dumb sign that someone put up like this actually has history behind it. So in that sense, yes, yes, I definitely learned something.

The entire play location itself inspired others. Jessie talked about how Seattle Center got them more interested in the site's history:

I did a historical deep dive on the World's Fair because of it too and that led me to all the information on the monorail and the crossovers with Disney and stuff.

Even though some interviewees felt they had already learned about the history of their play location, especially Seattle Center, a few were still interested in learning more.

Erika talked about still having an interest in learning more about the World's Fair:

I think whenever we talked about Seattle Center in school, I really enjoyed hearing about it and its history and I think like that sort of thing, like especially old sites of World's Fairs continuing to use them in some way and I would be very interested in learning more about that I'd say like more specifics about the World's Fair and that sort of thing.

In short, interviewees recounted a number of ways they've learned historical, scientific, and artistic information through *Pokémon GO*. This included information at the physical location like a plaque or information sign and information provided by the game. In some cases, interviewees had their curiosity sparked and went online to find further information. This included information on individual PokéStops as well as the entire play location. Some who said they had already learned information about their gameplay location still expressed an interest in learning more.

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Many interviewees expressed experiences and feeling related to tourism. Some were willing to travel and have traveled to play *Pokémon GO*. Those who expressed interest talked about attending in-person ticketed events like the Pokémon GO Tour: Hoenn - Las Vegas, a ticketed two-day in-person *Pokémon GO* event held on February 25 and 26, 2023 in Las Vegas, Nevada. A few interviewees were willing and tried to get tickets before they sold out. Dawn and Lucas shared their story:

Yeah, we tried to go to the Vegas, one. Like, I just got a new school schedule and I was like, Oh my gosh, we could actually make it and it just got sold out. [...] But the fact that it got sold out really wasn't a sign. So then that's when we decided okay, let's just do the global event in Seattle. A little bit closer and in a way we could still experience it.

Despite the fact that it got sold out, they still decided to travel to play the global Hoenn Tour event at Seattle Center. Blaine, who did go to the event, shared their experience:

Yeah. I mean, there were some connectivity issues. They just didn't expect the amount of extra people that we're going to show up and so, you know, they set up kind of, I don't know, sent a bitchy tweet that night saying 'if you don't have you don't have a pass don't come to the parks' like really? No, that's on you Niantic. Anyway, but once it got going because our day was Saturday once it got going It was okay. You know, I had a couple of people that had to tether off me for the first two hours, but then they kind of boosted their signal and it got better. So, you know, I was able to accomplish all the little tasks all the little Spindas and you know, all the things.

Lance expressed regret for not going but a willingness and motivation to go to future events:

Well it gives me more of a reason to go to places like for example this Vegas thing I didn't do that but I really wish I did now, I was in Vegas two weeks ago which is the reason I didn't go again that close apart but if the next event if it's in another country I think I'm going to try to go to it not for the sole purpose of just *Pokémon GO* but it's like an excuse to have like a bigger vacation and explore the world.

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Wally, who, after going to Pokémon GO Fest: Seattle, understood why it would be worth the money to travel for *Pokémon GO*:

Like, I always thought that people who like traveled to GO Fest and like, took a vacation to do it were like, kind of crazy and like a little bit, you know, like, why would you, why is this possibly worth your money? To play Pokémon oh come on and then after doing that, I was like, I get it now. Like, it was so fun. It's like it's very difficult to describe how different it felt from like, the other in-person events I've done there but it just felt totally different.

If not for in-person *Pokémon GO* events, interviewees expressed interest in traveling to play *Pokémon GO* in locations that would be good for playing the game. For example, Dawn and Lucas expressed interest in playing at Disney Land and Tokyo Disney:

I think one of the places like we want to try the most is Disneyland. [...] We actually went to Disneyland twice in one year, we went in the summer 2021 and then we went back May 2022, like within a year, and I didn't even pick up *Pokémon GO* until I think what June and I'm like, well, we totally missed out but if we do end up going to Japan in May I know we're definitely planning to go to Tokyo Disney because I'm a big fan of Disney too.

Jessie, who has played at Disneyland before, recounted their experience by saying, "I played at Disneyland that was a lot of fun. There's a lot of stops." Other elements of the game are noted by interviewees that play a part in travel like the postcards. Marnie expressed their opinion on how the gift system could encourage global curiosity and travel:

So, I mean, like, there are a lot of people playing these games that will never leave their countries and so they keep on talking about community. Well, how do you learn about community? Well, you learn about it by, you know, the postcards, like, what do you think, you know, what is point of interest in that culture enough that it's a PokéStop. So you see something interesting? Yeah, you know, maybe someone like myself isn't following up on it, but maybe someone else is doing a little bit more research and investigation or thinking okay, well, maybe one day when I go on vacation, I'll visit this place because this looks kind of interesting. You know, something that they weren't aware of? Yeah, that's

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always a possibility or, or, you know, just people who might never leave their country period. Well, they now know a little bit more because they might go like, Oh, you know, what's this out that represents or something like that?

Leon also talked about how postcards are a way to track the travel of friends:

I do think it's fun to occasionally see if someone's like traveling. So I did pay some attention to them. Like a couple of friends of mine went on an around the world honeymoon not too long ago. So like whenever I exchanged gifts with her she sent me some from Thailand one day and then like, the next day she sent me something from Korea. Okay, this is actually pretty cool.

Miriam expressed a similar feeling as well as being a reason for her to travel to different locations so her family members can track her:

I got a postcard from my son from Georgia. Oh, he doesn't live in Georgia, you know, what's he doing there? Or even two people in Seattle and suddenly they were in South Africa. So, you know, it's interesting, like tracking where my sister is you know, because I suppose she was walking here. I knew the walk she went on because we've done that walk before and she spun that PokéStop. So the postcards are really great for tracking, tracking information. So for that reason, I really like to venture into different locations.

In addition to the individual traveling aspect of tourism, interviewees often advocated their play location of choice to both players as a play destination and to tourists as a travel destination. In some cases, this was a recommendation for local players and, for others, a recommendation for traveling players. Blaine commented that they recommend their preferred play location as the best place to play in Seattle:

So if you're coming to Seattle? That's the place to play. Yep. People have even asked me 'hey, I'm coming to Seattle. Where should I go?' Seattle Center!

In some instances, interviewees have convinced local players to play at their preferred locations over others. Lillie talked about how they convinced their friends to play at Seattle Center:

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I've gotten a lot of other people who don't come here often or come to the center often to like it over some of the other places where they play like friends who live near Green Lake will come here instead.

Lillie went on to describe how they show off Seattle Center to other players:

I'll try to walk them down places they've never walked through like that little courtyard with the little fountain that's it's publicly accessible but no one ever walks by it because it looks like it's part of a private building. Yeah, but they walk through and they're like, there's a bunch of like chairs and tables, and you just go in there and sit and do whatever you want. It's great. So Yeah, I do have fun for people who haven't walked around there as much. I want to I don't want to say off the beaten path, because it's clearly a path. But yeah, going and showing the not-as-blattant things that people might overlook.

Lillie also talked about showing off historical aspects of Seattle Center to friends who are visiting it for the first time:

I do like a lot of the little hidden things in the Seattle Center from all the different events. So it's got a lot of history to show, which is kind of fun. If I'm walking around with a friend whose never been there before I can talk about that as well, like, the sister city Bell, all the stuff from the World Fair and a lot of the stuff like the Armory is from World War Two. That's why it's called on Armory because it was from World War Two. So kind of going and showing all that Seattle history is pretty cool.

Lucas and Dawn, who are from Alaska, even recommended visiting Seattle Center to their friends who play *Pokémon GO* in the state:

We have like my coworker that's like you know, they play *Pokémon GO* they really want to visit Seattle and I'm like, you need to go there. It's so nice so much tourist stuff you could do there like there's food like that's literally like the one thing I always tell them to do. Like you're gonna spend like a good chunk of your day there and you're not gonna get bored.

They also recommended Seattle to their friends who do not play *Pokémon GO*:

My friends that don't really play *Pokémon GO* because they're always like, 'Oh, I want to travel.' You should really check out Seattle it's like, such like, even though I say like, it's like that one like layover like we always stop at. I've actually never visited Seattle until 2017 and I, like you know, throughout the

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years of traveling, we always stopped by, but it's like there was just never known as one of those places. But a lot of times now with like our friends who are probably you know, traveling or like our younger friends who like want to travel on their own kind of thing. It's like, oh, we always recommend Seattle. I feel like it's definitely a spot that gets missed and in a way, it kind of reminds me of Alaska, like, I don't know, just breathing the air in Seattle is a lot cleaner than we get.

In summary, interviewees expressed a variety of interests and experiences with tourism related to *Pokémon GO*. Some interviewees were willing to travel for both in-game events and to play *Pokémon GO* at exciting locations like Disney. A few had experiences traveling to these events and places, and others expressed an intent to do so in the future. A few interviewees used the gift system as an inspiration for travel and a way to track their friend's travel and vice versa. Interviewees also advocated for their favorite play location to local players as a play location and to non-players as a tourist destination. They spoke quite highly of their preferred location and sometimes even convinced their friends to switch to their location.

### Sense of Community

Interviewees expressed feelings of belonging and membership to a group through *Pokémon GO*. Interviewees pointed out that they often experience these feelings during events like community day. Leon explained why it is the reason they enjoy the in-game events:

I'm kind of a part of some like community because like I said, I tend to, like community days and events. So there's like, definitely, like a sense of community and like, belonging, I guess that I would say that I feel something like that.

For some, the feeling of community is a reason why they play the game entirely. For example, Jessie noted, "I enjoy the community aspect of it. That's a huge driver for

me.” Other interviewees did not explicitly say they felt a feeling of community but expressed enjoying being among the presence of other players. Erika noted this feeling persists at Seattle Center even if they do not interact with other players:

Seeing other players playing there. It's like, oh, I'm not alone. Like there's other people playing and even if I don't talk to them, I still feel like I'm part of something happening part of a group in a way.

For some, player presence and the sense of belonging that comes from it is why they choose to play at a particular location over others. For example, Drake explained why this is one of the reasons they like playing at Seattle Center:

Well, I like Seattle Center because you run into a lot of players. [...] You find the other players stick out and like there's it feels like more special. [...] It's easy to do raids. It can be easy to find someone you know, it makes it easy to that's really nice.

Drake went on to explain how playing at Seattle Center amongst other players can better negate the negative stigma from non-players:

Yeah, that's the opposite, right? Because there's so many people playing. So that's the freest of the stigma there because there's tons of us here. Like you can't have miss us. Right? Like, so there's not that question of 'people play that game?' Now that you've answered it because there's tons of us here. Yeah and like, 'is that for kids' no that question is already answered because look, there's no kids here actually. There's very few kids. But so those questions are already answered by being in that place, right? Yes, that's one of the reasons, like, a reason like I like going there versus, you know a mall where you know people aren't typically playing.

For some, the feeling of community does not exist in their local area, so they seek it out at their preferred play location. Lucas and Dawn mentioned this is one of the drawbacks of playing in Alaska and why they come to Seattle Center for larger-scale events:

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There's not a lot of people here in Alaska that we like straight up meet up with, like, if we're lucky, maybe one of our mutual friends will play with us. But like, he usually communicates with Facebook but there's not like anyone like a whole group in particular. Like, that's why it's always nice when there's like bigger events and we go to Seattle, because when we go to like Seattle Center, like there's more than enough people playing in it. It's so nice and then we meet like, nice people like you.

Others found the feeling of belonging and membership through Pokémon community groups. As previously mentioned, these groups are often formed through social media such as Discord, Reddit, Twitch, and Facebook. Discord was the most popular among the interviewees and was often used to coordinate playing together for events such as raid hours and community days. Many interviewees were members of the Mega PokéGO Seattle Discord server and other local neighborhood-level servers. Lance talked about how using the local discord servers has allowed them to become more sociable:

I've met with a bunch of people around like the Seattle, like through the Discords and Reddit to like, coordinate trades with and stuff and see what their goals are and see how they play the game and what they're interested in trading and it's just, you know, a cool way to meet new people also, but also to, I guess, be sociable in the game.

Some have even become part of communities outside of Seattle. Blaine talked about how he joined an Australian Twitch streamer's Discord community through GO Fest Seattle:

GO Fest was awesome. Being able to meet some of the some of you know the streamers and you know the some of the notable traders one of whom I still am you know, I joined their discord community and still, you know, raid with them they do you know, they'll do a stream in Australia. So it's a weird time but especially it's a lot easier in our wintertime because they're you know, when they do their raid hour, was it 6 pm? It's 11pm here, which is doable, once we flip, and we spring ahead and they fall back then and then it's at 1 am. But you know, it's a good little community.

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In summary, interviewees experienced feelings of belonging and membership through *Pokémon GO*. This was commonly felt on event days; interviewees would seek locations that provided this feeling by having a significant player presence. Some even noted that player presence combated the negative stigma from non-players. Interviewees also found membership with communities of players through social media like Discord, Reddit, Twitch, and Facebook. Discord was the most popular among interviewees, allowing them to feel more sociable and connect with players from across the globe.

## Business

While playing *Pokémon GO*, interviewees mentioned visiting businesses and making purchases. These businesses included malls, shops, restaurants, cafes, and convenience stores. A common trend among interviewees who played at Seattle Center was eating or getting coffee at the Armory. Cheren pointed out why the Armory is an excellent place to play and eat:

I think the Armory because it has like three PokéStops in its range. So if you sit at like the coffee shop or something, you can access three of the PokéStops and the gym.

Blaine mentioned that his group often eats at the Subway in the Armory and even shared inside jokes about it:

We have inside jokes that have come from all this stuff you know. Whenever we're going to get Subway. It's like yep, we're going to get Cakebread because the country of Ireland when Subway did business there because their bread had too much sugar. So we call it Cakebread. Now we're gonna get Cakebread!

Others would visit restaurants while playing *Pokémon GO* because of the amount of PokéStops. Drake recapped why they visit the U village for food and *Pokémon GO*:

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The U Village just has so many restaurants and PokéStops there. Sometimes we just want to go there to hang out and have Molly moons or a burger or something and play.

Some interviewees would consistently play at a small business because of the amenities they offer. Marnie talks about they like to go to Cupcake Royale on community days:

On community days I actually typically go to there's a Cupcake Royale in West Seattle and it's because you could hit two gyms from within Cupcake Royale. Plus, they have a lot of outlets that you can plug into and they don't mind you sitting at their tables for hours. So I'll sometimes get a cupcake but I'll often get a tea and I'll park myself at one of these benches and plug in and, you know, play through community day.

Others also mentioned they would be willing to make purchases at businesses while playing. Lillie discusses what they would do if business got involved with the game:

If they got businesses included, so businesses can maybe do like a special if you're playing the game or something like that and yeah, I think that would be something it'd be pretty cool and I think I would definitely jump on that and probably end up caving and buying something at Nordstrom Rack that I wasn't intending on buying just because I'm in the area. I definitely think that they would have some chumps like me who would be like, Oh, I'm playing oh, look at that, oh, that's a fun little blanket or look at those shoes.

Consequently, interviewees mentioned that they visited businesses while playing *Pokémon GO* and made purchases. Restaurants, like those in the Armory at Seattle Center, were common stops among interviewees because of the number of PokéStops in range. Some were even loyal to small businesses as their play location for the amenities they offered. If they didn't make purchases, some said they would be willing to if businesses collaborated with *Pokémon GO*.

## Social Justice

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Interviewees expressed social justice issues within *Pokémon GO* and their gameplay location. These issues included diversity, representation, and inclusion. Some interviewees valued diversity in their play location. Cynthia talked about how diversity at Olympic Sculpture Park made it feel special compared to their local area:

I feel like um for me Olympic Sculpture Park is very Seattle. Like when I'm in northeast Seattle and not like what would make Seattle it's like the water and all the boats. I'm not around that kind of stuff in my day-to-day life and I like that it's there I like northeast Seattle's not very diverse and so I like being around more diversity seeing the art there just feels more just feel special. Doesn't feel like my neighborhood. It feels special.

Erika described a similar appreciation for diversity at Bayfront Park in Miami:

A similar feeling just seeing lots of tourists but just way more international, of course, like compared to Seattle Center you're seeing you're like you're encountering tourists from like, Europe, South America, Caribbean, even Asia, like it's a very, it's a very diverse location for sure which is really nice.

Erika also talked about an appreciation of inclusion and representation at Seattle Center during the Johto Tour in February 2022:

There was also on that day was the start of like, it was very much near the start of the war between Russia and Ukraine and there were Ukrainian protesters at Seattle Center, and just everyone there was like everyone, like so many people there were carrying Ukrainian flags around and they lit up the center blue and yellow at night. That made me very glad that Seattle Center is a place where people can do that sort of thing and made me happy to live in Seattle.

Some interviewees said they would like more representation in the game. Marnie explained they would appreciate the ability to explore culture through the game:

You know Pokémon itself is not that diverse because when you think about it is start off as a, you know by a Japanese company. Yet, there are no Asian-looking avatars and that really bothers me [...] Yeah, and it would be nice to just explore a little bit more, like I said, doesn't like, I think people would appreciate the ability to just like, explore different cultures through outfits even like, you know,

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make making it very clear that they aren't, you know, oh, gosh, what's the term? appropriating? Yeah, cultures, but just like for celebrating and exploring it, like when they're doing those, like, global things, when like, why don't they kind of like, have, like, a nice diverse selection of different outfits that people can acquire. You know, just like that might be a little bit more region-specific or not just going to these mass holidays that are, you know, celebrated globally. But truly kind of like, I think that's something they can do not just with, you know, Seattle, specifically, but just like the different regions, because, I mean, it's not just the US, right, I'm sure that, you know, like Greece or Italy or the Mediterranean, they're not just one culture, right, slowly rotate through their different cultures, like everybody have their day in their sun, but you know, maybe you make it a global thing. So every year, they focus on a different culture or, you know, just a handful in a region and rotate them around.

Some did find representation in unintended ways. For example, Jessie stated why they like shiny Sylveon for what it represents: "My second one is my shiny Sylveon because it represents trans colors." To recap, interviewees appreciated diversity and inclusion in their gameplay location because it either made the place feel special or different or instilled pride in the interviewee. However, some stated that they would like to see a greater emphasis on cultural diversity and representation within the game itself and the opportunity for players to explore culture.

## Health

Interviewees noted the health-related impacts as a result of playing *Pokémon GO*. Many mentioned how it has motivated them to walk, which is a core element of the game. For example, Steven mentioned that if it were not for *Pokémon GO* they would not have much reason to go outside:

That is another encouraging reason to go out and take a leisurely walk. Otherwise, there's no like particular motivator for me to go outside.

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Cynthia and Drake talked about how the game has motivated them to walk more in different areas and has led to friendly competition between them:

We do walk a lot. We will go into different neighborhoods to walk around that we wouldn't otherwise. I might walk more because she shamed me for only walking 20 km this week. In a good way in a loving way.

Additionally, interviewees brought up COVID-19 and the impacts it has had on their lives as well as the game. In some cases, *Pokémon GO* has positively impacted these changes. For example, Leon mentioned how it became a motivator to exercise while working from home:

One is a good excuse for me to get outside. Sometimes, like I work from home, I work remotely, I don't necessarily get out of the house that much. It's a good excuse for me to get outside.

Wally similarly mentioned that their motivation to play the game post-pandemic was for fitness:

Come post-pandemic, it became more of a fitness thing. Like I really wanted to get back into shape and I knew that would like motivate me to do it add so now I would say it's probably a mixture of trying to be in shape and also like, trying to just sort of like collect shinies and chill.

For some, the game became a way to interact during the pandemic socially. Lillie talked about how they would play community days remotely with their friends:

Since the pandemic, the big thing for me has been social interaction, whether it is remote, or going out to play, even when we were all really kind of shut down and locked down. When they had community days, I would have like Zoom meetings with friends and we all be sitting on our own couches playing but talking to each other and having fun with it like that.

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The exercise from *Pokémon GO* also helped interviewees on their personal health journeys. Miriam talked about how the game was good for her physical therapy after having back surgery:

My son gave me this pokéball auto catcher because I couldn't use my canes and have my hands free to catch. It was like three months that I wasn't able to have my hands free. So and then even when I go to community day, you know, I poke along and then I'd stop, and then I'd spin. The auto-catchers made a big difference for that but without that it was better for my physical therapy because I was but you know, it's better actually now, because then I can actually use it and I'm motivated to walk. It's been a really good help for physical therapy.

Interviewees recounted the health impacts of playing *Pokémon GO*. For many, *Pokémon GO* was a motivator to walk more and explore areas they might not have otherwise explored. Many also brought up COVID-19, its impact on their lives, and how the game helped them through this time, either as a motivator for exercise or social interaction. Lastly, the game helped interviewees on their health journey, whether through simple exercise or physical therapy after surgery.

### Place Attachment

Interviewees expressed opinions and feelings regarding their preferred gameplay location that aligns with the three elements of place attachment examined in this research study, including affective attachment, place identity, and place dependence.

### Affective Attachment

Interviewees expressed a variety of positive and negative emotions and feelings when talking about their preferred gameplay location. The positive emotions ranged from intense feelings of attachment to various feelings of peace, fun, and the future.

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The strongest emotions expressed included love, passion, pride, and attachment. In the case of attachment, interviewees directly stated that they felt an attachment to place.

Miriam described how the augmented reality overlay has led to a deeper connection to place:

This conversation about how to turn, turn the world into a PokéStop, you know, how to populate the world, you know, the real world with a better world because it really has, you know, what it really has done for me as it's laid an overlay a complete overlay on the world that I travel in, whether I'm walking or in the car, or at the airport, there's a complete dual reality. For me, you know, wherever I go, and it changes my attachment to place, wherever I am. Because I, there's, I'm deeper in the place I'm in.

Jessie described a similar emotional attachment to Seattle Center because of the augmented reality overlay, among other things:

I do have an emotional attachment to it both for you know, GO Fest as well as it was an awesome event. Huge event as well. Because of my partner, as well but there's always something going on at Seattle Center and so there's always like an overlay on top of the AR or what's going on in reality, I guess. There's always something new. I like to like people watch too. So it's like a convergence of all of my favorite things all at once.

Lillie also mentioned how they have an attachment to Seattle Center because of the many things it offers:

Yeah, it really it definitely is the place here attached to them for sure. Yeah and because like there's a lot of other places, but they're mostly tied to very specific activities like Westlake center, that is a shopping area, and Pike Place Market, nice shopping and like tourism area. But Seattle Center is much more kind of not diverse, like what's the word? Multifunctional? Yeah I feel like it's very much like a place that's just nice to go and walk around. If I can't decide if I feel like I need to get out of the house and move and nothing else is motivating me like I can't convince myself to do errands. I can just tell myself just walk around Seattle Center ones. Just do it. Yeah. achievement.

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Other interviewees still used strong language to indicate their intense emotional feelings if they did not explicitly express an attachment. For example, Erika mentioned their strong connection to Seattle Center:

Yeah, it's definitely a place I feel I have a strong connection to I think especially, I discovered it very early when I moved to Seattle. Like within that first month, and I think I was I was really searching for a place that I could feel like that would become my space.

Other interviewees used words like love or language that indicated a passion for their preferred play location. For example, Miriam uses the word love to describe their feelings about Green Lake:

Yeah, I love I love I love that. I will cruise. So I used to go there four times a week to roam and play. So I really love that lake.

Cynthia used the same word to describe her feelings about Olympic Sculpture Park:

That's what makes Olympic Sculpture Park so wonderful for me because you do get the like that tree made out of metal and so you get the art and the handmade arts but there's the water and there's the beautiful trees and in the summertime and the gardens out the rose garden now like going through there and then like you can see the ferries come and go I love I love all that yeah.

Other interviewees described how they feel playing at their preferred play location with peaceful verbiage. This included feelings of comfort, calmness, refreshing, relaxing, belonging, safety, and other warm feelings. For example, Jessie used some of these words when describing their feelings about Seattle Center: "It's very happy warm and vibrant and that makes me feel comfortable." Others noted feelings of safety that made them feel comfortable at their preferred play location. Lillie talked about how Seattle Center makes them feel safe as a pedestrian:

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That's primary, but I feel like I would still consider it one of my favorite places to play. Partly because of I feel like it's a very comfortable place to play. There's very little need to worry about cars and having to like cross streets constantly.

Cheren also talked about feeling safe as a pedestrian as well as other comfort impacts while playing at Seattle Center:

Yeah, definitely pretty, pretty relaxed. Like it since it's a park kind of thing. Like, I don't worry about any traffic or anything. Cars or whatever going on. Yes, there are a lot of people but that's imaginable. So pretty relaxed, pretty comfortable, chilled out, laying there. I don't need to think about other things. That's a good amount of break from work. [...] It's a safe, open area to play peacefully. It's a good one.

Some went as far as to describe their preferred gameplay location as like home. Dawn, who lives in Alaska, talked about how Seattle Center is like a home away from home:

It just makes it feel more cozy in a way. [...] I feel like it's starting to, like, feel as comfortable like, as like a homey feeling like, like a home feeling like, you always feel welcome and like, you know, you feel safe. You know, there's food.

Lillie also mentioned how Seattle Center almost feels like home in a welcoming way:

I feel like it's tied to so many moments in my life, that I just feel. Not at home, but I feel like, like, welcome. Like, it's like, this is the place. I'm used to it. I'm familiar with it and I feel like it's always a place that's open to me, if I want to do anything.

Most commonly, interviewees described feelings related to having fun while playing at their preferred gameplay location, including anticipation, excitement, happiness, and enjoyment. Dawn talked about the feeling of happiness while playing at Seattle Center:

Just pure happiness. Even if I wasn't playing, I just like it's like, I don't know, for me, it's like having a break from my own reality. Like I get to visit this nice place. I know how it's going to be but it's not like I'll ever get tired of it and then even though it's like, like, not my first experience going to the Space Needle going to museums, like you just see the other people who's enjoying it's not just you on vacation. It's also them on vacation. So just yeah, that atmosphere. It's it's very refreshing.

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Many also brought up feelings of anticipation to play at their preferred gameplay location and have fun. Erika mentioned how they look forward to playing at Seattle Center:

I feel like I feel connected to that space it gives me a very happy feeling to go there to play to go there and play there. Something I always look forward to.

Miriam also illustrated some of the reasons for their anticipation about going to Green Lake:

Always happy to go there and look forward to it and seeing what's spawning and getting postcards, and then the environment the ducks and all that.

Lucas and Dawn talked about how they always look forward to coming back to play at Seattle Center, and they feel like it will never get old:

Oh, I feel like it's nice going back. Like, like, I feel excited going back. [...] Like it's starting to feel like I know the place and it gets exciting. Like I don't like I don't see myself getting tired of it.

When asked how they would feel if changes they perceived to be negative occurred to their gameplay location or if they could no longer play there, interviewees responded with various negative emotions. These ranged from strong emotions like anger and grief to moderate emotions like frustration, sadness, and upset to light emotions like disappointment. When asked if they could no longer play at Seattle Center, Jessie and Wally gave similar responses. Jessie answered, "I would be pretty pissed off" and Wally replied, "I'd be pissed. I'd be so mad." Some mentioned that their strong negative emotions were, in part to having to find a place that is like their preferred gameplay location. Lillie talked about how it would require more effort to find a place and that it would make events less enjoyable:

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Really, really upset, I would really not like that I would probably still play but I would, it would feel much more like I need to exert a lot more effort because I'd have to, like go find a place that has all the things I like like South Lake Union is a great place to walk around, but not for three to four hours the way a lot of the events are. So I would probably still like playing the game while commuting and walking around as a distraction. But events would be much less enjoyable I think.

Erika mentioned similarly strong emotions when thinking about having to play at another location besides Seattle Center:

I would feel pretty devastated. Honestly, I feel pretty gutted about it. I don't even want like thinking about. Honestly, I feel like I would be very, very upset, very distraught about that because I don't think I would find a place where I would feel as happy playing in Seattle than Seattle Center. So honestly, if that happened, I would still play the game. But I would probably I might take a little like I would probably need some time to grieve. or need some time to grieve and then come back to the game and then and play somewhere else but yeah.

Others talked about how they would feel upset having to find a new location because they use their location for events. Leon discussed the potential of having to find a new place for events like community day:

It'd be kind of a buzzkill. I'd feel pretty bad about that. That's basically my main place to go for community days and for events. So if that were like locked out, I'd probably have to, like completely rearrange or like figure out some other place to go to yeah.

Cheren also talked about Seattle Center's usefulness for big events by saying, "I'd feel pretty sad. Yeah, it's, it's definitely really useful for big events." While not necessarily a gameplay location, some talked about how they would feel if something changed about a particular PokéStop. Miriam explained how her life would change if Niantic removed the stop on their street:

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But if they took away the one on my street, it would really change my life to not have a PokéStop in my house anymore. They made the distance different or anything like that, where I had to actually leave my house to spin a PokéStop.

Some mentioned how they would be upset but would get over it. For example, Blaine said, "I'd be really upset, but It wouldn't kill the game for me. We'd just adapt." Dawn also talked about how they would be sad if they could not play events at Seattle Center, but it does not mean they would stop coming to Seattle:

I would be really sad I love Seattle and stuff but it doesn't mean I'm going to stop visiting. I'd be really sad it's obviously not going to be a place for us to do like bigger events and stuff but yeah, it's not like staying or stop visiting because like sometimes when we just need a break from Anchorage or just like you know just have like a day trip it's always Seattle that we love to go to.

For some, these negative feelings were only of disappointment or frustration. For example, when asked if they could no longer play at Seattle Center, Drake said, "It would be disappointing yes but I wouldn't be upset." Caleb has a similar feeling when asked about no longer being able to play at Green Lake saying, "That would be frustrating right." However, they went on to describe their newfound connection to place in more detail:

Because it is so convenient, I would be frustrated, but having it removed, you know, which is I think good to note that I don't think that I've really felt that way about a park before. Like, this is sort of the first time that I've used a public park in a way that like if it disappeared off the face of the earth tomorrow, like I would be fazed. Normally, I don't think I wouldn't really I wouldn't really be you know, I don't tend to form connections to place very often and so, but you know, I would feel frustrated and I would feel sad for my friend who really enjoys it there.

In summary, interviewees experienced a variety of positive and negative emotions and feelings about their preferred gameplay location. The intensity of emotion varied for the interviewees. Some felt strong positive emotions such as love, pride, passion, and

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attachment. Others talked about how they feel various peaceful emotions while playing at their preferred location like comfort, safety, welcoming, belonging, relaxation, refreshment, and other warm feelings. However, the most common feelings related to having fun were happiness, enjoyment, excitement, and anticipation. Interviewees also expressed a variety of negative emotions when asked how they would feel if they could no longer play at their preferred location or if a change they perceived as negative happened. Some responded with strong emotions such as anger and grief while others felt upset and sad. Interviewees pointed out that some of these emotions came with difficulty finding a location like their favorite for events. Some also only mentioned disappointment or frustration and that they would get over it or adapt.

### Place Identity

Interviewees expressed feelings, memories, and opinions regarding their preferred play location that align with aspects of place identity. Some interviewees self-identified with their play location when asked if they felt it was a part of them. Some self-identified with the location because they had a previous history with the location prior to playing *Pokémon GO*. Lillie noted that while they felt like the place was a part of them because they have had a history with it, *Pokémon GO* has increased their use of space:

Yeah, very much. So I always say like, even though I feel like so I've had a lot of history with the space, but I feel like as an adult, I haven't had as much reason to go there until I started playing the game and it had a lot of stuff I did there as a kid and in high school, college, it was primarily going to the cultural events and after college, I still went but not necessarily as frequently and now that I play the game, I go there a lot more frequently than I did in that kind of interim

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period and I still do the other stuff that I do, but it's kind of increased my attendance of the space.

Lillie went on to explain how *Pokémon GO* has impacted their use of Seattle Center and helped them take back ownership of the space:

The game has led to me using the space for just more casual like non like non-event-driven use of the space, just going to go on walks and if I'm going to like, for example, if I'm going to go on an errand, anywhere downtown, I would often would maybe go and try to catch a bus over it on Lower Queen Anne, or maybe on Fifth Avenue but since the game, I often will just like walk through Seattle Center and I will just try to walk wherever I go, because it's so much more fun to walk and play or I'll just walk through Seattle Center and catch a bus on the other side because it's not that much of a time difference in terms of waiting for a bus for 10 minutes of the time, it would get to that stop that I'd walked to within about similar time kind of thing. So the slight, slight different in how I get around. Because yeah, when I stopped working at the Space Needle, I kind of was like, I don't want to walk anywhere near it because I did not have the best, It's a great it was a fun place to interact with tourists and people who wanted to like come see cool stuff, but the company itself say about that. So I actually would avoid the space but then starting to play the game again and I was like, okay, I could walk by it and not feel like disgruntled. Yeah, it let me take a little bit more owner ownership back of that space be like, yeah, I can be around here. What you got?

Similar to Lillie, Wally also explained they had many memories at Seattle Center that predated *Pokémon GO* so it's difficult to tell how much of their feelings are from *Pokémon GO*.

Really nostalgic for sure. It's difficult for me to disentangle how much of that is childhood and how much of that is Pokemon. I grew up here and so like, I have memories that Seattle Center predating *Pokémon GO* by a lot. Like one of them was its Pokémon. related, is back when they used to do the like, distributions, not through the internet because they couldn't yet, but you had to like go to a place to do distributions. They had like the Pokémon, like towards America or whatever things and that was one of the stops was Seattle Center. Oh, gosh, 20 years ago, at this point, now, a little bit less than 20 probably 16 17 18 years ago, it was the Deoxys event where you could go and get a Deoxys to your game and like, go hang out with other people playing Pokemon. And I did that as like a young kid. And I still remember that was like one of the happiest events

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I've ever done and I also just, you know, I was there a lot for other reasons as a kid too.

Blaine also noted feeling like Seattle Center was a part of them also for reasons outside of *Pokémon GO*:

Sure, as much as place can be I would say more I'm a part of it. You know, I mean you know, because I go there and use it for all those things. [...] Well that place to me it's so much more than *Pokémon GO* because you know, it's where the Kraken play and that's where I've been going since I was a kid, because of the science center but you know, just a fun place to congregate.

Others felt they only partially self-identified with their gameplay location. For example, Cheren said, "Um, yeah, sure. Yeah kind of." Lance shared why they self-identify only to some extent:

I mean, I've never really thought of that, per se. There's certain areas, certain locations that I would personally identify with, like first my hometown. A lot of places in Ohio where I grew up like my college town. Yeah, I'd say that I personally identify with those places. Seattle yeah, actually, I would say of all the places in Seattle the Elliott Bay trail is probably the most that I have like a close connection with. So I would say yeah, I personally identify to some extent with that park.

Some also expressed pride when discussing what their gameplay location symbolizes.

Drake mentions feeling proud of Seattle Center for what it represents:

Emotionally I feel it's a familiar place familiar and like oh and what is the word, proud. Like oh, here's the space needle the icon of Seattle. So there's some pride there maybe yeah, being in the kind of heart of Seattle.

Cynthia shared a similar feeling of pride when talking about what Olympic Sculpture

Park represents:

Let's say there's a lot of joy, because you're like, look where we live. Holy shit this is our home. Yeah. People dream about living on the water like this. This is right down the street from us. I mean, it's not right down the street, but you know.

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Blaine, who is an active Wayfarer, expressed pride in the area where they have added stops at Seattle Center:

Well, the arena is known in my group as the area that I created so so yeah. Others expressed how they identify with their gameplay location through personal meaning. Jessie mentioned how Seattle Center helps them move forward:

Well, definitely progress in the game, but like, forward motion, because it's always kind of had that built into its nature. But I also feel it as well. Thus, it symbolizes it as well to me. [...] It's like a dichotomy of all those things at once and that makes me feel like hopeful for the future which helps me move forward in the game and move forward in life.

For others, their gameplay location held meaning to their life in Seattle. Erika talked about how Seattle Center represents Seattle for them, and it would be the play they miss the most:

It's definitely a part of me and part of my Seattle chapter of life I would say for sure. [...] I think it symbolizes like I guess like thinking about it. Like, since it was someplace that moving to Seattle, I didn't know very many places and it was a place I found very early on that I felt a connection to so I would say to me, it means like, it represents Seattle for me, like the city like I feel, even when I like thought about what I would miss most about Seattle if I were to move somewhere else, I think in terms of like a physical location, it would be Seattle Center 100%.

Others expressed place identity through memories. Miriam shared a story about the first place she raided and how it had meaning to her and her family:

There was one here on Queen Anne Hill and it was at a library. Those little street libraries and that was the very first place that I ever raided because I hadn't done raids before just by myself. You know, as a solo player they're hard to do but my son came to visit when I had my surgery last summer and so they dragged me up there, but in the car, and he had walked up there and so that was the very first place where we raided and then so, you know, I always knew that library up there was a gym. So we did a lot of raids up there and then it

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disappeared. It's not a gym. It's not a PokéStop and we were all very sad about this. We're sad because it was a place we used a lot and we're sad because it was like, the first place I've had a raid memory of and I remember it was pouring rain and we finished and we got the gym, ready to raid and he's starting to walk home in the pouring rain and I said things like no, I'm just gonna be hitting my screen and I felt really like no, this is significant, meaningful. Yeah, don't just walk off. So I really have a lot of strong feelings about that PokéStop and then I don't know why it's not there anymore. I mean, I drive by that spot, and I mourn the loss of that. I really do. [...] For some reason the gym was gone. I'm very, very sad.

Some interviewees noted that they did not personally identify with their preferred gameplay because they did not feel nostalgic for the place yet. Leon explains how they have not gotten to that point yet:

Might be a little strong. [...] Yeah, exactly. Like, I think once I kind of get to the point where I like have a sense of nostalgia for it, maybe.

Lance shared a similar sentiment while explaining their feelings of nostalgia for other gameplay locations:

But also, it's nostalgic to like, in building, like, my feeling for a location that I spent a lot of time too on this game, like certain areas will become nostalgic relating to playing this game in those areas. So like, I played a lot in Connecticut when I was living over there in 2017 and there's like, whole walk paths that I only did playing these games and if I ever go back there, it's gonna remind me of playing this game and like the fun that I had doing it there with my brothers and stuff, so yeah, I definitely think it's also nostalgic. [...] Um, I don't know if I would call Elliot Bay Trail nostalgic yet because I'm still living here. It's like yeah, it's just like still my like environment that I live in. It's my home I guess. So nothing is nostalgic yet. Although Bellevue I used to live over there that probably getting starting to become nostalgic. Although I didn't play the game over there. So I guess that doesn't really apply but if I did, I imagined it would be.

In summary, some interviewees expressed aspects of place identity through their feelings, memories, and opinions about their preferred gameplay location. When asked directly if they self-identify with their location or feel like it is a part of them, some said yes. However, some had already had previous experience with that location before

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*Pokémon GO*, making it difficult for them to determine if it was because of the game. Others expressed moderate or partial self-identification. Some expressed their feelings by explaining the place's personal meaning. For some, it symbolized Seattle or their Seattle journey; for others, it held more personal meanings. Some also expressed pride in their play location because of what it represents in Seattle or because of the way they personally added to it. One interviewee expressed their personal meaning by sharing a memory. Lastly, some felt they did not personally identify with their location yet because they felt they had not reached feelings of nostalgia.

### Place Dependence

When interviewees talked about why they chose a particular location to play, it often related to the needs and goals of gameplay. This included a variety of gameplay and location aspects, including technical, locative, built, natural, and social dimensions of play. Many prioritized gameplay location characteristics related to gameplay and human needs. Among the gameplay location characteristics, the most sought-after were PokéStop and gym density. Marnie detailed why having PokéStop density is a benefit to their gameplay:

Um, I actually like, for me again, it just, it all comes down to convenience. Okay, looks nice enough, but it's just there's, there's easily like, no matter where I go, there's at least three or four PokéStops, I can spin from one spot.

For many, this was a major factor in determining their gameplay location. Drake illustrated why it makes Seattle Center a more attractive option than playing at a mall:

Well, frankly, it's the density of PokéStops. So you need to place that's been judged by Niantic to be interesting because a mall can have a lot of PokéStops,

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and that's not terribly interesting, frankly, but the density of PokéStops physically in game wise is what draws you there.

Others mentioned this as a positive for specific areas within their preferred gameplay location. Many who prefer to play at Seattle Center mentioned that the Armory provided convenient PokéStop density. For example, Cheren said, "I think the Armory ones Armory has like three in its range. So if you sit at like the coffee shop or something, you can access three of the PokéStops and the gym or something." Many mentioned PokéStop density when asked what they would look for in alternative gameplay locations. For example, Steven said, "If I had to play somewhere else I would still want the PokéStop density. I really feel for the rural players who don't benefit from that at all." Related to PokéStop density, interviewees also mentioned spawn density. Calem highlighted this connection while explaining why they went to Green Lake to target a specific Pokémon species:

I went there because I wanted to catch a lot of Slowpoke which, just because there are a lot of spawns there and so it was better than just sort of walking around a random spot because I think spawns are tied. Like there are more spawn points near PokéStops and so areas that are dense with PokéStops tend to be dense with spawns, right? There's like a just a standard mesh that like covers the globe that is you know, randomly placed spawns but I think it seems like there are more spawns near PokéStops.

When asked what they look for in a gameplay location, Wally answered, "Frequency of people and frequency of spawns that's what I really care about." Others also brought up people or player presence as something they look for in a gameplay location. For some, this helped them achieve their social goals of playing *Pokémon GO*. Wally, who plays *Pokémon GO* to interact with people, explains why they prefer to play at Seattle Center versus Redmond Town Center (RTC):

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It's dense. I think, like, I like to play the game with people and the fact that there are more people there means that I have more people to interact with. Whereas, you know, something like RTC because it's not people aren't coming there as much specifically to play *Pokémon GO* like, you'll notice a couple of people playing but it's not. It's not quite the same. Or like there's someone playing every time you turn around, right?

Others sought player presence because of the positive social atmosphere it creates. For example, Lucas said, "It's like friendly and it's nice seeing so many people like playing the game that we're playing that we don't see over here and Alaska." Dawn further explained the social difference between playing in Alaska and playing at Seattle Center:

Definitely, like the participation of other players because over here, I mean, it being such a small community. That's like I don't know. I feel like maybe the games like really competitive here. It's like maybe it's not as encouraging as the Seattle players like over here like they try to be better than you kind of thing. It kind of makes you feel defeated kind of thing. But over there. It's like, you don't have to worry about who's in the raid like there's more than enough people. The joy when we get something good and then we just needed people definitely like different atmosphere because over here that's always the same thing.

Erika mentioned how the player presence at Seattle Center creates a positive atmosphere and makes it feel like there is a community player there:

I just enjoy a lot of tourists being there too a lot of people from all over the world visiting Seattle. So it's a very positive feeling overall positive atmosphere, and usually a lot of people are playing there too. So I see a lot of other players and feel that like, feel like there's a community playing in Seattle Center every time there's an event.

Some even mentioned how playing in a place with a heavy player presence can eliminate the negative stigma from non-players. Drake explained why this is another reason they prefer to play at Seattle Center than at a mall:

Yeah, that's the opposite, right? Because there's so many people playing. So that's the freest of the stigma there because there's tons of us here. Like you can't have miss us. Right? Like, so there's not that question of 'people play that

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game?', now that you've answered it, because there's tons of us here. Yeah and like, 'is that for kids' no that question is already answered because look, there's no kids here actually. There's very few kids but so those questions already answered by being in that place, right? Yes, that's one of the reasons, like, a reason like I like going there versus, you know a mall. Where you know people aren't typically playing.

Similar to the negative stigma, players chose locations because it helped them feel like they were part of something or the feeling of community. Erika talked about how playing at Seattle Center makes them feel less alone:

Also seeing other players playing there. It's like, oh, I'm not alone. Like there's other people playing and even if I don't talk to them, I still feel like I'm part of I'm part of something happening part of a group in a way.

In addition to social reasons, other interviewees also noted how the density of players could be helpful to cooperative gameplay activities like raids. Cheren mentioned when talking about why they prefer Seattle Center for events:

For much more bigger events I definitely prefer Seattle Center where they need to be in a crowded area with lots of people who can help with raids, or trading or whatever it is.

Events and event-specific needs were common among interviewees when choosing their preferred gameplay location. Cheren illustrated these needs and explained how Seattle Center fits them:

For PokéStops or gyms depending on what kind of event it is. If I need to focus on getting more research or something, then they should be going to want to PokéStops nearby. Similarly, good density of Pokémon spawns also. So they're a good amount of spawn points and things like that. If there's an event focusing on gyms, for whatever reason, like raids, then there should be a good amount of gyms there, too. So Seattle Center usually checks all these boxes.

Leon explained the difference between playing a community day at Seattle Center versus their local parks:

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It helps that a lot of other people play *Pokémon GO* tend to go there for events. You know, like, like I said, I live in the central district. If I were to go out for Community Day, and like, go to my local parks, there probably wouldn't be very many people maybe if I go to Seattle Center, there's a lot of people like you know, if I wear a shirt or something like I can spot them. I don't really have that in my local parks.

Interviewees often committed to playing events at their preferred gameplay location.

For example, Erika said, "I will go there for any, like almost every event, if there's an event that like, like, whether it's community day, or research day, or just like, even for certain spotlight hours or raid hours, I'll go to Seattle Center to play." After playing the GO Fest finale at Seattle Center, Dawn and Lucas explained how they would come here for subsequent global events:

After like the finale for like, the first time we ever visited. We're like, yeah, this is where we're gonna play. Like if there's like a global event. This is like, like the flight going here. It's literally like the first stop. Like, it's, it's not even that far. It's like three hours away from us. It's like, we love Seattle. It's like, that's when we're like, yeah, if we have time, like we'll definitely do global events here.

In addition to gameplay-specific needs and goals, interviewees also sought locations that provided for their human or technological needs that helped with their gameplay. Many sought locations with human-need amenities like bathrooms, seating, food, and drinking water. Lillie compared their experience with these amenities at Seattle Center versus other locations like Green Lake:

It's got bathrooms, it's got food, it's got a lot of stuff that if you spend a couple of hours in a place, it's got other amenities. Whereas, for example, in a place like Green Lake, there's like two bathrooms around the entire lake and they really there are park bathrooms and if you're going during a busy summer day they're not the best facilities. Yeah, I prefer a place where I can pause and stop playing for like 20 minutes and eat something or watch a fountain versus like a downtown.

Lillie went on to explain how these amenities help them focus on their gameplay:

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I feel like I can just focus on the game and the game can just be that and I'm not necessarily having to think about managing other needs like oh do I have to use bathrooms, do I need to refill my water, like all the things that would necessarily sour the experience of making it a little bit more of a chore to try to get through. Some of the longer events are diminished by what you have available with what you have there.

When asked what they would look for in an alternative gameplay location, Lance talked about human amenities:

But yeah, just good amenities that are good for people. I don't know if anything specific, specifically tailored for *Pokémon GO*. Maybe more amenities that would help people that play *Pokémon GO* that would also be useful for people generally speaking, like, I don't know, water fountains or bathrooms.

Those who played at Seattle Center often considered the Armory an attractive element because of its variety of human-need amenities. Lillie talked about how it serves as a nice decompression place while playing:

I think one of the things it's like really kind of lean to like being able to hang out there is the food court kind of old food court like I know what you want to call it. It's like a bunch of like small restaurant stalls not exactly a food court. Some of them are like actually restaurants. But yeah, just the big interior of the Armory is a very nice kind of decompression space if you're hanging out with people and then you can also eat. It's perfect.

In addition to amenities regarding human needs, interviewees also praised locations with amenities that combated the natural elements of weather. This included temperature, precipitation, wind, and daylight. Lillie explained how Seattle Center provides weatherproof bastions during gameplay:

Seattle Center, like it's what's uh, what's another nice thing about it is I feel like it is more equipped for year-round playing because whether it's really cold out or really sunny out, there's a lot of places where it's air-conditioned or heated, and you can just kind of take a break, like, Oh, we've been walking around for half an hour, because when I sit for a bit, we don't have to sit on a bench to the side of a, of a path with no cover and most likely, like very strong winds in the winter

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and blazing sun in the summer. So it's much more creature comfort friendly. If you're someone who doesn't want to be away from your creature comforts for too far. Yeah, as much as much people who are attached to our phones are like to be so that's another perk.

Other interviewees who also played at Seattle Center cited the Armory specifically for its weatherproof elements. Erika explained why it helps makes Seattle Center their favorite place to play:

Seattle Center is my favorite I think for everything that I mentioned, like the amenities you can play like there you can also play when the weather's not good. Like if it's raining there's awnings outside you can play in the Armory and there's food there. [...] There's areas you can sit inside of the Armory, you can sit inside and eat and also, just like if the weather's bad if it's cold or something, or just like waiting there inside like 15 minutes while playing, so definitely helps gameplay needs and like human needs for sure.

Seasonal play, or playing depending on the season, was also a consideration among interviewees. Dawn and Lucas, who live in Alaska, shared the struggles of playing during winter and why they come to Seattle Center to play:

Honestly, like it just makes it feel more cozy in a way. Especially if you compare it to like, here with like snow everywhere like playing only based off seasons playing outside kind of thing. I think it enhances the experience and also like you've just since you I mean just walking outside makes you feel good. Versus like sometimes here when we have to play because it's so cold we kind of have to just drive around which is kind of lame.

Interviewees also brought up the technological gameplay needs regarding cellular connectivity, electrical outlets, and portable batteries. Marnie explained how electrical outlets at Cupcake Royale allow them to play there all day:

Community days I actually typically go to there's a Cupcake Royale in West Seattle and it's because you could hit two gyms from within Cupcake Royale. Plus, they have a lot of outlets that you can plug into and they don't mind you sitting at their tables for hours. So I'll sometimes get a cupcake but I'll often get

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a tea and I'll park myself at one of the benches and plug in and, you know, play through community day.

Lastly, interviewees talked about how the built environment aspects of their play location helped them play *Pokémon GO*. Many mentioned specific pedestrian elements like walking paths, sidewalks, and loops. Miriam described how the walking path at Green Lake is a perfect loop for hitting up PokéStops:

Well, I can walk back and forth on a path where there's a lot of stops and so it's easy to access them, and you're by the lake and it's a nice place to walk and I don't walk around the whole lake but there's the place I like and by the time I get back, they've all turned blue again so it's perfect as my little loop.

Lance explained why they choose a certain pathway at Olympic Sculpture Park to hatch eggs and maximize daily incense spawns:

The distance it's like a long stretch of bike path and you know sidewalk so the way like *Pokémon GO* tracks distances it will like muddy the numbers if you're walking like in circles or if you're making a lot of turns it won't accurately count like the distance you walk. It's also better for like hatching eggs and doing the daily incense in a long straight line at like a pretty fast pace. If you want to maximize how many Pokémon you'll get spawning so yeah, stuff like that is the reason why I choose for like gameplay mechanic wise why I would choose that stretch of park.

Others valued their preferred play location's pedestrian friendliness and walkability for its safety benefits. Many valued not having to worry about cars or crossing streets while playing so they could focus on the game. Wally discussed this when talking about playing at Seattle Center:

I really liked that it has a long, sort of consecutive path you can walk without having to cross any streets. Obviously, like, if I'm going across the street, I have to like, sort of zone out of my phone and zone into the streets so I don't get killed and it's nice to be able to not have to worry about that because I'm not crossing any.

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Steven also talked about how playing in a safe pedestrian environment like the cobblestone streets in Ballard helps them achieve their gameplay goals:

I think it does, because it's, I'm looking down somewhere. It's fun to think about my surroundings and where I feel also more of where I feel comfortable walking. There are a lot fewer cars around on the brick roads, then, like on the asphalt so always you know do my worried about car zooming around on asphalt.

Others talked about how open space can help make walking easy while playing. Erika highlighted this aspect of Seattle Center:

I definitely like the pedestrian flow and circulation makes it easy for like there's never any really crowded areas for walking and like stopping while playing the game. [...] I think the pedestrian flow makes it really fun and easy to do like the laps and the walks and, like, even if I do my normal walk back and like, okay, I'm gonna take a loop around Climate Pledge, I'm gonna go down and go down below the south of the Pacific Science Center, and makes it really interesting to hitting up a lot of stops and hitting just a lot of areas while playing the game.

Similar to what Erika mentioned, other interviewees brought up how the variety of areas within the gameplay location can increase engagement. Blaine compared Seattle Center to the park where they played the Hoenn Tour event in Vegas:

I like the variety, I like, the fact that, you know, it's interesting. It's not just like, for example, this last weekend in Vegas was boring. Oh, was it just flat, you know, just just just kind of nothing there. I mean, they had cool little things set up like a little volcano and but at the end of the day, it was a park in the desert. Seattle Center has fun stuff. It's got the arena, it's got the Space Needle, it's got the fountain. It's got all the little areas around the Opera House.

In addition to the various areas to explore and enjoy, interviewees pointed out the benefit of having interesting PokéStops or points of interest at their play locations.

Many mentioned artwork, including sculptures, murals, statues, and stained glass.

Interviewees explained that these made for interesting gifts to send to friends. Lance talked about how they seek art-related gifts:

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As far as like gifts, like who wants to look at a plaque that commemorates some guy that donated money there or is like in remembrance of them? Like you can't even read the text. It's just like a picture of concrete or metal. So like, I won't spin those but the PokéStops that I do spin are things like the gyms right up at Olympic Sculpture Park there's like gyms for some of like the major sculptures. They're like that giant goat head, I think is what it's called. There's like a fish sculpture. There's the PokéStop for like this red. There's like a giant red abstract art sculpture that kind of looks like Charizard. It's like this giant red metal sculpture that looks like it could be Charmeleon or Charizard that's like roaring and it has like a nice view of the Space Needle in the background. That's one of my favorite gifts.

Erika also shared about the interesting PokéStops and gifts they like to send from Seattle Center:

I like the Space Needle stop. That one's always great and then there's like a couple of stops down in the south part of the Pacific Science Center that it's like a dinosaur. That's always super cool to get and send as a gift. The Climate Pledges Stops are cool too. Some of those are good like there's an Alaska Airlines atrium one and I just love that Alaska Airlines. Hmm, I love the alliteration there so always try and get that one to those Yeah, those definitely.

Marnie also valued having interesting places to send as gifts:

I like to have interesting stops to spin, like interesting postcards. That is a little bit of a factor. I mean, it's not like, at the forefront of my mind, but it definitely is like when I'm sending out gifts, I want to send interesting-looking postcards. I don't want to send boring ones. Especially to international people. I want to show them interesting things in Seattle.

In summary, interviewees expressed why their gameplay location suits their gameplay goals and needs in various ways. These included gameplay-specific needs like PokéStop and gym density, spawn density, and player presence. Player presence also helped with interviewees' social goals and created a positive atmosphere that aided players in feeling a sense of community and sometimes negating the negative stigma from non-players. Interviewees also chose their preferred location for specific events and event-related needs, including PokéStops for special research, gyms for raiding, and player

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presence for community days. Interviewees also sought locations with amenities that provided for human and technological needs. These human needs included bathrooms, seating, food, and drinking water and technological needs included cellular connectivity, outlets, and portable batteries. Interviewees noted how having these needs addressed allowed them to focus on their gameplay. Interviewees also looked for weatherproof and season-proof locations to play, no matter the temperature, precipitation, wind, or daylight. Interviewees who play at Seattle Center mentioned how the Armory was often mentioned as a weatherproof bastion. Lastly, interviewees brought up the built features of their preferred gameplay location. They sought pedestrian-friendly and walkable areas with specific pedestrian elements like loops, sidewalks, and walking paths to achieve gameplay goals like hatching eggs and spinning stops. Interviewees also valued safety and open areas with good pedestrian flow so they could focus on walking without having to stop or be distracted. Interviewees also praised locations with various areas for staying engaged with interesting points of interest like art to send as interesting gifts to friends. These varieties of play elements and dimensions represent how players depend on locations to achieve their gameplay goals and needs.


## Discussion

Using Seattle as an observation site, this study explores *Pokémon GO*, the experience of players, and the implications of augmented reality games on place attachment and urban planning. The primary research question asks how *Pokémon GO*, a form of augmented reality game, contributes to place attachment among players. The answer to this question, along with other insight gathered from the data, would inform

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the answer to the secondary research question which was to identify in what ways urban planners can utilize augmented reality games to achieve their planning goals. According to the results, players have a wide array of considerations and experiences related to gameplay and gameplay location choice defined as the social, outdoor, built, locative, and technical dimensions of play. Additionally, a number of phenomena related to urban planning arose from the data, including sense of place, sense of community, education, history, tourism, social justice, health, and business. The data suggest that participants experienced the three selected elements of place attachment, including affective attachment, place identity, and place dependence to varying degrees. The results indicate that through their *Pokémon GO* gameplay, most participants experienced place dependence, many displayed signs of affective attachment, and a few expressed place identity with their preferred play location.

The dimensions of play represent the varying elements of the participants' gameplay experience, including what they want to experience and what they actually experience. The technical dimensions of play are the gameplay features, mechanics, and characteristics that provide the framework for the participants' overall experience. Their motivations and goals guide their gameplay behavior, including location choice. While many goals are gameplay-specific, participants have other social and health-related goals, such as meeting people and staying active. The social dimensions of play, including *Pokémon GO's* sociability, are a big driver for many participants. The people, groups, and communities they play and engage with are a core element of their gameplay experience and are oftentimes influential in their gameplay location choice.




The built dimensions of play are the physical elements that populate the digital world of *Pokémon GO* and comprise the participants' gameplay setting. Since participants are simultaneously navigating an augmented environment within and based upon the physical world, there are many built environment factors that participants consider within a gameplay location. These are factors conducive to *Pokémon GO's* gameplay, including pedestrian-friendly design and infrastructure and the presence of artistic, historical, and educational points of interest. Outdoor dimensions of play such as natural features like greenery, trees, and water are also impactful elements of the physical gameplay location that can increase participant safety and enjoyment. As gameplay is largely exploration-based, participants spend most of their playtime outside and must cope with varying weather elements which impacts their ability to play the game and, in some cases, can lead to seasonal play behavior. Participants look for locations that provide amenities to tackle these elements as well as other amenities that provide for human needs like food, drinking water, seating, and restrooms. These amenities and other functional and aesthetic characteristics of the gameplay location represent the locative dimensions of play. Identifying this wide variety of elements that comprise the participant experience and the ways in which they can impact participant behavior was critical in understanding their relationship with place and laid the foundation for how gameplay locations can help participants achieve their gameplay goals.

Through the coding process, several phenomena arose relevant to answering the secondary research question regarding how urban planners can utilize augmented



reality games to achieve their planning goals. The most significant and well-corroborated phenomenon was how *Pokémon GO* impacts the participants' sense of place (Doerr, 2019; Rhodes, 2019; Woods, 2021). Participants are encouraged to explore their local environment, which leads to the discovery of previously unknown artistic, historical, and cultural points of interest which the participant may never have discovered if it were not for the game. Through this discovery, participants become more aware and familiar with their surroundings. These outcomes, which previous research studies have substantiated, align with the goals of urban planners such as fostering a vibrant public life (Doerr, 2019; Rhodes, 2019). Participants also foster a global sense of place by exchanging gifts, including postcards tied to the PokéStop the gift was obtained. Postcards containing a picture, geotag, and description of the PokéStop familiarize participants with their friends' distant play locations and surroundings. This new finding has not yet been noted in the current literature, likely due to the relatively recent release of the gift system in June 2020.

*Pokémon GO* can also foster a sense of community through feelings of connectedness and belonging, which is another goal of urban planners. The existing literature also corroborates this phenomenon (Humphreys, 2017; Manning, 2019; Vella et al., 2019). For some, this is achieved through the game's sociability, which encourages cooperative and community play, leading to positive social outcomes such as meeting people and making friends. *Pokémon GO's* ability to be a social catalyst is well-noted (Humphreys, 2017; Vella et al., 2019). Community is also created through friend groups centered around *Pokémon GO* gameplay and online *Pokémon GO*



communities. The current literature does not mention these online communities, such as locally based Discord servers. Others achieve a sense of community without necessarily socializing but by playing amongst other participants and feeling like they are a part of a larger collective. These findings align with the existing literature, which states that *Pokémon GO* can foster feelings of community that are actual or virtual (Manning, 2019).

*Pokémon GO* can also be a vessel for educational experiences through learning fostered by gameplay. While the literature has shown *Pokémon GO* can be a learning tool in structured educational settings, the learning can also happen through natural gameplay (Bruno, 2019; Trapido-Lurie, 2016; Cacchione, 2019). PokéStops draw participants to landmarks, plaques, information signs, and murals, where they gather information through real-world objects. This contradicts the findings of a previous study which found that participants only paid attention to the in-game information but did not interact with the physical object (Kot & Wyszynski, 2021). In some cases, the educational process sparks curiosity, leading participants to conduct further research online. This phenomenon is significant because it can contribute to a deeper sense of place and can create an appreciation for a participant's gameplay location and its history or significance, which may lead to pro-civic actions to protect their location.


*Pokémon GO* can also impact local tourism through the behavior of players and ticket and global events. Participants often advocated for their preferred play location through recommendations to fellow players as a place to play and non-players as a travel destination. Some participants were even willing to travel for *Pokémon GO* to

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attend in-person events like the Pokémon GO Tour: Hoenn – Las Vegas or play specific global events in a certain location like Seattle Center. Those who had played while traveling mentioned phenomena that align with the current literature on *Pokémon GO* and tourism, such as using the game to navigate unfamiliar locations, meeting local people through *Pokémon GO*, and creating memories through gameplay (Woods, 2021). However, the current literature around *Pokémon GO* and tourism is limited, so phenomena such as advocate behavior and ticketed and global events and their impacts have yet to be studied. Still, this phenomenon indicates that *Pokémon GO* has the potential to positively impact a city's tourism through player behavior and events hosted by Niantic.


Participants also contribute to local businesses by playing and making purchases at small businesses, restaurants, and shops. The participants who do not regularly do so would be willing to make purchases at businesses if they collaborated with *Pokémon GO*. This supports the claim of a previous study that found that businesses associated with *Pokémon GO* attain a higher level of consumer engagement and more positive consumer perception (Pamuru et al., 2021). Collaborations have already occurred through sponsored PokéStops at Starbucks, Verizon, and McDonald's, but participants only mentioned these locations when discussing the quality of their gifts. Still, these findings regarding pro-business behavior strengthen existing claims that *Pokémon GO* can be used to make a positive impact on local businesses within a city.

Participants have made positively impacted public health by encouraging them to get out and exercise by walking. While public health researchers thoroughly studied the



positive health impacts of *Pokémon GO* at the outset of the game, this study revealed that COVID-19 has led to new gameplay and health considerations (Althoff et al., 2019; Khamzina et al., 2020; Ma et al., 2018; Nigg et al., 2017). During the pandemic, *Pokémon GO* became a motivator to stay active during this sedentary phase of the participants' lives. Additionally, those who have continued the trend of working from home have started to use *Pokémon GO* as a reason to take short exercise breaks during and after the workday. Niantic also introduced changes to the game mechanics that allowed for successful play from the safety of home, allowing players to play together during community days virtually, maintaining the feeling of connectedness among players and friends. Since most of the public health research was conducted prior to the pandemic, these represent new findings for the literature.

Lastly, respondents report that *Pokémon GO* incorporates and promotes social justice issues such as representation, diversity, and inclusion. These occur through gameplay features like avatars, in-game clothing, culturally themed global events based on specific regions of the world, and local events that celebrate local traditions and holidays, such as the Taiwan Lantern Festival. No studies within the current literature have researched the relationship between *Pokémon GO* and social justice. However, these findings suggest that *Pokémon GO* can promote positive cultural representation and understanding. These phenomena, some predicted by the literature and others more contemporary and unexpected, support the relevance of augmented reality games to urban planning and adds depth and nuance to its utility to the field beyond the implications of the primary research questions regarding place attachment.



The data suggests that some participants have formed an affective attachment to their preferred play location through *Pokémon GO*. However, the strength of affective attachment varied among the participants. Some participants were quite cognizant of their emotional bond and outright described their connection verbatim. Interestingly, rather than a single play location, one participant became attached to individual PokéStops and gyms that gained meaning through various gameplay experiences. Participants expressed these feelings through detailed memories, which are considered a strong indicator of attachment when place can evoke memories (Twigger-Ross & Uzzell, 1996). *Pokémon GO's* ability to create experiences and memories that can lead to meaningful connections to place, both play locations and individual PokéStops, is a positive indicator of its ability to facilitate place attachment (Manzo, 2005).

Others, who were less cognizant of their attachment, described their bond to their preferred play location through positive emotional descriptions. Some expressed their feelings of love or pride for their preferred gameplay location, indicating a high level of attachment (Scannell & Gifford, 2010). Pride was most common among participants with significant prior experience with their preferred location and a substantial residential history in Seattle. While their prior experience may have formed the basis for the emotional connection, it was likely strengthened through frequent revisitation for *Pokémon GO* purposes. This proximity-maintaining behavior, prompted by *Pokémon GO*, is another indicator of place attachment and the game's ability to facilitate it (Hidalgo & Hernández, 2001).

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Others described their preferred play location with positive feelings indicating an emotional connection, though not as strong as those described by other participants. Many used positive emotions related to happiness, likely mediated by gameplay enjoyment. This aligns with the findings of previous research studies, which found a positive relationship between game enjoyment, success, satisfaction, and place attachment (Oleksy & Wnuk, 2017; Wang & Hsieh, 2020). Another potential explanation could be the transfer of the player's emotions to the play location through game-transfer phenomena (Ortiz de Gortari, 2019). Regardless, the results indicate that positive gameplay experiences can encourage affection for the places where they occur. Others expressed feelings of belonging and comfort while playing within their play location, which moreover indicates social attachment or membership to an environment (Raymond et al., 2010). Gameplay components that promote social and cooperative play through game mechanics such as raids and events like community days likely facilitate these feelings.

Some also expressed affective attachment through negative emotional reactions to hypothetical situations regarding their preferred location. This included no longer being able to play at their preferred play location and if perceived negative changes were to occur, such as removing a meaningful feature to the participant. The negative emotional responses varied among participants from strong emotions like anger and grief to moderate emotions of frustration and sadness to simply disappointment. Despite the variance in emotional intensity, negative emotional reactions suggest that *Pokémon GO* can facilitate at least some emotional connection and care for what

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happens to a player's preferred play location. When further prompted to express their willingness to get involved to fight these negative actions, many mentioned they would be willing to join a variety of civic activities, including signing a petition, joining a group, and partaking in a protest. This kind of pro-civic behavior, action, and involvement is another indicator of attachment (Lewicka, 2005; Scannell & Gifford, 2010).

These varying degrees of emotional expression among the sample make it difficult to make a definitive claim regarding *Pokémon GO* and affective attachment. For example, some stated they had no strong emotional feelings about their play location. However, a few directly stated their attachment, while others expressed strong feelings and behaviors that were indicators of high attachment. A majority of the sample expressed at least some emotional connection to the preferred play location. Therefore, the results of the sample suggest that augmented reality games like *Pokémon GO* can facilitate affective attachment to varying degrees. This likely originates from positive gameplay experiences facilitated by the gameplay location, which encourages proximity-maintaining behavior that further strengthens attachment.

The results indicate that only a few participants experienced place identity with their preferred gameplay location. These participants expressed feelings, beliefs, and values that indicate place identity, such as self-identification in which the participant felt like the place was a part of them or that they personally identified with the place (Proshansky, 1979). Other positive indicators of place identity included pride, memories, and personal meanings. These contribute to aspects of the place identity processes of distinctiveness, continuity, self-esteem, and self-efficacy (Twigger-Ross, 1996).


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However, those who expressed these feelings, beliefs, and values already had a substantial history with the play location that predated their *Pokémon GO* experiences.


Yet, there is still a possibility that these *Pokémon GO* experiences may have strengthened their place identity. For example, *Pokémon GO* caused a participant to feel more comfortable reengaging with their play location following recent negative history with the space. Another potentially deepened their place identity by personally shaping their play location by nominating PokéStops as a part of the Wayfarer program. Those without a substantial previous history with their play location expressed place identity through symbolic associations, another indicator of place identity (Proshansky et al., 1983). These symbols were byproducts of gameplay, such as enjoyment, and more personal meanings, such as their life in Seattle.

However, this research study has not found substantial enough evidence to suggest that *Pokémon GO* alone can facilitate place identity. It is more likely that *Pokémon GO* can strengthen already established place identity through proximity-maintaining behavior. The other identified indicators of place identity are not strong enough to make a definitive claim. Therefore, this study requires further investigation with a sample that does not have a substantial history with their play location prior to playing *Pokémon GO* and more detailed questioning of place identity indicators.

The results indicate that most participants experienced place dependence on their preferred play location. Participants expressed this through a preference for their preferred play location because of its functional capabilities for gameplay. This included




characteristics, resources, and amenities that helped participants achieve their gameplay goals and needs, which is the fundamental element of place dependence (Bricker & Kerstetter, 2000; Williams & Roggenbuck, 1989). These are often physical characteristics of the gameplay location that correlate to in-game elements and mechanics that help facilitate efficient and successful gameplay. For example, an abundance of real-world places of interest within the physical play location correlates to an abundance of PokéStops and gyms within the digital world. This PokéStop density allows for more efficient resource gain, increased opportunities to participate in raids, and more frequent Pokémon spawns. In addition to PokéStop density, players seek places with unique points of interest to receive interesting gifts to send to friends. Pedestrian-friendly design and infrastructure is another physical characteristic that aids participant gameplay because it allows players to safely walk and focus on gameplay, meander in open and non-crowded areas, and use loops and pathways that are conducive for game mechanics that require consistent walking patterns like hatching eggs and using incense. Players also value locations with weather and human needs amenities that allow for weatherproof play and provide basic needs such as food, drinking water, seating, and restrooms so they can focus on gameplay for long durations. A non-physical characteristic that attracts players is player presence because it helps them achieve their social or gameplay goals. While the location does not provide this, player presence is likely a byproduct of other physical characteristics conducive to gameplay that attract other players.




The results demonstrate that these are the functional aspects of place facilitating successful *Pokémon GO* gameplay. Players choose these locations over alternatives and continue to visit them over time because they achieve their gameplay goals. Players become dependent on these locations, and through proximity-maintaining behavior, they develop a deeper place attachment. This likely increases feelings of affective attachment from the enjoyment received from successful gameplay. This aligns with the expectation of the study and provides a substantial basis for the utility of augmented reality games in urban planning and helping planners achieve their goals.

This research study's results indicate a legitimate potential for using augmented reality games in urban planning. This is based upon the ability of augmented reality games to motivate and engage players through gameplay design elements known as gamification. For example, *Pokémon GO* causes players to move through, linger in, and interact with public space. This study also found that *Pokémon GO* can create place dependence and affective attachment to the gameplay location, which for planners is a positive outcome because it contributes to a vibrant urban life within the city. Additionally, the identified phenomena, many corroborated by existing the literature, directly relate to a variety of planning goals, including creating a sense of place, fostering a sense of community, improving public health, stimulating local business, promoting tourism, and offering opportunities to learn and appreciate local history. These outcomes are relevant to a number of planning subdisciplines such as urban design, community and economic development, historic preservation, and environmental health. Thus, urban planners can utilize the gamification of augmented



reality games to foster outcomes, such as these, by shaping player behavior through specific gameplay design elements and mechanics to meet their planning goals and needs.


This study proposes two recommendations for how urban planners can utilize the gamification of augmented reality games. The first recommendation is creating a new augmented reality game designed to accomplish specific urban planning goals and objectives. This new game should utilize elements of successful augmented reality games like *Pokémon GO* while implementing original gameplay mechanics that target specific planning outcomes. For example, an augmented reality game focused on fostering a healthy community by encouraging walking through a gameplay mechanic that rewards the user after walking a certain distance, similar to hatching eggs in *Pokémon GO*. Additionally, players could be encouraged to walk in certain areas within a city, perhaps in green spaces, with in-game bonuses in those areas that reduce the distance required to receive rewards. This game would simultaneously promote physical activity while activating desired areas within the city. Urban designers, who are interested in promoting a sense of place and community through the built environment might be interested in an augmented reality game that encourages players to create connections within place. This game could attract users to visit and engage with specific points of interest within public space, similar to how PokéStops and gyms function in *Pokémon GO*. A social gameplay mechanic that requires collaboration between players at these points of interest, like *Pokémon GO*'s raids, could promote social interaction and involvement, fostering a sense of community. If these gameplay mechanics work in



harmony, it can facilitate placemaking and the activation of public spaces. Lastly, historic preservationists could design an augmented reality game that encourages the player to visit locations of historical significance within the city. Players could receive an objective or questline similar to research in *Pokémon GO* that tasks the player to visit certain historic buildings or landmarks. Once there, players must use real-world information, such as a plaque, to solve an in-game question or puzzle that gives the player unique rewards. This mechanic would encourage visitation to places of historical significance, spark learning, and potentially foster an attachment that could lead to civic action for historic preservation.


While creating a new augmented reality game by planners could be a fruitful pursuit, this study recognizes its economic and technical limitations. Planning departments and planners may lack the funding, technical resources, and skill to design such a game. With more time and skill development this could be a new planning specialty in the future. However, for now, a partnership with an augmented-reality game developer could help to develop and publish such a game.

Rather than the creation of a unique augmented reality game, planners could collaborate with an already-established augmented reality game like *Pokémon GO*. Through this collaboration, city planners could work with augmented reality game developers like *Pokémon GO's* Niantic to design in-game events that accomplish specific planning goals. For example, events geofenced to a particular location that planners want to activate. This could be a geofenced park, public space, or an entire neighborhood. In-game bonuses such as unique spawns or raids within the geofenced



area would encourage visitation and activation of these spaces. For example, a specific neighborhood could be the focal point for an event with themed spawns and raids that reflect the neighborhood's identity and research tasks that guide the player to representative points of interest. As previously stated, *Pokémon GO* can impact economic activity, so perhaps there could be an event that attempts to reinvigorate a struggling business district like a downtown. Through collaboration, businesses become a sponsored PokéStop and offer special promotions to *Pokémon GO* players to increase consumer engagement. Niantic and planners could also create events at the city level. For example, planners make certain points of interest that they want to draw attention to into PokéStops. These stops could be highlighted and emphasized with a unique color and give additional items during a themed event, such as a city history event. According to this study's findings, positive emotions from successful gameplay will transfer to these locations and promote a positive emotional connection which could be useful in cases like these to promote historic preservation. This example could be applied to environmental points of interest to promote sustainability and cultural points of interest to encourage cultural understanding. There are a number of ways this model of collaboration could help achieve planning goals and objectives.

In each of these potential recommendations, players are encouraged to visit certain areas within the city because of their gameplay mechanics and benefits. Suppose players continue to visit these areas because they help players achieve their gameplay goals. In that case, they will likely develop place dependence which can lead to a deeper affective attachment for the location. While this may be useful for planners



to guide players to certain areas of the city to increase engagement and activation of these spaces, it is important to recognize its ethicality. Perhaps planners should not guide people to certain parts of the city to create positive experiences that may lead to outcomes such as place attachment. Rather than guiding players, maybe planners can take note of the successful elements from augmented reality games and listen to players' experience to improve public spaces to naturally attract players and non-players alike. For example, many participants mentioned built environment considerations such as walkability, transportation accessibility, architectural variety, and weather and human need amenities.

This research study was limited in a number of ways. First, there was convenience sampling because the sample was not chosen through random selection. Rather, participants were approached and recruited on event days, including two community days and two global event days at Seattle Center to increase participant availability. This means a particular type of player, one who plays during these types of events, was recruited for this study. Additionally, it was more likely that the recruited participants had an attachment to Seattle Center than other gameplay locations within Seattle. Thus, the sample was not totally representative of the study population. Another limitation is that the researched selected participants without consideration of their previous history with their preferred play location and residential history in Seattle. This caused difficulties when interpreting the results and confirming *Pokémon GO's* impacts on certain aspects of attachment, like place identity. Time constraints also limited this research study. This study had to be completed in roughly five months, so

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the researcher only had time to interview a limited number of participants which decreased the overall sample size. Additionally, the researcher conducted the data analysis phase expeditiously, which may have led to potential oversights during the coding and theme-building processes.

Future research could improve upon this study by having a wider sample selection. The researcher could recruit participants at multiple locations on event and non-event days, which would diversify the sample. Increased research study time would allow for a greater sample size because there would be more time to recruit and interview participants. Furthermore, this would allow for a more detailed and thorough data analysis process. A future study could also delve more deeply into the emotions and feelings of participants to better explore their emotional connection to their preferred gameplay location. This would help make a more definite claim regarding *Pokémon GO's* ability to facilitate affective attachment. Another future study could focus more on place identity by vetting participants to determine their previous history with the play location so that determinations regarding the game's impact on the participant's attachment would become more evident. Lastly, this research study could be replicated using another augmented reality game or a different observation site which would increase the generalizability of the results.

## Conclusion

In the summer of 2016, *Pokémon GO* became a global phenomenon. The augmented reality game led to an explosion of urban life as millions got out and explored their local communities in search of Pokémon. While the game became a topic

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of interest for public health researchers, the game's potential impacts on other fields, such as urban planning, were less researched. This research study aimed to fill that gap by exploring the connection between *Pokémon GO*, the experience of its players, and urban planning. This study had two main research questions: 1) How does *Pokémon GO*, a form of augmented reality game, contribute to place attachment among players? 2) In what ways planners can utilize augmented reality games to achieve their planning goals?


This study employed qualitative methods to answer these research questions by examining player experience. Through in-depth semi-structured interviews with 20 Seattle-based *Pokémon GO* players, this study explored their gameplay history, motivations, and behavior. The interviews followed an interview guide informed by place attachment literature and designed to determine what players look to experience and what they actually experience, examine the bond between players and their gameplay location, determine the gameplay and location factors that influence player location choice, and identify gameplay phenomena related to the field of urban planning. Using an inductive approach informed by place attachment literature, the data was inductively coded to let player experience speak for itself and allow themes to naturally arise.

Through the coding process, several major themes arose, including the dimensions of play, urban planning phenomena, and place attachment. The dimensions of play are the vast array of player considerations and experiences related to gameplay and gameplay location choice. This included the social, outdoor, built, locative, and

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technical dimensions of play. This information was critical in understanding the participants' relationship with place and laid the foundation for how gameplay locations can help participants achieve their gameplay goals. The urban planning phenomena were the themes that arose through the analysis that were relevant to the planning field. While there were a few contemporary discoveries, these phenomena mostly aligned with the existing literature, including *Pokémon GO's* impact on sense of place, fostering a sense of community, serving as an educational vessel for history and culture, supporting tourism, stimulating local business, improving public health, and promoting social justice issues.


This research study examined three elements of place attachment, including affective attachment, place identity, and place dependence, all of which were deductive themes within the data analysis. Many participants expressed an affective attachment to their gameplay location with varying degrees of intensity. The results suggest that it is possible for *Pokémon GO*, a form of augmented reality game, to create affective attachment. This likely occurs through positive gameplay experiences facilitated by the gameplay location, which encourages proximity-maintaining behavior that further strengthens attachment. Few participants expressed place identity with their preferred play location. Those who did express place identity had a substantial history with their play location prior to their *Pokémon GO* experience, making it difficult to determine the game's impact. *Pokémon GO* likely strengthened place identity by promoting proximity-maintaining behavior. Most participants experienced place dependence on their preferred play location because of its functional capabilities for gameplay. Their



functional aspects included characteristics, resources, and amenities that helped participants achieve their gameplay goals and needs, which caused them to choose these locations over alternatives. Place functionality likely contributes to the feelings of affective attachment from the enjoyment received from successful gameplay.

This research study suggests that urban planners can utilize augmented reality games' gamification to take advantage of their phenomena and create affective attachment and place dependence to achieve planning goals in a number of subdisciplines. The study recommends the creation of a new augmented reality game designed to accomplish specific urban planning goals and objectives. Planners could utilize elements of successful augmented reality games like *Pokémon GO* while implementing original gameplay mechanics that target specific planning outcomes. The other recommendation is for planners to collaborate with the developers of already established augmented reality games such as *Pokémon GO*. Through this collaboration, city planners could work with augmented reality game developers like *Pokémon GO's* Niantic to design in-game events that accomplish specific planning goals. These represent just a few ways that the world of augmented reality games and urban planning could come together for the betterment of cities and public life.

There is the potential to continue the work of this research study in a number of ways. A future study could focus more on the impacts of augmented reality games on place identity. For example, the sample should only include participants without a substantial history of their preferred play location prior to their *Pokémon GO* experience; that way, it is easier to interpret the game's impacts. Additionally, the



interview could focus the questions more specifically on aspects of place identity to get better results. Similarly, a future study could explore the participant's emotions connection more deeply to better examine their affective attachment to their preferred gameplay location. Future work could also replicate this study with different augmented reality games. This work could provide new insights, increase the generalizability of the results and provide a stronger basis for the case of utilizing augmented reality games as an urban planning tool.

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## Appendix A - Interview Guide

### Icebreaker Question

- 1) What's your favorite Pokémon?
  - Relate the generation to the beginning of interest in Pokémon

### Background Player Information

- 2) When did you start playing *Pokémon GO*?
  - How frequently have you played since you started? Any breaks?
  - Have you always lived in Seattle since you started playing or did you live elsewhere too?
- 3) Why do you play *Pokémon GO*? What do you enjoy about playing?
  - What are your gameplay goals?
    - Ex: catch em' all, battling, raids, hatching eggs
  - What has motivated you to continue playing?
    - What would you say is the biggest motivator?
- 4) Who do you play *Pokémon GO* with?
  - How often do you play together?
  - How long have you played with them?
- 5) At what locations do you often play *Pokémon GO*?
  - What do you like about these locations?
  - How often do you play at these locations?
    - Every day, a few times a week, only for events

### Place Attachment - Person - Individual

- 6) What would you say is your favorite place to play *Pokémon GO*? Why?
  - What makes this place special compared to other places you play?
  - Do you have any favorite PokéStops?
- 7) How long have you been playing at your favorite location?
  - Could you describe how frequently you've played at this place over time?
  - Do you ever visit this place while not playing *Pokémon GO*? If so, for what reasons?

### **Place Attachment - Place - Physical & Social**

- 8) What do you like about this place's physical environment?
- Do you think these features help satisfy your gameplay needs?
    - Natural features (Trees, flowers, water, landscaping)
    - Built Features (Architectural style, pedestrian design, statues)
      - PokéStops and gyms
- 9) What do you like about this place's social environment?
- Have you made any social connections within this location?
    - Seeing/interacting with other players and non-players
    - Feeling okay to play the game

### **Place Attachment - Process - Affect**

- 10) Could you describe how you emotionally feel about this place?
- What kind of emotions do you feel while playing there?
    - Ex: comfortable, safe, happy, relaxed, free, like you belong
- 11) How willing would you be to play in a location other than your favorite?
- How would you feel if you could no longer play at your favorite place?
  - If you had to choose another place to play, what kind of place would you choose? Please describe its features.

### **Place Attachment - Process - Cognition**

- 12) What does your favorite place to play *Pokémon GO* mean to you? Or symbolize?
- Do you personally identify with your favorite place to play *Pokémon GO*?
    - Do you feel like your favorite place is a part of you?
  - Do you have any special experiences or memories that stand out?
    - Ex: In-game events, playing with friends, catching a special Pokémon
- 13) As you know many PokéStops and gyms are located at historical points of interest. What historical knowledge, if any, have you learned about your favorite place to play *Pokémon GO* as a result of playing the game?
- How did you learn it?
    - Ex: PokéStop Info, Plaques, Gifts, Online
  - Are you interested in learning more about your favorite place's past?



### **Place Attachment - Process - Behavior**

14) If you found out negative changes were going to be made to your favorite place to play *Pokémon GO*, how likely would you be to get involved?

- For example, it's going to be redeveloped as a parking lot
- How far would you go? Would you attend a meeting? Join a protest? Create a group?

15) How do you talk about your favorite place to play *Pokémon GO* to other players?

- Do you often talk it up or speak favorably about it?
- How do you talk about it to non-players?
- Would you recommend it to visiting tourists?

## Appendix B - Codebook

Code Name	Definition	Example
<b>Activities</b>	Actions performed by the player or being performed by someone at the gameplay location	"Well, for Northeast Seattle, it's just my walk. It's where I walk my dog."
<b>Alternative Regional Gameplay Locations</b>	Participant gameplay locations outside Seattle but within the state of Washington	"Bellevue Square. I like that it's indoors. So if the weather sucks here that's basically it's just the nearest place that's large and indoors
<b>Alternative National Gameplay Locations</b>	Participant gameplay locations outside the state of Washington	"I played at Disneyland that was a lot of fun. There's a lot of stops."
<b>Amenities</b>	Elements of the gameplay location that help to provide comfort, convenience, or enjoyment.	"Some kind of shelter or overhead would be nice, you know, for in case it's raining because hey, it is Seattle."
<b>Animals</b>	Living organisms in the kingdom Animalia at the gameplay location and those that have inspire Pokémon	"Always happy to go there and look forward to it and seeing what's spawning and getting postcards, and then the environment the ducks and all that."
<b>Art</b>	Visual objects that are created to be beautiful or to express an important idea or feeling	"Like there's a gym that is a mural that is, you know, a block away from my house and I didn't know existed before this game. You know, I think that the there's, there's a good basically, usually the murals are kind of my favorite PokéStops because they have just good art, right? Yeah, a photo of a sign or a tree. You know, trees are cool, but, you know, cool art is cooler."
<b>Augmented Reality</b>	An interactive experience that combines the real world and computer-generated content	"So, so, you know, this conversation about how to turn, turn the world into a PokéStop, you know, how to populate the world, you know, the real world with a better world because it really has, you know, what it really has done for me as it's laid an overlay a complete overlay on the world that I travel in, whether I'm walking or in the car, or at the airport, there's a complete dual reality. For me, you know, wherever I go, and it changes my attachment to place, wherever I am because I, there's, I'm deeper in the place I'm in."

<b>Built Environment</b>	Man-made structures that support human activity	"Definitely architecture the mix of the modern and the original buildings and also the history of it."
<b>Business</b>	Organizations or individuals engaged in commercial activity	"They've clearly done it with, with corporate entities like Verizon and Starbucks, but I'm pretty sure most cities have like a downtown business association. But I feel like it would be cool to see more involvement with that. It would be pretty nice to see them get some support."
<b>Civic Activity</b>	Individual or group activity expressing issues of public concern	"For the monorail I'd probably join a protest group. But I mean, I probably would gravitate towards activism on it."
<b>Education</b>	The process of learning or teaching	"I did a historical deep dive on the world's fair because of it too and that led me to all the information on the monorail and the crossovers with Disney and stuff."
<b>Events</b>	Events that take place in the game and sometimes in a specific location for a limited time	"For example, this last weekend in Vegas was boring. Oh, was it just flat, you know, just just kind of nothing there. I mean, they had cool little things set up like a little volcano and but at the end of the day, it was a park in the desert."
<b>Gameplay Accessories</b>	A piece of hardware or application that assists the participant's <i>Pokémon GO</i> gameplay	"You know, like I was, I was at an acupuncture appointment this morning in west Seattle. So that was great, because I could get some postcards from there and, and I left my pokéball catcher on during the appointment so I got a bunch of stuff while I was there. So it's just it's just way more fun."
<b>Gameplay Characteristics</b>	Descriptive qualities of <i>Pokémon GO</i> and participant gameplay	"That is really good question. I was actually questioning myself the other day, why am I still playing this? Because, first of all, it's oddly addictive. You also meet all kinds of interesting people, I think playing when you meet up."
<b>Gameplay Features</b>	Components of <i>Pokémon GO's</i> gameplay design	"For me it was more always about PokéStops you know, unless I'm much more interested in the PokéStops and the AR than I am about the actual pokémon itself."
<b>Gameplay Location Characteristics</b>	Descriptive qualities of the participant's preferred gameplay location	"In Ballard I think there's a good enough amount of like, stops and get to get in a good walk, but still feel like I had the opportunity to hit a lot of different PokéStops."
<b>Groups</b>	An organized group of people who the participant plays <i>Pokémon GO</i> with	"Mostly solo but yeah, sometimes like on the community days is like, yeah, like that group that you found me with? I only got back into this game last summer. So I'm like still working on finding other people that play to play with. So none of my friends play this game."
<b>Health</b>	A state of physical, mental and social well-being	"It was really key in my recovery because, you know, I had back surgery. You know, my kids would like get me to the car, and just even driving around in the car was was working on my back and they were committed to me doing a daily incense from the car. So we would drive around the neighborhood really slowly

		while I was catching Pokémon for 15 minutes every day. So that was fun. Like physical therapy through the incense."
<b>History</b>	Knowledge dealing with past events	"I think none, but I had a fair bit of historical knowledge about Seattle Center before that, because I attended things like the 50th anniversary of the World's Fair that the Space Needle was filled for."
<b>Identity</b>	Qualities, beliefs, traits, appearances, and expressions that characterize a person	"Yeah, definitely. It's definitely a part of me and part of my Seattle chapter of life I would say for sure."
<b>In-game Items</b>	Equipment, accessories, cosmetics, materials or resources used within <i>Pokémon GO</i>	"Then I'll just do like, like, an hour incense, and like a start piece."
<b>Nature</b>	The physical world not made by humans	"I mean, you know, there's, there's a lake, there's lots of greenery."
<b>Negative Emotions</b>	Emotions that are not typically pleasurable to experience	"I'd feel pretty sad. Yeah, it's, it's definitely really useful for big events."
<b>People</b>	Individual human beings	"Yeah, I think it's fun allows you to keep in touch with the people that want to be kept in touch with you know."
<b>Places</b>	Particular locations or areas visited by the participant	"The library, I frequently go to the library anyway. So that that's just kind of like a lifestyle. Sometimes I'll go there purposely just for the stops, but usually, it's like I pair it with the library visit."
<b>Pokémon</b>	The monster characters featured in the Pokémon franchise	"Like I'll see on Discord they'll say there was a white Flabebe, somewhere near 20th and Crockett and we should all go there because that was spawning over there."
<b>Pokémon Franchise</b>	A Japanese media franchise managed by The Pokémon Company	"So I was already predisposed to Pokémon just as a franchise that I really enjoyed, and I was excited about this different modality to enjoy it. It was so different from the mainline games. The way that I was used to consuming Pokémon. That I was already excited."
<b>Positive Emotions</b>	Emotions that are typically pleasurable to experience	"It's very happy warm and vibrant and that makes me feel comfortable."
<b>Seasons</b>	The four periods of the year defined by particular weather	"I'm not gonna walk Olympic sculpture park in the rain in the winter months."
<b>Seattle Center Features</b>	Amenities and locations within Seattle Center	"Um, a lot of people played stuff in the armory but the event itself was in the building, like two buildings north of the armory, where like the ballet is now the underground area for that."

<b>Sense of Community</b>	A feeling that members have of belonging	"The GO Fest in person was actually really good. I mentioned before, like I was wearing that Garchomp shirt, and I just got so many compliments on it. It kind of felt like I was in the community. You don't really get that very often."
<b>Sense of Place</b>	How someone perceives and experiences a place	"Yeah that was kind of fun, though. You know, I mean, like, there was this little art gallery that I'd never knew existed there. It's like, let's go in there."
<b>Signage</b>	Use of signs to communicate a message	"In the sign part is like this light up saxophone. Yeah, it's on the stop and I think it looks cool."
<b>Sociability</b>	The quality of being sociable	"Yeah, like on some community days I've talked to some players and we've added each other in the game or on Discord but more recently, that's happened to me."
<b>Social Justice</b>	Full and equal participation of all groups in a society	"I guess my second one is my shiny Sylveon. It represents trans colors."
<b>Social Media</b>	Websites and applications that focus on communication, interaction, content-sharing and collaboration.	"It's Southern California based but people all over the place are in the Facebook chat raid chat. If I ever raid and need peeps I'll post on there. Hey, I've got blah blah. If they're able to make it then I'll invite them."
<b>Technology</b>	Systems and devices that are the result of scientific knowledge for practical purposes	"If it was as close to me as library, then I would probably pick the Seattle Center. Although the cellphone connection there is a little bit spotty so at least for me."
<b>Tourism</b>	The activity and business of travelling for pleasure	"I mean, if I get a postcard from someplace in Australia, and I ever go there, and I visit, I might want to go to visit that place because of the postcard it creates a curiosity about place that's really global."
<b>Transportation and Infrastructure</b>	The system of public works designed to facilitate movement	"Yeah, and plus, I like usually take the monorail there because I live downtown now. So it's just super convenient."
<b>User Motivations/Goals</b>	The participants goals and motivations related to their <i>Pokémon GO</i> gameplay	"One is a good excuse for me to get outside. Sometimes, like I work from home, I work remotely, I don't necessarily get out of the house that much. It's a good excuse for me to get outside."
<b>Weather</b>	The general state of the atmosphere, including temperature, wind, humidity, precipitation, and cloud cover	"I'm just sitting in my car which would not be fun if it wasn't for Pokémon GO but I'll go there and just enjoy the lake in the rain add maybe I'll walk to hit a or PokéStop two, but maybe it's changed the way I use the lake."