

**The Effects of Online Nudging on Individuals' Behaviour:
The Case of Pokémon Go**

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Abstract

The use of nudging in online advertising to subtly align the offering of products and services with individuals' identity is a now commonplace practice. Cheney-Lippold (2017) and Zuboff (2019) criticize online nudging for operating behind closed doors, cycling through of user data and personal information to modify individuals' behaviour for commercial gain. Nudging is a central feature of the popular game *Pokémon Go*. It uses predictive algorithms and players' geolocational data to create augmented reality gaming scenarios that guide users through real-world public and private spaces as they seek to achieve game-related objectives. As such, *Pokémon Go* offers an ideal microcosm for analyzing users' awareness of online nudging and other behavioural modification techniques employed in online advertising. Using a qualitative research design, semi-structured interviews were conducted with 23 undergraduate students from the University of Ottawa who self-identify as regular players of *Pokémon Go* to examine how they understand, navigate, and respond to the nudging practices employed in the game. The observations emerging from an analysis of their descriptions of typical gameplay sessions offer an empirical basis, albeit of limited strength, for challenging assertions that nudging practices are foremost manipulative, exploitative, or somehow disempowering. Likewise, the emerging observations about the diverse ways in which individuals interpret their encounters with nudging practices suggest possible grounds for reimagining how the understanding of data literacy might be approached.

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1 Locating Identity in a Digital World

The mainstreaming of the Internet and the World Wide Web during the 1990s contributed to fostering new perspectives about user identity (see, for example, Turkle 1995; Kendall 1998) and, later, its place within online advertising. During this period, discourse about online identity predominantly focused on the potential for innovation and self-presentation online. There was keen interest in the channels cyberspace offered users to manipulate and explore their identities in diverse online venues as well as the consequences of such activities (see, for example, Kendall 1998; Cornetto 2001; Zhao 2005). This was a time in the history of online advertising in which an onus was placed on connecting with peoples' ability to explore whomever they wanted to be online and finding ways to tap into how "individuals construct[ed] their computers as projections of themselves" (Turtle, p. 41).

By the late 1990s, the possibility of making online advertisements more relevant to individual users by connecting with personal "needs for escapism, diversion, aesthetic enjoyment, or emotional release" (Ducoffe, 1996, p. 23) continued to gain traction. Since then, online advertising has evolved from connecting with 'personal computing' as Turkle (1995) put it, to connecting more directly with individuals on the basis of data-generated user profiles that are combined with geospatial data and algorithmic modeling to calculate perceived needs (i.e., predictive advertising) (Andrejevic, 2014; Couldry & Mejias, 2019; Kim et al., 2022). This shift has coincided with a movement away from earlier identity-centered discourses of online identity as being self-constructed forms of individual self-exploration, towards approaching and understanding online identity as comprising quantitatively based representations of human actors that are constructed through third party surveillance for commercial purposes.

Both Andrejevic's (2007) and Beer's (2009), for example, drew attention to the ways in which users' locational and behavioural data were being collected and used by early Web 2.0 platforms and online advertising networks (e.g. Google, Myspace, YouTube, Facebook) to feed specific marketing prompts to users and to mediate and alter individuals' behaviours and perceptions. Building on this research, Van Dijck's (2013) further highlighted how algorithmic feeds of social media platforms governed users' identity and shaped their behaviours in relation to self-presentation, social validation, and participation in digital communities. Expanding on these concerns, Cheney-Lippold (2017) introduced his notion of algorithmic identity to describe how users' online generated data and behaviours are cyclically categorized, aggregated, and recycled into predictive algorithms with the purpose of extracting further data from users. In so doing, he also pointed out that predictive algorithm modelling may affect how individuals understand themselves and their experiences online. To this end, he described online identity as consisting of "the decomposition of individuals into data clouds subject to automated integration and disintegration" (Cheney-Lippold 2017, p. 44).

Zuboff (2019) subsequently labelled this process surveillance capitalism, which she defines as referring to the aggregation of "human experience as free raw material for translation into behavioural data" (p. 14), that, subsequently, is processed using machine intelligence to generate prediction models for advertising profits.

For her, surveillance capitalism constitutes the latest stage in the logic of accumulation undergirding the history of capitalism. Like the earlier stages, this latest stage, as she sees it, also is producing "its own social relations and with that its conceptions and use of power" (Zuboff, 2015, p. 77). In line with this view, Zuboff posits that contemporary economic relations are characterized by people willingly and unwillingly trading their personal information in exchange

for access to free services. In other words, surveillance capitalism relies upon “unprecedented asymmetries of knowledge and power” between platform companies and users. The danger, she contends, rests in the potential for the transaction of personal data to be used for “predict[ing] and modify[ing] human behaviour” without people being aware that this is occurring (Zuboff 2019, p. 75). Indeed, she goes so far as to posit that the classic notion of audience as commodity has transformed into audience data as commodity.

It is the perceived agency of individuals that marks a key distinction between earlier conceptions of the relationship between online identity and online advertising and how it is approached by Cheney-Lippold (2017) and Zuboff (2019). Within the surveillance capitalism framework, third party data aggregation, manipulation, and tracking of individual identity characteristics for commercial purposes is understood as eroding individual agency whether on- and off-line. Central to this process is the use of predictive modeling that relies upon aggregated data about individual identities to guide, or nudge, online decision making in specific directions (Tahaei 2021; Cheney-Lippold 2017). It is the desire to better understand the relationship between user awareness, behavioural guidance, and algorithmic design within digital environments that motivates the research undertaken for this thesis.

1.2 Nudging

Nudging, as originally discussed by Thaler and Sunstein (2008), refers to the ways subtle interventions can be designed into different platforms to steer individuals’ behaviour in particular ways. In digital spaces, it can take the form of prompts, design, or cues creating to encourage users to make certain decisions which, in turn, feed algorithms more data about individual tendencies and choices which, in turn, provides the means to more accurately predict outcomes and, thereby, affect future behaviour (Schmidt & Engelen, 2020).

Thaler and Sunstein (2008), who were among the first to advance the idea of nudge theory, call attention to choice architecture and the ways choice can be influenced. At the heart of their discussion is the notion of behavioural economics,¹ which applies psychology and economic analysis as tools for understanding and influencing human behaviour. Their research emphasises how understanding human psychology offers powerful mechanisms for altering behaviour, which, when employed with nudge theory in the context of online advertising, can affect peoples' agency with or without their knowledge (p. 243-44).

The role of nudging in manipulating behaviour for commercial purposes is crucial to understanding identity within the scope of algorithmic profiling. Schmidt and Engelen (2019, p. 2) define nudging as “the deliberate changes to and designs of people's choice environments... in attempts to predictably steer those people in specific directions.” They posit that nudging’s best practices “typically respect freedom of choice, as they do not change or remove options” (p. 3) while acknowledging its capacity to conflict with central moral values such as “liberty, autonomy, respect, and dignity.” Cheney-Lippold (2017) connects nudging to notions of identity and online advertising, highlighting how particular habits, preferences, and demographics “become sufficient to explain the identity of that user” (p. 44). Zuboff (2019), argues that surveillance capitalism depends on nudging precisely because unpredictable behaviour equates with lost revenue or as she puts it, “nudges are intended to encourage choices that accrue to the architect, not to the individual” (Zuboff 2019, p. 378). Put simply, increased predictability in user behaviours returns higher profits.

¹ Behavioural economics combines economics with psychology and is grounded in understanding how human choice and purchasing behaviours can be impacted by varying external sources. At the root of behavioural economics is the notion that people do not always make the most rational or best decision, even if they have the information available to do otherwise. Additionally, the way that choices are presented to people will ultimately influence their final selections or purchases. See, Witynski (2020), Samson (2019), Kenton (2024).

1.3 Statement of Central Research Question

In her examination of surveillance capitalism, one of the platforms Zuboff (2019) examines is the popular augmented reality mobile game *Pokémon Go*. She contends that the owners of this game, Niantic Inc.,² use in-game dynamics and augmented-reality to “herd populations of game players through the real-world monetization checkpoints” by nudging them towards predetermined areas, such as restaurants and businesses, so they may spend money while playing (Zuboff 2019, p. 200).

Pokémon Go has been dominating the mobile gaming space since its launch in 2016.³ Making headlines as the most popular mobile game in history, a recent trend estimate for *Pokémon Go* compiling varying tracking resources reported between 50 and 85 million monthly active users in September, 2025 (ActivePlayer, 2025).⁴ *Pokémon Go* “uses geolocation to create augmented reality (gaming components incorporated into real-life surroundings) gaming scenarios for players” as they move around the real world with their phones searching for fictional *Pokémon* animal characters, capturing characters, hatching eggs, and leveling up in the game (Wagner-Greene et al, 2017, p. 35).

The aim of this thesis is to examine how aware and how well a sample of undergraduate students at the University of Ottawa who self-identified as regular players of *Pokémon Go* understand and perceive the extent to which their behaviour during gameplay is subject to nudging practices. The central research question guiding my project is:

² Niantic Inc, is a US-based software development company that was created within Google in 2010 under the name Niantic Labs. In 2015, it became an independent entity; a move that coincided with the Google being restructured under Alphabet Inc. See, <https://nianticlabs.com/?hl=en>

³ As of 2025, *Pokémon Go* has made over \$8 billion in revenue and continues to be the highest-grossing geolocation game in the world and continues to generate over US\$500 million annually. Niantic maintains a \$9 billion valuation in 2025. See PocketGamer (2025), Tracxn (2025), and Tafradzhiyski (2025).

⁴ This source compiles and calculates data from a variety of database and usage trackers and is updated monthly. It offers an estimate reflecting real, live data about *Pokémon Go* and app usage.

How do regular users of Pokémon Go understand, navigate, and respond to the nudging practices employed in this game?

In seeking to address this question, the thesis investigates the three following sub-questions:

1. *Do players understand how, and the purposes for which, the data they generate when playing Pokémon Go is used?*
2. *What do players sense when their behaviour is being guided in particular ways while playing Pokémon Go?*
3. *How do players feel about the perceived costs and benefits associated with trading their data in exchange for access to gameplay?*

1.4 Structure of the Thesis

This thesis is divided into five chapters. This first chapter has offered an introduction to the research topic, providing an overview of the context, historical background, and significance of the project. It also set out the central research question and sub-questions guiding this undertaking. Chapter 2 an overview of key theoretical perspectives about the ways in which digital technologies shape, represent, and commodify individuals' identities. Chapter 3 outlines the research design and methodological approach used to investigate the central research guiding this project and presents the observations that emerged from the first part of the discussions with the individuals comprising my research sample. Chapter 4 presents the observations emerging from the participants' responses to questions pertaining to their levels of awareness about Niantic's data collection practices in relation to *Pokémon Go*, their perceptions of the fairness of exchanging personal data for access to gameplay, and what can (if anything) they believed could be done to address any related concerns. Chapter 5 concludes the thesis. Here, I respond to the sub- and central research questions that guided my research and comment on the contribution I believe the observations emerging from my project make to advancing the understanding of nudging.

2 Individuals Identity Formation Online

The discussion in this chapter provides an overview of key theoretical perspectives about the ways in which digital technologies shape, represent, and commodify individuals' identities. It is divided into six sections. I begin by reviewing perspectives about identity online and agency that accompanied the emerging internet and World Wide Web from the mid-1990s into the early 2000s. . Section two looks at the shift towards approaching identity construction through the lens of personalization, algorithms, and identity profiling. Section three examines how algorithms and the design of digital spaces combined with nudging can guide user behaviours towards ends that favor the interests of platform owners. Then, section four considers the rise of surveillance capitalism and implications of collecting analyzing individuals' personal data. In section 5, I set out the central research question guiding my thesis. Section 6 concludes this section by summarizing the chapter and setting up the methodological chapter.

2.1 Exploring Digital Identity: The early days

Throughout much of the mid-to-late 1960s into the 1970s, Marshall McLuhan's (1964) famous quip "the medium is the message" offered a dominant mainstream lens for understanding the impact of media-centred technological innovations on identity, communication, and society. According to this view, it is the dominant communicative medium of an age (e.g., computer networking) that has a transformative impact on society, not the content that is disseminated through the medium. A related concept McLuhan coined during this period was global village, which he used to refer to the idea that electronic media, television in particular, generated community-oriented interconnectedness, "bringing all social and political functions together in a sudden implosion" that increased "human awareness of responsibility to an intense degree" (McLuhan 1964, p. 7). With the mainstreaming of the internet and the World Wide Web in the mid-

1990s, McLuhan's ideas took on a renewed salience, directly and indirectly influencing many optimistic prognostications about how the internet would transform the world (see, for example, Bimber 1998, Castells 1998, 1997, 1996, Raymond 1999, Shapiro 1999).

Throughout the 1990s into the early 2000s, research examining agency online tended to focus foremost on identity presentation and online exploration of the self. Drawing from his experiences as a member of an online virtual community known as the WELL,⁵ Rheingold (1993) wrote about an emerging form of digitally mediated social life, or virtual community, that afforded individuals the ability to both enable and constrain self-presentation by experimenting with their names, avatars, and profile personalization. Despite being a text-only environment, the WELL enabled individuals to experiment with their identity and, in so doing, manifest "different identities in several different kinds of places" (Rheingold, 1993, p. 134) and contribute to the ongoing evolution of its online spaces. Indeed, Rheingold (1993) went so far as to posit that the rapid pace of technological advancement specifically, that pertaining to computers and computer networking - created such a sense of disconnect between citizens and the digital transformation taking place around them, that emergent social computer communications networks were, ironically, enabling a "recapture [of] the sense of cooperative spirit" (p. 96) and sense of society.

Here, one observes echoes of McLuhan at two levels. First, Rheingold maintained that the medium of an online discussion forum enabled people to "exercise new identities, and their new identities affirm the reality of the scenario" (Rheingold, 1993, p. 129) thereby interconnecting people in online spaces through the shared exploration of self. In other words, it is the medium that shapes the individual's experience and enables the exploration of identity. Second, he posited

⁵ The WELL is an acronym for *Whole Earth 'Lectronic Link*, is a text-based virtual community that was launched in 1985. Within the WELL, user can chat with others, engage in forums, and discuss a wide variety of topics. The platform remains active today. See, Ellis et al. (2004), Hafner (2001, 1997), Rheingold (1993), Turner (2006).

that the interconnectedness afforded by the medium was “similar to the way previous media dissolved social boundaries related to time and space,” and perhaps, more importantly, “the latest computer-mediated communications media seem to dissolve boundaries of identity as well” (Rheingold, 1993, p.128).

Turkle (1995) also examined how human computer interactions in the then new Internet environment was fomenting re-evaluations of how people thought about identity. As she saw it, an exploratory lens for online presentation could manifest itself through: (i) the version of the self that one chooses to be when online; (ii) the selections one makes to create a personalized virtual environment; and/or (iii) moral and ethical choices one makes when engaging online with others. For her, unexplored aspects of the self can drive individuals to test new or multiple identities online. From this perspective, one’s experience online is constructed by participating in or ‘cycling through’ different versions of the self either distinctly or simultaneously. For our purposes, a noteworthy feature of her writing during this period is the emphasis she placed on the user’s choice in constructing their virtual experiences by ‘reconstructing’ any version of their identity “on the other side of the looking glass” (Turkle 1995, p. 177).

For example, she points to finding networks of like-minded individuals and similar social circles within internet social spaces as a means by which individuals both enact and further develop online agency. The underlying premise here was that in creating their personalized virtual experience, users connect more personally with what they consume online (e.g., the platforms they participate in, the games they associate with, or the characters they personify).⁶ In contrast with

⁶ Writing a decade later, Zhao (2005) who examined online identity construction in online environments during the early 2000s, advanced a somewhat more tepid view of users’ agency. For Zhao, one does not simply create their own personalized virtual experience because fitting in and self-identification with online social environments is a product of identifying the self within a narrative - i.e., “others do not know us unless we tell them something” (p. 397).

the stronger technologically determinist elements of McLuhan's 'the medium is the message,' Turkle acknowledged the significance of the medium, but perceived individuals as having the power to redesign politics and economic life within the medium "in a language that is resonant with a particular form of machine intelligence" (Turkle 1995, p 177).

Kendall (1998) who looked at online identity performance and its connections with gender, class, and race, placed a heavy emphasis on the salience of individuals engaging in identity play online. In examining the types of things individuals connect with at a personal level online, she identified self-presentation as a key factor comprising one's identity and observed that online community spaces such as forums and video game chat-logs had seemingly transcended their intended purposes, coming to be used ever more for online meeting spaces, pedagogical purposes, and as social environments. For example, in looking at spaces in which class and gender discussions took place online, Kendall (1998) found some of these spaces were developing into both dedicated safe spaces and "escape[s] from perceived or feared working-class existence" (p. 141). According to Kendall (1998), by creating social environments where individuals "have a greater degree of choice regarding their presentation of self" (p. 150), the purpose for these online spaces were transformed from pre-established purpose-oriented spaces into spaces for experimentation and identity play.

Markham (1998), who looked at how individuals experience online spaces and embody them through acculturation, also emphasized the ways in which individuals engage and interact within digital environments. Using an ethnographic approach, Markham identified several factors that either enable or disable an individual's sense of freedom, as well as design features for capturing and maintaining user attention and interest. For example, Markham noted that communication tools that appeared to the user as enhancing their interaction (e.g., privacy

protection options; ability to personalize a digital space), may augment an individual's sense of autonomy online. Markham further claimed that opportunities for personalization and intuitive user interfaces also contributed to users maintaining attention along with granting them more freedom to draw attention to themselves within the interface.

Building on a then emerging economics-oriented approach to understanding online identity construction, Bartle (2003) analyzed the ways in which the design of digital spaces influences social interactions and stimulates economic transactions. Focusing on processes of commodification in digital games, Bartle (2003) observed that by supporting the selling of virtual goods and/or in-game rewards, certain virtual environments provided players with opportunities to both engage in virtual economies, and to participate in economic transactions. This, Bartle (2003) argued, highlighted the need for better understanding how an individuals' capacity to explore their identity intersects with economic incentives afforded by virtual spaces. To this end, Bartle's (2003) position served as a precursor for considering digital advertising through the lens of the individual insofar as he identified digital spaces as a mechanism for influencing social interactions and stimulating economic exchanges.

In line with the idea of shifting the focus towards how participation in virtual spaces could be tied to business exchanges, Gee (2003) investigated the relationship between in-game content and valuing the user's experience in a context wherein game developers were experimenting with the idea of games never ending so long as players paid a fee to keep them going. Gee noted that players' sentiments leaned towards the belief that game developers wanted users to spend as much time as possible playing, which, in turn, would have them spend more money on in-game rewards and digital content. The findings from Bartle (2003) and Gee (2003) are noteworthy for the

purposes of this thesis because they are illustrative of early 2000s postulations about ways in which digital spaces can be rendered more profitable at the expense of users.

Throughout the late 1990s into the early 2000s, notions of leveraging self-identification as a means of attracting users' attention in online environments was not limited to online gaming. Indeed, the idea of leveraging identity in media environments to attract potential consumers extended to many communication technologies that pre-date the internet and World Wide Web. For example, writing in the mid-1970s, Ball-Rokeach and DeFleur (1976) argued that audience dependency on media information was a key condition for interactivity. Developing the idea of media dependency theory, these authors maintained that the more dependent an individual was on the media content they consumed, measured in terms of the of social functions provided by that content (e.g., entertainment, information), the more capable media providers were of influencing that individual's behaviour. The underlying premise here was: Given that individuals use media to satisfy certain social needs, the identification of such needs enables advertisers to exploit these desires for both commercial and non-commercial gains.

Echoing these ideas some twenty years later, Ducoffe (1996) argued that, despite the lack of knowledge about whether existing off-line advertising practices would and/or could be successfully transferred to the Web, the ability to take advantage of selectivity in delivering more relevant advertising online to users held much promise. He maintained that instead of viewing an individual's online experiences as involving the use of tools to construct an identity for themselves, advertisers might generate revenue streams by employing users' online data trails *to construct their identities for them*. In comparing the value of advertising online versus through traditional media channels, Ducoffe (1996) found that the value in advertising stemmed from the expectations about the offering itself, "from the experiences accompanying the exchange, and from the residual of

having engaged in the behaviours necessary to achieve the exchange” (p. 23). In so doing he drew attention to the ways consumers identify with, experience, and derive value from advertising.

The perspectives outlined up to this point in the discussion illustrate some of the ways in which digital environments were deemed to influence individuals’ identity and communication in the 1990s and early 2000s. Despite having been mainstreamed almost half a century earlier, the influence of McLuhan’s (1964) the medium is the message quip continued to resonate at the end of millennium, impacting upon how digital spaces were understood and investigated. The work of Rheingold (1993), Turkle (1995), Kendall (1998), and Markham (1998) helped shift the bar away from some of the more technologically determinist aspects of McLuhan’s thinking by exposing the complex and fluctuating nature of identity online. Specifically, the myriad nuances associated with identity, self, self-presentation, and interaction, as well as the different guises these concepts take on in online environments. Later research from Ducoffe (1996), Bartle (2003), and Gee (2003) intersected with these ideas, calling attention to how identity in the digital domain intersected with the economic incentives afforded by online spaces.

The discussion in the next section looks at how, as the 2000s progressed, creators of digital spaces embraced online identity experimentation as a means by which to generate economic profit through processes of personalization, curation, and identity profiling.

2.2 Personalization and Profiling

Themes of personalization and self-identification within online spaces have, since the late 1990s, informed the evolution of interactive video games. Granic et al., (2020), for instance, highlight how video games and other digital media have the capacity to impact adolescent narrative identity⁷

⁷ Narrative identity refers to the idea that individuals construct internalized and evolving autobiographical narratives of the self which culminate ideas of their perceived past, present, and potential future. This narrative, whether healthy or unhealthy, becomes the way we see ourselves and our lives, *and is* the overarching narrative that guides our perception of purpose. See, McAdams (2001) and Singer (2012).

development by enabling players to experience ‘elaborate’ identity narratives that connect their game play with their offline experiences. Other research into the social aspects of gaming also highlights the evolution of individual game components aimed at better connecting online players with their offline selves. For example, and despite being separated by some 15 years, both Murphy (2004) and Øverby and Audestad (2019) emphasize the importance of creating interactive experiences and manipulating system dynamics as well as in-game strategies in order to have games connect more personally with players and, thereby, maintain their attention for longer durations of time.

Paralleling these ideas, Jenkins (2006) examined how media spaces were being strategically adapted over time to augment user engagement and participation. Specifically, he highlighted the ways in which fan-centred interactivity expanded from the early decades of cinema and television, to give users more opportunities for participation in engaging with media content. Jenkins argued that in the first decade after the internet was mainstreamed, digital media shifted from passive media, or spectatorship, to being highly participatory, with users becoming active producers of content alongside the original media content creators and, in turn, reshaping audiences’ relationship with the media they consume. Echoing Turkle (1995), he highlighted the importance of users developing a sense of community within digital spaces and identified ways in which online spaces were changing to incorporate more personalization, as well as self-identification, in what was being presented to users.

In their examination of how youth experience varied in real life and online settings, Ito et al. (2009) focused on the effects of personalized digital environments, particularly among younger audiences. They highlighted how younger users were increasingly using digital mediums to form and maintain connections that, in turn, shaped their development as individuals and as community

members. A good example of this is how some individuals use instant messaging communications tools to experiment with their identity by exploring new friend groups or interests, while also using it to maintain connections with existing real-life peers. Ito et al. (2009) argued that having the autonomy to pursue any topic or any version of the self through a non-formal setting promoted healthy identity formation and learning processes. Their research also highlighted how users may use their digital identities as an outlet to express ideas based on real-life experiences, thereby giving an outlet to their authentic selves.

Baym (2010) offered an alternative perspective about the authenticity of digital connections, arguing that online identity is complex, and, in its vast complexity, identity play online does not necessarily offer an “authentic” outlet for the self. She posits that digital environments blur traditional social boundaries, making identity formation more complex and fluid than in offline contexts. Rather than expanding the self, Baym (2010) sees online identity construction as creating a new version of the self that is not necessarily authentic. That is, individuals may not necessarily identify offline with the versions of themselves portrayed online. In advancing this claim she cites how online relationships turn into offline relationships much less frequently than offline friendships turn into online ones. Baym (2010) posits that the temporal structure of digital media which pushes individuals towards continuous connectivity, raises questions about what it means to have an authentic experience precisely because the “identities and new connections people construct online” (100) become just as real and impactful as offline experiences.

More recent research about identity in digital contexts has shifted away from narratives suggesting “a straightforward declaration of self-identification or intended performance,” toward notions of identity profiling and algorithm-based identity construction (Cheney-Lippold 2017, p.

17). One observes two distinct perspectives regarding the notion of algorithmic identity; one focusing on the construction of individuals' identities by external forces for economic purposes (see, for example, Cheney-Lippold 2017; Zuboff 2019, Huberman 2022, Cousineau et al. 2023) and another emphasizing the role of user agency, feelings, and informed decision-making in online environments (see, for example, Marwick & Boyd 2014; Gillespie 2018; Burgess et al., 2022, Ruckenstein 2023). The former zeroes-in on the ways in which identity is constructed on behalf of individuals, focusing on the “hundreds of different companies and agencies identifying us in thousands of competing ways” (Cheney-Lippold, 2017, p. 18). Here, the onus is placed on how commercial interests use data analytics to construct individual identities to predict the types of products and services individuals connect with their sense of self. Cheney-Lippold (2017, p. 17) defines this type of profiling as “a declaration by our data as interpreted by algorithms.” It alludes to the endless algorithmic categorizations being made on behalf of any person, where “who we are in the face of algorithmic interpretation is who we are computationally calculated to be” (Cheney-Lippold 2017, p. 18). Such profiling has the ability to affect offline behaviour including the guiding of purchasing decisions and other activities (Li & Li 2022; Reuille-Dupont 2023; Voorveld et al. 2024; Zuboff 2019).

Perspectives emphasizing the role of user agency and informed decision-making in online environments offer an opposing lens through which to understand identity construction online. Here, the onus is placed on the individual, and their capacity to understand, navigate, and make educated judgements about their privacy and other matters within digital spaces. For example, Marwick and Boyd (2014) draw from Tufekci's (2008) research about individuals' self-regulation of information disclosure online to highlight how American society grants adults the right to monitor teenagers' behaviour and invade their personal privacy. In their study of how youth in the

United States negotiate privacy within online environments, Marwick and Boyd (2014) argue that adults often tend to undermine younger peoples' ability to protect their privacy, drawing attention to the variety of strategies teenagers use to regain control over what personal information those around them can access online. , This, according to them, causes American youth to be "less disturbed by abstract invasions of privacy by government agencies and corporations than the very real and ever-present experience of trying to negotiate privacy in light of nosy parents, teachers, siblings, and peers" (Marwick and Boyd 2014, p. 1056)

On a similar note, Gillespie (2018) argues that individuals play a dominant role in shaping their own online experiences and such that participation comes with responsibility. He argues the purpose of digital platforms is to moderate content for users by removing content, making recommendations, and creating personalized suggestions. It is the user's responsibility, on the other hand, to choose freely whether or not they will be engaging with this content. In advancing this position, he places the onus on user to express or exercise their need for the owners of online platforms to improve privacy policy. Drawing from examples of Google's auto-complete function and YouTube's popularity algorithm, Gillespie (2018) maintains that news feeds and personalized recommendations become a commodity that individuals actively contribute to shaping. This view places agency squarely with the individual insofar as the user is seen to also benefit from a more flexible, personalized experience.

Given my desire to better understand how user behaviour and identity formation online can be manipulated, it is perspectives that focus on the construction of individuals' identities by external forces that are of particular interest for the purposes of this thesis.

2.3 Nudging and Algorithmic Profiling

Within online environments, nudging techniques typically involve the use of such things as framing, colors, specific words, and default mechanics as a means of encouraging user decisions in particular directions. This process is known as choice framing and, according to Zuboff (2019), is highly manipulative insofar as it offers opportunities to exploit decision making by guiding users towards specific choices, while also making these choices appear beneficial to the user. In their examination of nudging and online user privacy across consumer-facing websites and popular mobile applications, Tahaei et al. (2021, p. 573), for instance, found an increasing pattern of nudges including the implementation of preselected default options pertaining to the collecting of location data, the displaying of personalized ads, and limiting restrictions on the types of ads; all of which that persuaded users into making decisions favoring the platforms examined.

By contrast, Rodríguez et al. (2022) present nudging as a positive light, suggesting that in some contexts it can serve as an intervention mechanism that is advantageous to individuals. Focusing on online learning platforms, they argue that in such contexts nudging can contribute to both preserving learners' freedom of choice and improving their performance and satisfaction. Investigating the use of nudging as an educative instrument they found that both learners' moods and the likelihood of their continuing a course in accord with the number of nudges received.

In the case of *Pokémon Go*, these mechanics function as something called 'choice architecture whereby similar interventions gently steer players' behaviours. Focusing on this game, Cacchione et al. (2017) show how core features within *Pokémon Go* operate as choice architecture rather than simply game features. They argue that GPS-based mechanics anchor context-aware prompts (e.g. location-triggered alerts, sponsored *Pokéstops* at specific locations) that encourage movement at specific times, while personalization adapts tasks and rewards to make prompts feel

a part of users' existing gameplay, and customizability (e.g. editing avatars, adding friends, and routes) deepens identification, making prompts more persuasive. Taken together, these mechanics preserve freedom while shifting the probability of players engaging in specific actions and exemplify an instance of nudging at a larger scale. They posit that GPS, personalization, and customizability can be repurposed for mobile learning environments such that these types of cues can function as enjoyable stimulant to keep learners engaged in various activities.

Similarly, Jesse et al.'s (2021) study of the effects of nudging on web-based recipe platforms found that nudges influence user behaviour by contributing to time saving in decision making, as well as increasing users' confidence and satisfaction in the choices they make. In this context, nudges existed as tweaks to how choices were presented (e.g. default sorting of food by most popular or healthier), salience cues (e.g. prep time, calorie tags), and visible social scores (e.g. stars of reviews). They found these cues shortened search times and tended to funnel users towards highlighted options, thereby shaping food choices. To this end, Jesse et al. (2021) found users' confidence and satisfaction increased because goal-relevant attributes were more visible, giving them further confidence in re-using the platforms for future decisions. These findings lead them to conclude that nudging can be effective in steering online users to specific choices as well as guiding them away from other choices. Djurica and Figl (2017), who performed an eye-tracking experiment to understand how users navigate nudging techniques online, found nudging practices contributed to users' opinions and satisfaction regarding different purchasing opportunities. In their study, they exposed participants to common online nudges (e.g. pre-selected defaults on product options, time-limit prompts, recommended product badges) to see where participants' attention was directed. They found these cues redirected the participants' attention and choices insofar as they tended to fixate earlier and for longer on the nudged items, compare fewer alternatives, and be

more likely to opt for the pre-selected or time-limited options. The nudged participants also tended to report higher satisfaction rates with their selections. Together, these two studies are illustrative of the capacity for nudging to guide and sway user behaviour while simultaneously maintaining user satisfaction and fostering feelings of agency with their decisions.

Zuboff's (2019) analysis of data extraction, prediction, and behavioural modification in platform economies suggests that a fundamental shift has occurred in how user behaviour is conceptualized and operationalized. According to Zuboff, earlier scholarship treated user data as largely exploratory and generally lacking in significance, whereas contemporary organisations have shifted to become increasingly data-driven with the aim of calculating and predicting user behaviour to monetize it. As Zuboff (2019) puts it, modern use of behavioural data has created a 'reality business,' where aspects of human experience are claimed as raw-material supplies and turned into monetized behavioural data. Examples of this include using specific or personalized wording on purchase prompts that are targeted to users' preferences, to timing the moment users see purchasing opportunities, to shutting off digital system features when a payment is late. At issue is not simply that users are targeted more seamlessly and strongly, but that prediction and behavioural modification become interconnected mechanisms that fuel economic incentives while shaping individuals' behaviours. Of interest here is the focus of those running digital platforms on creating a seamless integration of data-driven decision-making under the guise of 'personalization' for the user. For Zuboff (2019), contemporary virtual spaces mark a new era in "the intensity, density, and pervasiveness of social comparison processes" (p. 589) wherein identity formation becomes a work in progress that is conditioned by the algorithms with which users interact.

Cheney-Lippold (2017, p. 211) contends that during the 1990s little consideration was given to how research and discussions about the uses for users' data might be worth more in value

than the expansion of e-commerce, messaging platforms, and search engines. Today, all of our online choices are actively measured and selected by means of attention, engagement, and clicks (see, for example, Jung A.-K. et al, 2020; Instagram, 2021; Covington, P, Adams, J. & Sargin E., 2016). Cheney-Lippold (2017) argues that the value placed on extracted user data for commercial and other predictive purposes is problematic because data elements are continuously “aggregated, cross-referenced, and algorithmically analyzed to produce knowledge about [one’s] life” (p. 37) in ways the general user does not comprehend. For him, profiling constitutes “a form of control” wherein data profiles are algorithmically constructed to make predictions about users’ behaviour without their awareness or consent (Cheney-Lippold 2017, p. 45). At issue here is the difference between algorithm-based identity construction that creates an intangible version of the self through the tracking and measuring of available online data versus identity profiling wherein the intangible algorithmic self is interpreted and categorized by algorithms. Seen through this lens, identity formation online is a process involving third parties constructing identity on behalf of, and almost separate from, the individual. To this end, Cheney-Lippold (2017) urges caution so as to avoid sleepwalking our way into accepting “a world where not only is almost everything surveilled, but that surveillance is rarely, if ever, felt” (p. 54).

In distinguishing between the user as an intangible being comprised of collected data versus a real person, Cheney-Lippold introduces the concept of the ‘dividual’ to refer to the replacing of the individual with a proxy that is continuously created and re-created through the data they produce. As he puts it, the ‘dividual’ encompasses components of identity spanning from broad categories such as gender, race, and citizenship to narrow online activity tendencies that become “nonlinearly connected to an endless array of algorithmic meaning,” and which transform a person into measurable information (Cheney-Lippold, 2017, p. 44). Put simply, a ‘dividual’ is the

operationalization of the user as data. This separating of the individual from their identity denies individuals the ability to exercise agency in relation to how lives are aggregated and categorized as data, and in how this data is subsequently used. As he sees it, the constant recalculating and infinite replicating an individual's identity as individuals, coupled with the capacity of profiling algorithms to continuously redefine knowledge enables large technology companies who own these models to accumulate more and more power over people's daily lives.

Mobile applications are easily accessible, often location-dependent, and event-driven making them especially useful when it comes to collecting and processing data to create individuals. These apps constantly translate a variety of data spanning movements, timings, device signals, and myriad actions taken on a mobile device into real-time algorithmic profiles that can subsequently be acted upon. Against this backdrop, Pokémon Go provides an ideal case for examining how data that is collected about users can be aggregated and targeted across any number of situations.

Pokémon Go is a highly successful, critically acclaimed game⁸ with a track record of reporting high levels of user engagement year after year.⁹ However, Zuboff (2019) is critical of its capacity to “herd collective behaviour” (p. 400) toward real-life consumer behaviours without players' awareness. Highlighting deals struck between Niantic and McDonalds, Starbucks, and Sprint - to name but a few - Zuboff (2019) argues that the combination of in-game dynamics and augmented-reality in *Pokémon Go* “operate[s] to herd populations of game players through the real-world monetization checkpoints” (p. 405) nudging them towards predetermined areas, such

⁸ Media reports have followed the game's success throughout the years since its launch, often proclaiming it as the most successful mobile game in history and praising its achievements. Its most profitable year to date was 2020-21. Multiple outlets report that the game generated more than \$1 billion in 2024 and still serves approximately 30 million monthly players. See, Orru (2025), Chamary (2018), HT Tech (2021).

⁹ *Pokémon Go* has also made history in terms of player engagement by consistently maintaining record-breaking engagement rates since its launch in 2016. See, Ferrari (2020), Iqbaal (2022), ActivePlayer (2025), McNear (2021).

as restaurants and businesses, so they may spend money while playing. Specifically, the promise of in-game outcomes serves to guide players towards the outlets of commercial entities with whom Niantic has advertising contracts. She contends that the creation of a social gaming community based on real-world action has set a precedent for behavioural modification in video games.

As Zuboff (2019, p. 383) sees it, by “tuning, herding, and conditioning” players without their knowledge *Pokémon Go* goes further in pursuing behavioural modification for commercial purposes than other virtual games that also aim to have users connect and personally identify with in-game content.¹⁰ In line with Cheney-Lippold’s concern, her apprehension rests in the notion that, when identity is constructed on the individual’s behalf, behavioural modification influences one’s personal narratives and sense of self. For her, the so-called digital dream of knowledge being democratized via inter-networking has been replaced by the nightmare of behaviour being judged and modified in specific directions by the executing of subtle algorithmically mediated actions aimed at keeping users dialed in and ensuring the continued provision of raw data so as to meet commercial ends.

Echoing this view, Arafan’s (2021) also investigated behavioural modification and commodification in relation to *Pokémon Go*. In applying a human-computer interaction framework to the game, he found many elements of its design, including placement of in-game features, incentives to play, and ease of certain in-game mechanics, directly affect user behaviour. For example, Arafan identifies how Niantic generates revenue from its players through the strategic placement of in-game rewards in real-world locations and calls attention to additional sources of in-game spending such as players purchasing add-ons to increase their likelihood of catching better *Pokémon* and receiving rewards. Additionally, he highlights how the in-game mechanics create a

¹⁰ While Zuboff does not explicitly state what alternative games she is referring to, she does reference *Ingress*, an augmented reality game created by Niantic that preceded *Pokémon Go*.

false belief for players that the game generates in-game rewards completely at random without nudging for certain behaviours. Based on his observations, he argues that the use of predictive modeling in *Pokémon Go* generates both revenue and market control with players providing a continuous feedback loop back into the data to be calculated as they play and algorithms constantly “perform[ing] calculations to be aggregated as behavioural data” (Arafan, 2021, p.10). At the same time, users have no vantage point from which to observe and assess the economic and political powers controlling their experience. As he puts it, the game rewards players using “in-game mechanics encouraging more frequent gameplay,” while also nudging players towards certain locations in the process (Arafan 2021, p.33). He labels this process ‘evil nudging’ because players are nudged in directions that directly benefit Niantic rather than the players themselves.

In contrast to the position taken by Zuboff (2019) and Arafan (2021) regarding the use of user data within *Pokémon Go*, other observers suggest nudging offers potentially positive socio-cultural consequences. In their examination of the information processing strategies of users on social media platforms, Koroleva et al. (2016) argue that *Pokémon Go* represents a leap forward in interactive game technology insofar as it was the first game to both implement augmented reality on mobile devices and to act as an integrator of social, physical, and virtual spaces. For them, and despite their recognizing the commercial motivations of the game’s designers, the manner in which *Pokémon Go* merges digital and physical spaces creates personal experiences for players by offering a means for them to safely test themselves and their environments. This, as they see it, offers players a vantage point from which to experiment with their presentation and sense of self.

Kim et al. (2018) identify the popularity of *Pokémon Go* and the desirability of fitting into community as factors contributing to user enjoyment of the game. They note how nudging in *Pokémon Go* increases players’ likelihood of wanting to participate in community and physical

exercise when they otherwise would be less inclined to do so. By the same token, Laato, Islam, and Laine (2020) found that playing *Pokémon Go* could be connected with players' psychological well-being and motivated individuals through enjoyment and desire for social interaction. This said, these authors also acknowledge the game's attempt to market in-app purchases and events to players, describing this marketing as aggressive and potentially mitigating the positive effects of the game.

Taken together, the two visions of data gathering and profiling outlined above are illustrative of the tension that exists between those who approach data aggregation as a process that disempowers and commodifies users for the benefit of platform providers versus those who call attention to the potential benefits of data aggregation for users.

2.4 Surveillance Capitalism & Privacy

Data aggregation, algorithmic profiling, identity construction, and nudging all raise questions about individual privacy and the degree of control users have over third parties collecting their data. Zuboff (2019) marks the Google AdWords team's identification of a means to exploit user search data for purposes of predictive modeling and advertising as a key historical moment in the birth of surveillance capitalism.¹¹ Under pressure to find new revenue sources, Google found a way transforming what until then had been data about users' search-related behaviour that was automatically collected as a by-product of their query activities but which remained unused (i.e., behavioural surplus data) into a means of matching advertisements with keywords (Zuboff 2019). As she puts it, Google discovered "a way to translate its non-market interactions with users into

¹¹ Google created a self-service system called Adwords in the year 2000. It was intended to expand how Google participated in online advertising by linking ads to search queries and making user activity trackable to the success of different ads. This team consisted of less than 10 people in the early Google days, and they were responsible for finding ways for Google to make more revenue through online advertising. Today, Adwords is known as Google Ads. See, Google (2017), Google (2000), and Zuboff (2019).

surplus raw material for the fabrication of products aimed at... its real customers: advertisers” (Zuboff 2019, p. 13). This discovery, she maintains, had two notable consequences. First, it contributed to fostering a social environment wherein, being online results in one’s own identity, choice, and moral agency becoming a work in progress (Zuboff 2019). Second, the accumulating and harvesting of data from individuals' online activities has since come to serve as a means for commercial interests to influence human nature in order to perpetuate the continuous harvesting of ever-increasing amounts of data. This state of affairs, she contends, results in peoples' ability to exercise control over their own lives being impeded at the hands of large technology corporations that seek to exploit this vulnerability and to keep the loop running through such processes as nudging and algorithmic profiling.

In the case of *Pokémon Go*, she contends that the game was not developed from a desire to resurrect a nostalgic children’s game into the ranks of augmented reality, but that it was instead motivated by a desire by Google to reclaim power over the mobile gaming market. To paraphrase Zuboff (2020), *Pokémon Go* was developed through Google Maps and funded by Google and Nintendo. Despite the *Pokémon* franchise being owned by Nintendo, *Pokémon Go* was developed through Niantic Labs. The latter was founded by Google Maps’ vice president and the leader of Google Street View, John Hanke. Hanke also founded Keyhole, a satellite mapping company funded by the CIA, that later became Google Earth.¹² Nonetheless, and as Zuboff acknowledges nostalgia certainly constitutes a key part of the game’s appeal (see also, Tang 2017). The potential for success through popular characters and nostalgia can be seen, then, as having offered the potential for large scalability and actuation, making *Pokémon Go* a good candidate to be played by large numbers of peoples and for third party commercial surveillance.

¹² See, <https://earth.google.com/web>

Zuboff also claims that higher engagement within an online space amplifies an individual's perception of choice which, in turn, amplifies their capacity to have their behaviour and identity influenced by a given online platform without their noticing. Following this claim, Zuboff (2019) argues that platforms purposefully erode users' choice mechanisms while making them feel as though they nonetheless have agency. This erosion of choice is rooted in offering users very specific formulations, verbiage, timing, and order of prompts with the intention of prompting specific responses that are disguised as open choices for the user (Lindstrom et al. 2011, Thaler and Sunstein 2008, Ytreberg et al. 2023).

In looking at the perspective of the user, Hargittai and Marwick (2016) highlight a lack of perceived control and understanding of users' ability to contribute or withhold their personal data from the online platforms they engage with. When users lack knowledge of how their own personal data is used, this can result in a general sense of apathy or cynicism about online privacy, with individuals perceiving privacy violations to be inevitable and beyond their control (Hargittai and Marwick 2016). Similarly, in their examination of perceptions and awareness of privacy across varying social groups, Knijnenburg et al. (2019) identified several factors including gender, age, race, education, sexual identity, and socio-economic status as influencing individual attitudes toward information privacy. For example, they noted that those who are a part of low-income, marginalized, and immigrant communities, as well as individuals who demographically are very old or very young, are more likely to have misconceptions about privacy risks.

Hargittai and Marwick (2016) argue that, when it comes to privacy concerns, people's actual behaviour(s) often contradict the level of concern they express. They coined this phenomenon as the privacy paradox. Some of the factors they identify as perpetuating this paradox include users sharing information online without an adequate understanding of risks or because

they lack the skills to protect their personal information successfully, and users knowing the risks but prioritizing an emotional value¹³ to social media sites over privacy concerns. The findings emerging from Barth and Jong's (2017) investigation of individuals' decision-making processes in determining willingness to divulge private information shed additional light on this paradox. Specifically, they highlight that users may not be aware of the importance of the information they disclose online, or what the consequences of disclosing personal information are. They argue that this leads to users improperly evaluating risk, in part, because the "state of incomplete information prevents users from acting rationally and maximizing benefits" (Barth and Jong 2017, p. 1049). This is noteworthy because it points to a gap in knowledge about both how individuals understand their behaviour online and the potential value of their behaviour as data that is central to the success of surveillance capitalism.

2.5 Statement of the Central Research Question

The discussion in this chapter has examined contending perspectives about the extent to which individuals' online behaviours are a product of their agency or that corporate-driven behaviour modification aimed at enabling large technology players to capitalize on users' personal data. Central to the debate between these two outlooks are the algorithmic profiling techniques and design mechanisms employed within digital spaces to affect individuals' perceptions of acting autonomously. One key mechanism for guiding behaviour that is designed to go unnoticed is nudging. The latter is explained as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler, Sunstein, 2008, p. 6) and works by "triggering or tapping into cognitive heuristics" (Schmidt, Engelen, 2020, p. 2), which are less conscious psychological

¹³ There are many reasons an individual may place emotional value on a social media platform of medium (i.e., enjoyment, connection, addiction, fear of missing out, etc.).

mechanisms than the ones used to reason and justify actions. Nudging practices are integral to the success of *Pokémon Go*.

Pokémon Go's key user base is comprised of individuals between the ages of twenty and thirty, with the top three age demographics being: 21-25 years of age (32.6%), 26-30 (25.4%), and those 20 and under (18%) (Alder, 2023). In Canada, undergraduate university students tend to predominantly fall within the latter age range. Zuboff (2017) suggests that undergraduate university students constitute an ideal participant pool for investigating awareness of nudging online given that their online strategies of self-presentation are indicative of their place within what she calls an existential marketplace. It is with this in mind that this thesis examines how a sample of undergraduate students at the University of Ottawa who self-identified as regular players of *Pokémon Go* understand, navigate, and respond to the nudging practices employed in this game.

The central research question guiding the study is:

How do regular users of Pokémon Go understand, navigate, and respond to the nudging practices employed in this game?

In seeking to address this question, I investigated the three following sub-questions:

- 1. Do players understand how, and the purposes for which, the data they generate when playing Pokémon Go is used?*
- 2. What do players sense when their behaviour is being guided while playing Pokémon Go?*
- 3. How do players feel about the perceived costs and benefits associated with trading their data in exchange for access to gameplay?*

2.6 Conclusion

The discussion in this chapter has provided a review of existing literature and research on varying aspects of individuals' identity formation and behaviour online, including main concepts such as: algorithmic identity, identity exploration, nudging, and surveillance capitalism. The discussion in the next chapter presents the methodological approach used in conducting my study, including a

discussion of the research design, as well as the observations that emerged from the first part of interviews with the individuals comprising my research sample.

3 Designing the Study, Discovering the Players

The discussion in this chapter outlines the methodological approach used to investigate the central research guiding my project and presents the observations that emerged from the first part of the discussions with the participants. The discussion is divided into five sections. The first outlines the research design and rationale of my project. Also discussed in this section are the procedures used in designing the interview protocol for this project and for recruiting participants. In section 2, the demographic characteristics of the participants and their game-relation associations are presented. Section three sets out observations regarding the participants reported gameplay experiences, and six on location and behavioural patterns recognized. Finally, section seven summarizes the key takeaways and sets up the shift into the second section of research findings, more focused on data collection, concerns, and perceived benefits versus consequences.

3.1 Research Design

The goal of this project was to examine how a small sample of undergraduate students from the University of Ottawa who self-identified as regular users of *Pokémon Go* understand, navigate, and respond to the nudging practices employed within the game. Investigating this matter required with the designing of a means for interrogating how the intersections between individual agency and algorithmic identity construction are experienced (and possibly resisted) by individuals who play *Pokémon Go* on a regular basis.

In conducting background research for this project, I came across the works of Pridmore et al. (2019) and Mols et al. (2021), both of whom investigated the attitudes, experiences, and privacy concerns of adults who used specific types of algorithm-heavy technology (i.e., household devices such as Google Home, Amazon Echo, Apple's Siri, Microsoft Cortana). In their examination of data surveillance concerns associated with the use of intelligent personal

assistants¹⁴ at home, Pridmore et al. (2019) used a sample of participants who were staff threat two universities in the United States and one in the Netherlands. They used a survey (n=485) and 17 focus groups as a basis for assessing (n=101)¹⁵ understanding of, and negotiation with, the collection of their personal data from intelligent household personal assistants. Mols et al. (2021) also conducted a mixed-methods study involving a survey (n=325) and 6 focus groups (n=35) consisting of an average of 6 people, with employees of one university¹⁶ in the Netherlands, to investigate privacy concerns associated with at-home personal assistants.

Intrigued by their studies and thinking about how I might go about conducting my project, during the early stages of planning my study I reached out to Professors Jason Pridmore of Erasmus University, Rotterdam and Anouk Mols of HU University of Applied Sciences, Utrecht via email to inquire about their work. Both were gracious enough to share with me the research protocols they had used and to explain the contexts and rationales behind their research methods. Indeed, Professor Pridmore informed me that both studies had relied upon the same data set. Specifically, the 325 survey respondents who had participated in Mols' et al. (2021) study had also been part of the participant pool for his 2019 study. Anouk Mols followed up by suggesting I consult two MA theses, Wohlmacher (2018) and Anissa (2018), that contained the interview guides and the focus group protocol Pridmore et al. and Mols et al. had used in their respective studies.

For their thesis, Wohlmacher (2018) combined autoethnography¹⁷ and semi-structured in-depth interviews with ten German participants recruited from through special interest groups on social media channels to investigate how users understood their experiences with digital personal

¹⁴ The same survey and pool of participants were used in both Mols et al. (2021) and Pridmore et al. (2019).

¹⁵ The focus groups consisted of an average of 6 people each.

¹⁶ The one university selected for Mols et al.'s (2021) study was one of the three in Pridmore et al.'s (2019) study.

¹⁷ Autoethnography can be explained as a self-narrative research approach that places the self within a social context (See, Butz & Besio (2009), Fourie (2021), Reed-Danahay (1997)). Autoethnographies can take many forms, including journals, memoirs, and other mediums.

assistants. Wohlmacher's interview guide comprised 36 questions (see, Appendix A) divided into six categories:

1. Connectivity and integration of the personal assistant
2. Motivations and attitudes towards the usage of the personal assistant
3. Daily practices and routines
4. Usability and experiences with the personal assistant
5. Emotions and feelings evolving from the usage of the personal assistant
6. Personal opinion about the future perspectives of the personal assistant as an emerging technology

In ascertaining how Voice Activated Personal Assistant (VAPA) devices influence individuals' behaviour, Anissa (2018) conducted five focus groups, each comprised of four participants.¹⁸ The protocol she employed for the focus group meetings consisted of 27¹⁹ prompts that structured a discussion in accord with three categories (see, Appendix B).

1. General personal and initial technology questions
2. Attitudes and behaviour towards personal assistants
3. Interaction and perception of participants' regarding personal assistants in general
4. The future of technology

Mols et al.'s (2021) study drew from methodological elements employed in the two above theses in developing their admittedly less structured focus group conversation guide (see, Appendix C). Their guide consisted of some 42²⁰ prompts that structured discussion in accord with eight categories:

1. Introductions
2. Influence of technology
3. Intelligent Personal Assistants on phone

¹⁸ The 20 participants were between 18 and 29 years of age and all were based in the Netherlands.

¹⁹ Anissa's (2018) and Pridmore's (2018) protocol merged their structured questions, conditional questions, and optional prompts. For the purposes of my explanation, I counted all three types of questions outlined in my tally.

²⁰ Mols et al.'s (2021) conversation guide contained activity prompts (which required no discussion), as well as question prompts for participants. Of these questions, the list of prompts was in bullet-point format, with some bullet points listing multiple questions. To simplify my explanation, I counted all bullet-points from their guide which included direct questions (i.e., no non-verbal prompts).

4. Smart speakers
5. Questions Related to an Interactive activity (participants try-out device)
6. Benefits and drawbacks household IPAs
7. Internet of Things
8. Inventory of other ideas or topics that came up during conversation

I relied on materials from Wohlmacher (2018), Anissa (2018), and Mols et al.'s (2021) as a basis for developing the interview protocol employed for my project. The rationale for doing so was guided by the importance I attached to the participants being able to expound upon their personal experiences with *Pokémon Go* and their awareness of its connection to issues of nudging and algorithmic identity construction. Put simply, given the centrality of nudging to the central research question guiding my study, the use of qualitative semi-structured interviews offered a methodologically sound approach to investigating the participants' views and for providing opportunities for them to offer detailed accounts of their ideas and interests.

A semi-structured approach was adopted for the interviews because these types of meetings are ideal for eliciting descriptive responses that enable interviewees to demonstrate knowledge and/or explain their positions regarding the topic at hand (DiCicco-Bloom & Crabtree, 2006). This approach contrasts with structured interviews insofar as it does not involve asking all the participants the same predefined questions in a standardized order. It also differs from unstructured interviews where neither the question nor the answer categories are pre-determined. The approach adopted for the interviews I conducted was largely exploratory, with some elements of standard interview research techniques blended into the discussions. The rationale underpinning my approach was that the former, or exploratory approach, is useful in extracting the interviewees' opinions, views, and reactions, whereas the standardized approach is better suited to replicate "psychological 'sameness'" across questions, so that every respondent has been asked the same questions with the same meaning (Oppenheim, 1992, p.67).

In developing my interview protocol, I began by identifying questions from Anissa (2018), Wohlmacher (2018), Pridmore et al. (2019), and Mols et al. (2021) that with little or no modification would be useful in helping me ascertain the participants' perceptions and understandings of various practices associated with *Pokémon Go*. In so doing, I retained four of Wohlmacher's (2018) questions and six of Anissa's (2018) questions that I slightly modified to broadly orient them toward the gaming context. I then proceeded to develop 11 of my own questions that were specific to *Pokémon Go* (n=3), dealt with nudging practices (n=3), and perceptions of data surrounding the in-game features (n=5). In the end, my interview protocol consisted of 21 questions (see, Appendix D), divided across three categories (see Table 3.1).

Table 3.1 Categories of Interview Questions

Wohlmacher (2018): Categories of Questions	Anissa (2018): Categories of Questions	My project: Categories of Questions
1. Connectivity and integration of the personal assistant 2. Motivations and attitudes towards the usage of the personal assistant 3. Daily practices and routines 4. Emotions and feelings evolving from the usage of the personal assistant 5. Personal opinion about the future perspectives of the personal assistant as an emerging technology	1. General personal 2. Initial technology questions 3. Interaction and perception of participants' regarding personal assistants in general 4. The future of technology	1. How do individuals experience behavioural modification within <i>Pokémon Go</i> ? 2. How do players understand the use of their data within their game play? 3. Do players feel there is any trade-off in their data being used?

The first section of my protocol was comprised of five questions aimed at situating the interviewees in relation to the game (e.g., how long they have played the game, how frequently they play, average time spent playing a session, how they discovered the game, thoughts the game entices within them). Section two consisted of six questions that sought to ascertain how the

participants experience nudging within *Pokémon Go*. These questions asked about how the interviewees interact with the in-game incentives and real world while playing the game, and what gameplay elements attract their attention. The next section involved five questions aimed at understanding the participants' positions on, and awareness of, the types of information collected about them when playing *Pokémon Go* and how concerned they were about their data being collected and used by a third party. Section four of the interview protocol consisted of five questions that gave participants the opportunity to expound upon their perceptions of the use of their data, looking at what costs versus benefits they could point to, the justness of the exchange of their data in order to play, and whether they felt there was anything they could do to address any concerns they might have in this regard.

Once my draft interview protocol was developed, I moved to piloting the questions with five personal acquaintances who were familiar with *Pokémon Go*. I conducted two separate rounds of piloting. The first involved my informally interviewing three of my five acquaintances. My objective here was to assess the flow of conversation created by the sequencing of the draft questions. The feedback provided included that many of the questions depended on participants having at least some awareness of data collection and privacy concerns, which could create issues if the actual participants did not have any privacy concerns. During this session I also noticed that the specificity of the wording being used was resulting in some questions eliciting only very brief/short responses. These observations helped me to adjust, and in some instances completely revise the phrasing of some questions to render them more open-ended.

My two other acquaintances participated in the second round of piloting. Here, the conversational flow was improved, and I observed that the reworked questions were leading to more open and frank discussions about the issues raised. Coming out of this second session, I made one

final tweak. Specifically, I decided to prepare additional probes to be used in instances wherein the actual participants might provide only very short responses to the questions asked.

The 23 individuals who participated in my study were all undergraduate students who were enrolled in the psychology program at the University of Ottawa and who self-identified as being regular players of *Pokémon Go*. The main reason for my using this targeted sample was instrumental in nature. The University of Ottawa has a program in place - the Integrated System of Participation in Research (ISPR) program²¹ - that connects researchers from the Department of Psychology and other partner departments (e.g., Communication) with a pool of undergraduate psychology students who earn academic credits by participating as subjects in research studies.²² This program provided me with quick and easy access to a large pool of potential interviewees. To recruit students, I put out a call through the ISPR program including the title of my study, a short description of what the study entailed, and the three inclusion criteria: i) be undergraduate students; ii) be a regular player of *Pokémon Go* (see, Appendix E).

The use of the term ‘regular players’ in my recruitment statement was intentionally vague so as to permit potential participants to self-assess their identity as a *Pokémon Go* player. I was inspired in this regard by Sutton and Knoester’s (2021) study of the relationship between U.S. women’s sport consumption and their self-identified sport fandom participation. For their project, they used participants’ self-identification as part of varying sports fandoms as a research criteria and opted to not implement exclusive prerequisites or requirements that would filter participants on the grounds that a more open approach to inclusion would enable them to effectively probe the

²¹ See, <https://socialsciences.uottawa.ca/psychology/research/participate-research/ispr-student-pool>

²² As per the ISPR guidelines, those who participated in my study each gained a participation credit towards one of their final grades.

views of individuals who self-identified with a specific label.²³

Likewise, Byerley et al. (2022) and Craythorne et al. (2022) also relied on participant self-assessment of eligibility as an inclusion criterion for their projects. In the former, Byerley et al. (2022) conducted research on health measurements, specifically gut microbiome and metabolome, in self-identified ‘muscle builders’ who reported taking protein supplements, versus those who did not. Here, the purpose of allowing participants to self-assess their identity as ‘muscle builders’ allowed the researchers to further cross-examine exercise volume and priorities of the participants once their health measurements were taken, and to see how self-assessment could create variation in the types of ‘muscle builders’ that participated in the study. Craythorne et al. (2022), looked at self-identification in a slightly different way insofar as they sought to understand the self-identified origins and experiences of individuals dealing with body dysmorphic disorder. Here, two types of self-identification were used. First, their sample consisted of individuals who self-reported having body dysmorphic disorder. Second, a key component of their research was the self-identified origins, triggers, and experiences of the participants.

Having determined that self-identification was a viable criterion for participant inclusion in my study, I opted to proceed accordingly.

Since all recruiting was done through the ISPR’s online system, I made myself available for participants to sign-up by adding virtual time slot availabilities, including my contact information for potential participants to reach out with any questions or to gain access to a copy of the consent form. The time constraints of the ISPR’s online booking system meant that I could only recruit participants during a specific range of time for every semester (i.e., studies are inaccessible to students during their exam period and between semesters). In order to

²³ In the case of Roth et al.’s (2023) research, the authors worked with participants who self-identified as ‘highly sensitive.’

accommodate varying student schedules, I made participation in my study available between 7:00 am and 8:00 pm on Weekdays and Weekends.

A key challenge I ran into early on with the ISPR program was participants signing up for my study, and then not showing up at the scheduled meeting time. There were numerous features of the ISPR online booking system which made this more difficult, including:

1. I had no way of getting the contact information of those who signed up to participate.
2. Students could not access their consent forms before our scheduled meeting time.
3. There is no communication with, or penalty for, students who do not show up.
4. There was no way easy way for me to reschedule a missed meeting.

After having encountered these types of challenges a few times, I began using the system's anonymous message feature to ask that individuals who signed up to participate email me before our scheduled meeting time, as a means of building commitment. Additionally, some participants were omitted from the study altogether after meeting for an interview because, upon speaking with them, it was immediately evident they did not play *Pokémon Go* on a regular basis. I sensed they had signed up to participate simply to receive their University ISPR credit.

The meetings took place between April 2023 and October 2024 via Zoom.²⁴ Each interview lasted between 30 to 45 minutes in duration. At the start of the meetings, all participants were asked about: i) how long they had been playing *Pokémon Go*; ii) how frequently, and for how long they played; iii) their playing level and favorite *Pokémon* they had caught; iv) how they first learned about the game; and v) what comes to mind when they think about *Pokémon Go*. The objective here was to make participants comfortable discussing in-game features, and using *Pokémon*-specific verbiage, so they could express themselves freely during the following sections

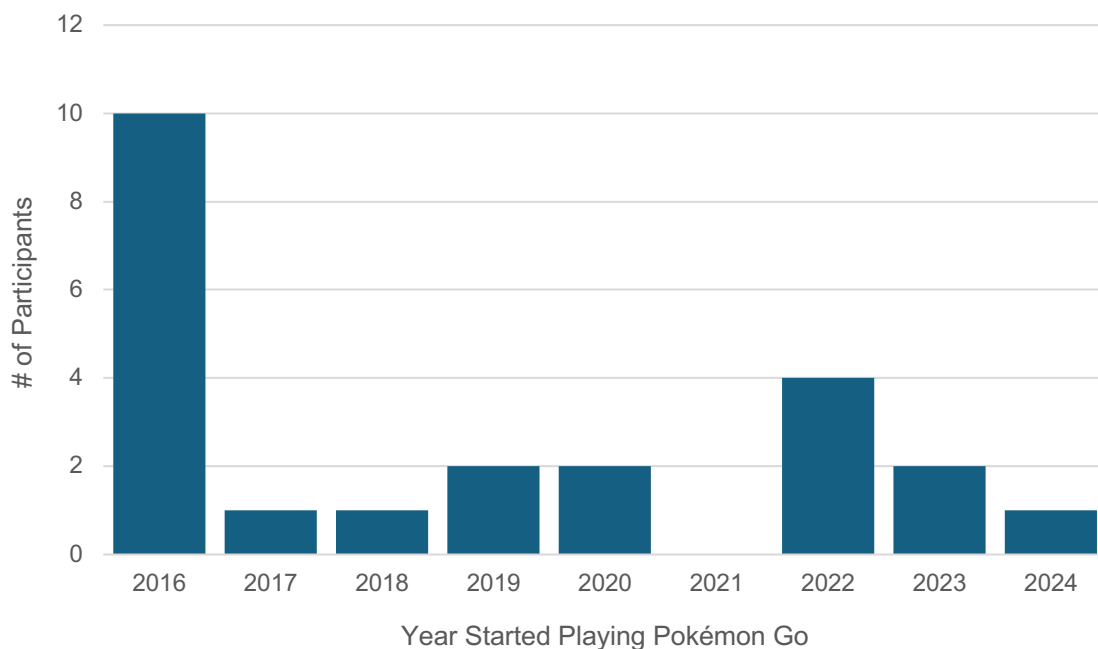
²⁴ There were a variety of personal factors that account for the interviews having been conducted over this extended period of time.

of the interview.

3.2 Participants' Demographic Information and Game-related Connections

The interviews began with me asking five questions focusing on participants' demographics and their perceptions of *Pokémon Go*. Of the 23 participants, ten indicated they had been playing the game since its release in 2016 (see, Figure 3.1). As one would expect, the frequencies of play reported by those comprising my research sample varied widely. Ten individuals reported playing daily or every other day, seven claimed to play three to five times per week, four indicated once or twice per week ($n=4$), and one individual stated they played less than once per week ($n=1$). One individual declined to respond.

Figure 3.1 Years Playing Pokémon Go²⁵



Some 78% ($n=18$) of participants attributed a key factor motivating their frequency of play, including such things as whether there was something to immediately catch their attention ($n=3$),

²⁵ It seems plausible that the absence of any individuals in my research sample reporting having started playing *Pokémon Go* in 2021 may be due to the Covid-related public health measures in place at the time.

the time of year (n=3), what they were doing at the time of deciding to play (n=3), if there were in-game events (n=3), the frequency with which they needed to commute (n=2), their physical location (n=2), whether friends were playing (n=1), and their schedule (n=1). Five participants did not attribute any motivating factors to their play, and one opted not to respond to the question.

When it comes to the time spent playing a typical session, most participants (n=17) reported the duration of their playing time was affected by such factors as whether they were playing during a commute, how bored they were at the start of gameplay, and whether in-game challenges were taking place. Slightly more than one half of the participants (n=13) indicated their playing time constantly varied, with some sessions being relatively short and others longer by comparison. Of these 13, five (n=5) said their playing time usually consisted of sessions lasting less than 30 minutes, four (n=4) reported their playing sessions were usually in the range of 30 to 60 minutes, and one (n=1) said their gameplay sessions usually spanned from one and three hours in duration. The play of the remaining three (n=3) participants reported that their gameplay sessions typically spanned from minutes to multiple hours at a time. Five individuals within the research sample could not specify the duration of their gameplay times and, instead, identified factors affecting their average time of play (e.g., having wi-fi access, number of Pokémon in-game to catch). Only four (n=4) participants reported having relatively consistent average gameplay times. Two of these individuals reported average playing times of 10 minutes, one reported 30 minutes, and one reported daily 60 minute sessions. One participant opted not to respond.

In *Pokémon Go*, players begin at Level One and can progress to a maximum of Level Fifty. For levels one through 39, progress happens by accumulating “Experience Points” or XP, which are earned through general gameplay activities.²⁶ Generally, levels under 20 are easier to attain

²⁶ Gaining XP happens with all basic actions that can be performed in the game, including Capturing a *Pokémon*, evolving a *Pokémon*, checking a *Pokéstop*, Sending a Gift, and more. See, Serebii.net.

because they require fewer XP points and have limited access to the game features. The *Pokémon* community considers level 20 as the threshold for ending the game's tutorials and learning curves (Coulson 2020, GameFAQS 2016). From level 40 onward, progressing through the subsequent ten levels requires a combination of earning XP and completing level-specific 'Research' tasks.²⁷

During the early part of the interviews, participants were asked about their current level in *Pokémon Go*. This was to gauge their claimed experience and engagement levels against their self-descriptions as regular players. Given that the game does not officially assign level categories, I consulted three online *Pokémon Go* resources²⁸ to designate three player levels: Low (Level ≤ 20), Medium (≥ 21 and ≤ 39), or High (≥ 40 and ≤ 51). Based on the latter, fifteen (n=15) participants were categorized as being medium level players, four (n=4) as high level players, and one (n=1) as a low-level player. Of the four remaining participants, three (n=3) either did not answer the question or were unsure of the level they had attained in the game, and one (n=1) claimed to have reached level 5, which does not exist.

During the course of the interviews, it quickly became apparent that having allowed participants to self-identify as 'regular players' likely contributed to what I perceived as a lack of consistency between the game levels a majority of participants claimed to have attained and/or how long they had reportedly been playing on the one hand, and how much they claimed to know about *Pokémon Go* on the other hand.²⁹ Specifically, many participants' perceptions of their

²⁷ In *Pokémon Go*, "Field Research" refers to small daily tasks that players can complete in return for in-game rewards. In the context of levelling up, players must complete a different type of 'Research' including milestone challenges and objectives, such as catching a certain number of *Pokémon*, walking a specific distance within a set time period, winning different challenges, and more. See, [Serebii.net](#), [Eurogamer](#), [Fandom](#).

²⁸ The categories Low-, Medium-, and High-level are the common categorizations used across the *Pokémon Go* community and include a recognition of ascending threshold difficulties from level 20 onward. See, [Serebii.net](#), [GoHub](#), [Gamepress](#).

²⁹ The issue of participants misrepresenting themselves and/or their competencies is a recognised limitation of not implementing exclusive prerequisites to filter participants. See, for example, Schwarz (1999), Podsakoff et al. (2003), Gao et al. (2023).

proficiency or means of engagement tended not to align with the gameplay patterns they reported, whereby newer or lower-level players were sometimes more skilled and knowledgeable about *Pokémon Go* than older and higher-level players.

When asked how they first learned about the game and what prompted them to begin playing, the participants tended to provide similar explanations (see, Table 3.2). Most individuals (n=12) offered two factors, seven participants (n=7) identified only one factor, and three participants (n=3) shared three factors. One participant (n=1) declined to respond. The most frequent (n=12) explanatory factor given regarding how the participants discovered the game centered around childhood nostalgia and was linked to such things as Nintendo-based *Pokémon* mediums (e.g., DS or Gameboy (n=8), the televised series or films (n=3), trading cards (n=3), board games, books, or action figures (n=2)). The second most frequently given explanatory factor was learning about the game through one's circle of friends (n=10).

Table 3.2 Discovering *Pokémon Go*

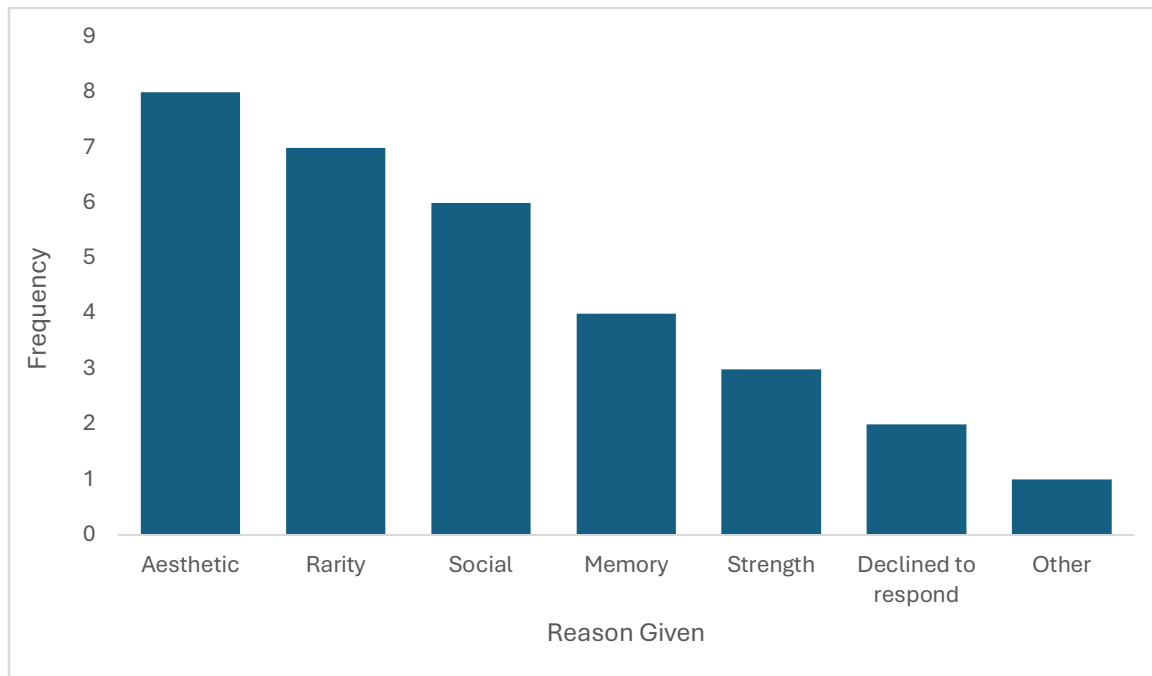
Reason Given ³⁰	Frequency of mention
Nostalgia from childhood	12
Learning through friends	10
Everyone was talking about it	7
Media	6
From a stranger	1
Did not specify	1

Participants were also asked what their favourite *Pokémon* was they had caught, and why it was their favourite. Five factors were reported as being linked to the memorability of capturing a favourite *Pokémon* (see, Figure 3.2). The most frequently cited factor (n=8) was the aesthetic

³⁰ There was no restriction on the number of reasons participants could provide.

features (i.e., visual appeal, design, artistry) of the captured *Pokémon*, followed by its perceived rarity³¹ (n=7), the social elements (e.g., community, friendship, or shared experiences) associated with capturing it (n=6), and linkage with a personal memory or anecdote related to the captured *Pokémon* (n=4).

Figure 3.2 Memorability of Capturing Favourite Pokémon



It should also be noted that in the process of recounting their general experiences of catching Pokémon and the tale of capturing their favourite *Pokémon*, 19 participants alluded to some randomness in the spawning process. This was evident in claims from these participants that the game places *Pokémon* at random (n=10) (e.g. P3 said rare Pokémon tend to spawn randomly; P20 said “It’s all random”), and/or other expressions of feeling that the game is randomized (n=9) (e.g. P7 implied finding *Pokémon* at varying University locations was the result of random spawning).

³¹ Rarity is also associated with perceived difficulty in obtaining a specific Pokémon.

Table 3.3 Categories of Pokémon Types Within *Pokémon Go*

Type	No.	Type	No.	Type	No.
Dark	400	Water	268	Ice**	221
Grass	331	Electric	254	Flying	219
Ground	318	Ghost**	251	Steel**	217
Fighting	296	Fire	236	Fairy	180
Psychic	287	Poison**	225	Normal	157
Rock	271	Bug	221	Dragon**	152

** *Rarest categories of Pokémon types*

Source: [Pokémon Go Hub](#)

In reviewing the responses, I noticed trends in the types or categories of *Pokémon* being mentioned in response to this question. Table 3.3 lists the eighteen categories of *Pokémon* that exist in the game, and how many there are in each category. Two things should be noted here. First, the number of *Pokémon* reported for each category is inflated because spawn mechanics enable a single *Pokémon* to spawn more than one type of *Pokémon*. Second, the number of *Pokémon* in any given category does not necessarily reflect its rarity precisely because some types of *Pokémon* are more difficult to come across in the game than others.³² It also should be noted that *Pokémon Go* currently has less available *Pokémon* to catch throughout the game than the total number of existing *Pokémon* across the franchise's many forms of media.

Of the seven participants (n=7) who noted rarity as a key reason for identifying a particular *Pokémon* as their favourite, two named *Pokémon* that were uncommon but not particularly rare.³³

³² There are a variety of reasons why the scarcity of *Pokémon* is not synonymous with rarity. For example, some *Pokémon* are much less available (i.e., only during certain times of the year or due to spawn mechanics), while others can only be “earned” through limited-time events and special in-game challenges. In other cases, some *Pokémon* numbers may be high because many *Pokémon* have more than one categorization. See, [Pokémon Go Hub](#).

³³ When looking at the rarity in *Pokémon Go*, uncommon *Pokémon* are distinct from rare *Pokémon* because the former can appear irregularly and still be consistently found through regular gameplay, depending on in-game events and location-based spawning. By contrast, rare *Pokémon* are much more difficult to come across when playing due to significantly lower spawning rates, time of year, weather, special events, restrictive conditions and limited biome representation. See, GoHub (2024), Cheska (2025), Palm (2023).

Of the eight participants (n=8) who noted aesthetics as a reason for picking a favourite *Pokémon*, three (n=3) noted rare *Pokémon*, three (n=3) noted uncommon *Pokémon*, and two (n=2) noted easily obtainable *Pokémon*. Table 3.4 presents the frequency at which different types of *Pokémon* and the individual “species” are named.

As the information in Table 3.4 makes clear, the interviewees’ perceptions of *Pokémon* rarity did not reflect this quality in terms of scarcity and is, instead, linked to a number of other considerations including: preference, their own patterns in seeing specific spawn times manifest within familiar or specific environments, emotional or personal attachments to certain characters, and perceived power or aesthetic. This is noteworthy because it suggests the individuals comprising my research sample were constructing their own meanings about value and rarity on the basis of their personal lived experiences.

At this point in the discussions, I prompted participants with a word association exercise involving my asking them what was the first thing that came to mind when I mentioned *Pokémon Go*. The aim here was to get a sense of the intuitive ideas, memories, emotional, and gut-level impressions the individuals in my research sample attached to the game. Here, my operating assumption was that responses to this prompt might complement responses to the other more reflective questions asked later in the interview.³⁴ The participants responded with a wide range of answers that I organised into seven umbrella categories (see Table 3.5).

³⁴ Using word-association can help researchers to understand information from an immediate, less biased lens due to the immediacy through which individuals are urged to respond. See, Rojas-Rivas et al. (2022), Hwang & Kim (2025), De Deyne and Storms (2015).

Table 3.4 Participants' Favourite Pokémon Types and Named 'Species'

Type	Frequency	Pokémon Named	Type	Frequency	Pokémon Named
Dragon**	8	Zekrom, Rayquaza (2), Palkia, Dragonite, Garchomp (2), Guzzlord	Fighting	2	Infernape, Throh
Flying	7	Rayquaza (2), Dragonite, Charizard, Lugia, Gyrados, Scarmory	Normal	2	Snorlax, Lickitung
Psychic	4	Mewtwo (2), Lugia, Cresselia	Ghost**	1	Chandelure
Electric	4	Zekrom, Pikachu, Raikou, Magnezone	Poison**	1	Koffing
Fire	4	Charizard, Chandelure, Infernape, Charmander	Grass	1	Chespin
Water	3	Kyogre, Palkia, Gyrados	Rock	1	Rhyperior
Steel**	3	Melmetal, Scarmory, Magnezone	Dark	1	Guzzlord
Ground	3	Garchomp (2), Rhyperior			

**** Rarest categories of Pokémon types**

Table 3.5 Ideas that Come to Mind Upon Hearing “*Pokémon Go*”

Umbrella Category	Specific Category	Frequency	Total
<i>Pokémon</i> Ecosystem	Pokémon	7	11
	Catching Pokémon	4	
Physical Activity	Walking	6	7
	Activity	1	
Technology	In-game Mechanics	4	7
	Data Mining	1	
	Innovation	1	
	Attention on Phone	1	
Environment	Nature	1	5
	Outdoors	4	
People	Socialization	3	4
	Community	1	
Other	Niantic	1	4
	Time Consumption	1	
	Exploration	1	
	Strategy	1	

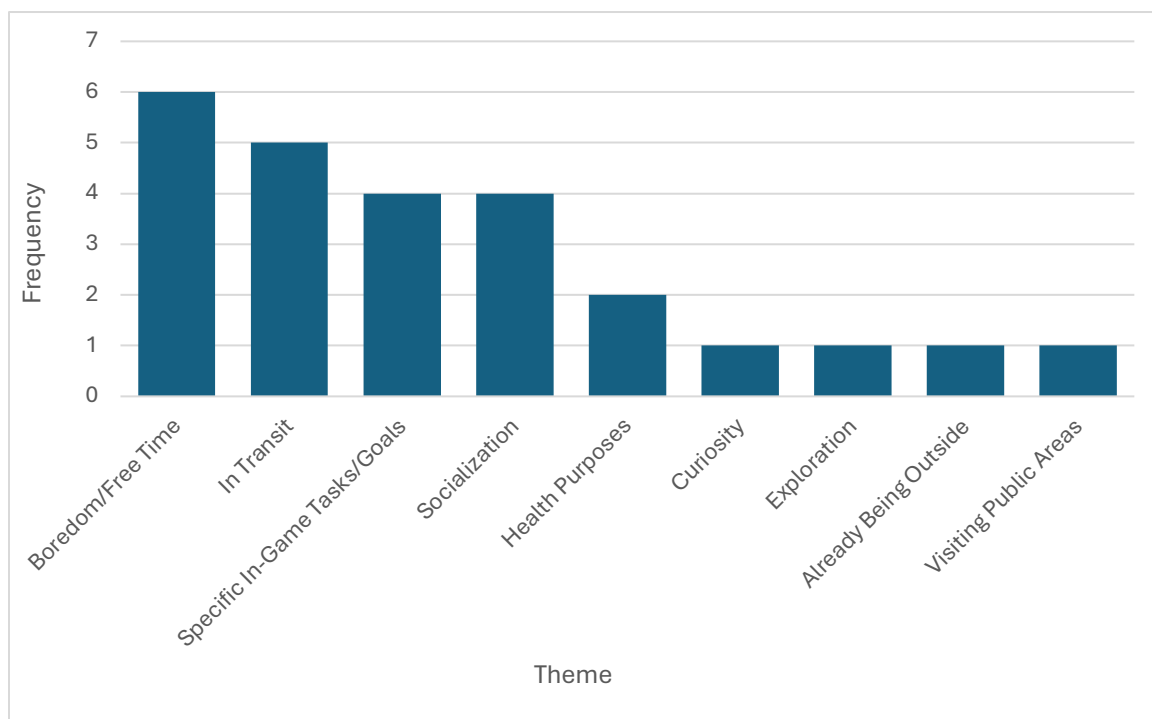
Overall, the observations emerging from the first portion of the interviews revealed that participants’ gut-level associations with, and opinions of, *Pokémon Go* often reflected their emotional, nostalgic, or experiential perspectives and were not necessarily based on game-provided information. To this end, their reported gameplay durations and patterns appeared to have been shaped by a combination of personal factors such as boredom, transit, or availability, as well as perceptions about in-game spawning and rewards.

3.3 Participants’ Experience with Gameplay

To elicit information about the participants’ nudging experiences with *Pokémon Go*, I asked them to walk me through a typical gameplay session. In doing so, I asked them to elaborate upon whether anything in particular could be attributed to their starting a gameplay session, the circumstances under which they played, their perceptions during gameplay, their main goal(s) when playing, and what typically brought their gameplay to an end. Most participants (n=17) identified one trigger

as usually being responsible for initiating their gameplay, five (n=5) noted more than one trigger, and one participant declined to respond. Some relatively consistent reasons given for starting gameplay sessions included boredom and free time (n=6), being in transit to a location (n=5), specific in-game tasks and goals (n=4), socialization (n=4), and health purposes (n=2), curiosity (n=1), exploration (n=1), already being outside (n=1), and visiting public areas (n=1) (see, Figure 3.3). One participant opted not to answer this question.

Figure 3.3 Reasons Participants Started Playing



The participants' descriptions of how they play the game fell into three categories:

- ☐ Situational responses (n=10) that focused on the context or situational environment within which they typically played *Pokémon Go*;
- ☐ Game-Focused responses (n=7) that centered on in-game mechanics; and
- ☐ Situational *and* Game-Focused responses (n=6) that combined both context and in-game mechanics.

Responses to follow up queries about whether game sessions were predominantly planned or spontaneous were almost evenly split, with 12 participants indicating no consistent gameplay routine, and 11 describing a regular pattern or structure to their play.

In the participants' descriptions of how gameplay sessions typically took place, certain recurring factors were observed. For example, 14 participants reported playing *Pokémon Go* more frequently during the school year, whether throughout the day, on campus, or between classes. Two (n=2) participants indicated that they played less frequently during the school year. Another commonly remarked part of gameplay involved checking for in-game rewards, primarily through *Pokéstops* and gyms (n=12). Other in-game elements noted included battling Pokémon, field research, in-game gifting to friends, daily incense,³⁵ and hatching eggs.³⁶

At this point in the interviews, it often seemed that some participants were trying to align the routines they described with views they had expressed about *Pokémon Go* randomly generating in-game content. For instance, 13³⁷ participants associated their gameplay routines with things such as: Turning commute time and travel distance into opportunities to search for in-game rewards (n=9); wanting to play based on their ideas of random reward spawning behaviours (n=8); selecting routes based on where they felt they could optimize rewards (n=6); strategically choosing contexts or times to engage in gameplay in order to get the most out of their efforts (n=6). In all of these cases, participants described trying to deduce patterns or the likelihood of obtaining better rewards in what they had previously identified as a randomized reward system. P20, for example explained that they choose to play *Pokémon Go* during long bus- or car-based transits

³⁵ Daily incense is a virtual item in *Pokémon Go* that players can use at any point of their choosing to guarantee attracting additional *Pokémon* to their area for a period of fifteen minutes.

³⁶ Hatching eggs within *Pokémon Go* refers to the act of incubating a virtual egg containing a mystery *Pokémon*. The egg unlocks (or hatches) once the player has walked a predetermined distance.

³⁷ Thirteen people referenced randomness when describing gameplay routines; Because several offered more than one rationale, the category totals exceed 13.

because since the game randomly generates rewards while walking, it rewards them for appearing to walk longer distances even though they are not really walking; hacking the algorithms to heed better in-game rewards. Likewise, P23 conveyed that public locations had better in-game rewards and, as such, they typically opted to play more often in public areas to maximize in-game spawns.

It was also at this point in the interview that in their responses that expressions of having a sense of feeling as though they were acting autonomously during gameplay began to emerge from the participants' responses. For example, P10 explained that they felt the in-game map changed daily, encouraging exploration of new areas, yet emphasized that they were ultimately responsible for deciding where to go. P12 likewise referenced three routes they consistently took during gameplay that heeded 'good' in-game rewards while emphasizing they were the one responsible for deciding which route to take.

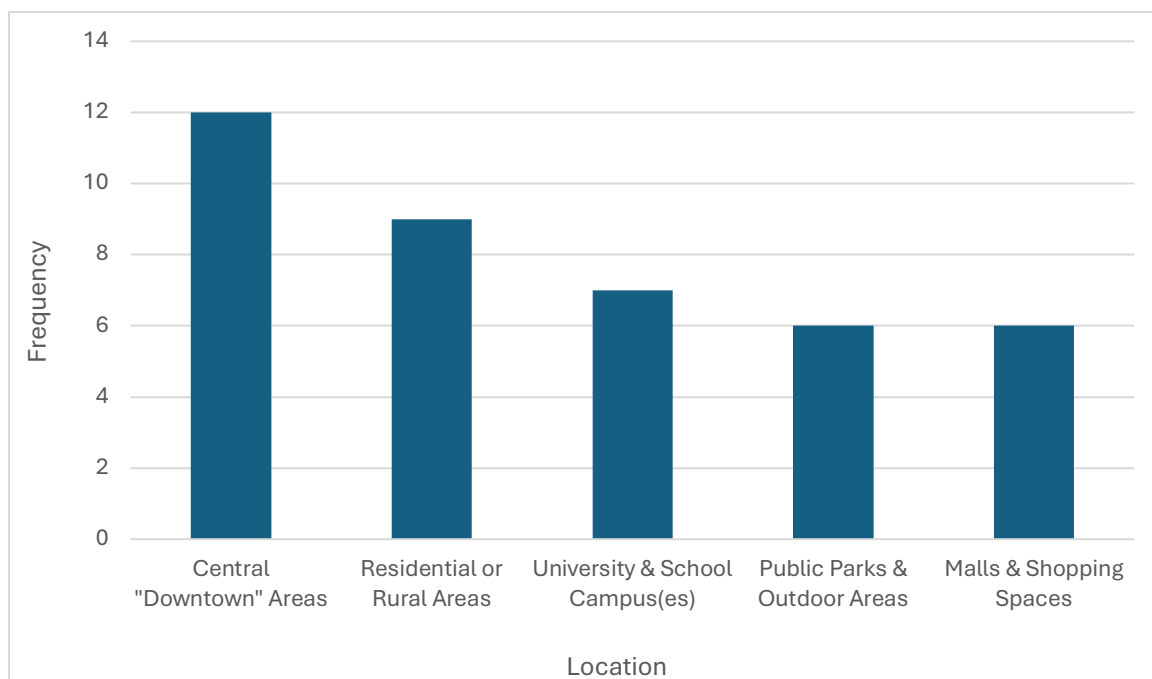
Additionally, 12 participants alluded to being either internally or externally³⁸ driven to play *Pokémon Go*, expressing a desire to look for something interesting when engaging in gameplay, without being able to pinpoint specifically what they were looking for. What qualified as 'interesting,' varied considerably across individuals. P2's summation of this situation is illustrative of the common view from these 12 individuals. As they put it, "I can't tell you what I'm looking for. But I know that I'm looking for something." When I probed participants further about this idea of 'looking for something,' 16 individuals indicated that catching *Pokémon* was their main goal when playing. Other reported gameplay goals included completing 'enough' in-game challenges (n=6) to feel satisfied with the gameplay session, 'achieving' boredom (n=2), reaching a high level (n=1), and getting 'enough' steps in during a walk (n=1). One participant declined to respond.

To elicit information about the relationship between the participants' physical

³⁸ I opted to not include the specific number of participants who fell under each category, because it was not always clear whether they were internally or externally driven or whether a combination of both was at play.

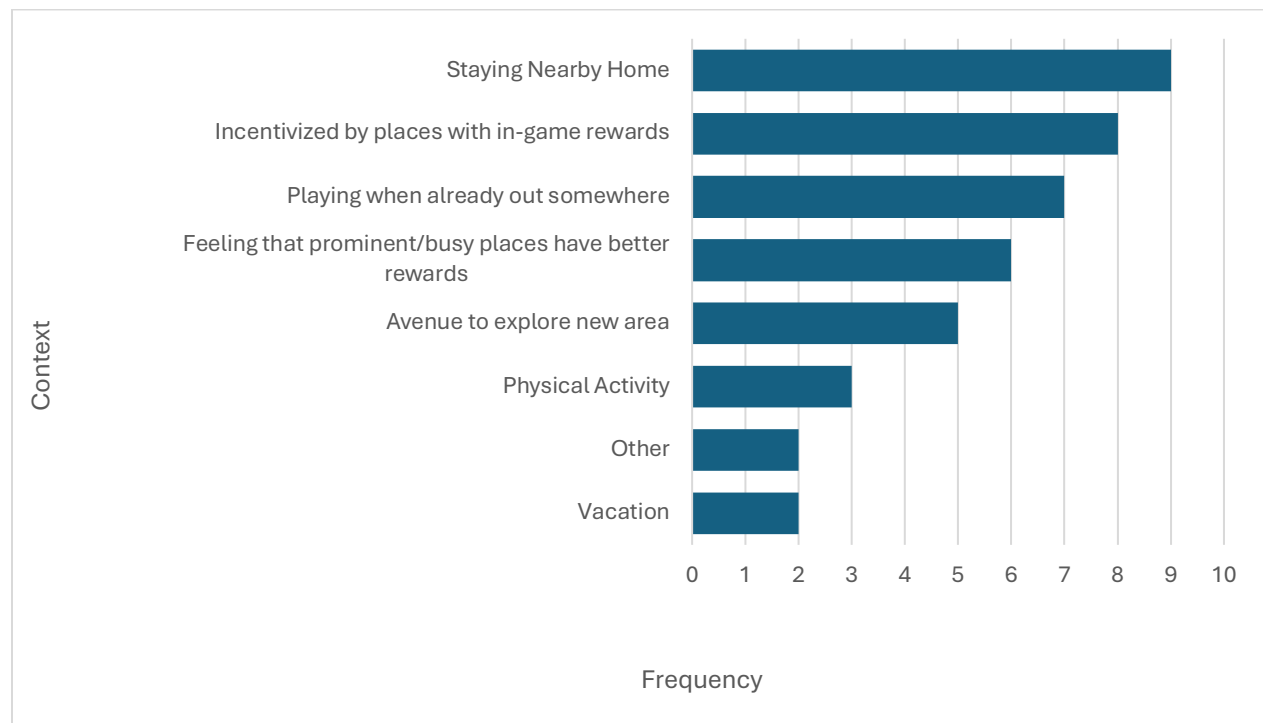
environments and their gameplay behaviours, I asked them about the main locations at which they tended to play or find themselves at when playing. The responses fell into two broad categories: those identifying actual locations, and those in which the respondents spoke of the context of locations. As illustrated in Figure 3.4, the most frequently reported locations included central ‘downtown’ areas (n=12), residential or rural areas (n=9), university and school campuses (n=7), malls and shopping areas (n=6), and public parks and outdoor areas (n=6).

Figure 3.4 Locations at which Pokémon Go is played



In terms of the contexts associated with locations (see, Figure 3.5), the majority of participants expressed staying within the vicinity of where they live (n=9), and/or being incentivized by places they feel are likely to heed more or better in-game rewards (n=8), and/or playing the game when they were already out somewhere (n=7).

Figure 3.5 Choosing Gameplay Locations



The majority of participants (n=19) stated they had been surprised at one time or another by the location of a *Pokémon* or of *Pokéstops* during gameplay. Of the four who claimed not to have been surprised by the locations of *Pokémon* or *Pokéstops*, three seemed to contradict themselves when explaining why. Two noted that even though they were not surprised by the location of *Pokémon Go* rewards, they could nonetheless name locations that were surprising to them, while another said that even though they were not surprised, in-game elements can be found at notable locations (e.g. tourist monuments or famous public artwork³⁹). P4, for example, shared that they are not typically surprised by the location of *Pokéstops* or gyms, but one that had stood out to them had been in a very low-activity neighbourhood and this, in turn, enabled them to gain a competitive

³⁹ It should be noted here that, while this was not further explored across my whole sample, two participants explicitly reported using *Pokéstops* and similar location-based in-game rewards as a component of their travels. P19, for example, reported using *Pokémon Go* in Mexico to view monuments, while P13 claimed to have deliberately sought out *Pokémon* areas during a trip to Japan. Three other participants mentioned looking for noticeable differences in *Pokéstop* locations between their countries of origin and in Ottawa, Canada.

advantage over other active Pokémon Go players by placing a *Pokémon* there and having no competitors come to defeat it for months. P5 claimed not to be surprised by *Pokéstop* locations because of just how many there are, yet they singled out one location tied to a personal university memory as especially memorable. Of the 19 participants who were surprised, two offered responses that began as positives and, as they elaborated further veered to a sense of disappointment about their sense of surprise. The first reported enjoying the surprise of where in-game content spawned, but ultimately feeling really disappointed about the overall experience. The second reported having been surprised by the location of varying in-game rewards during gameplay, but felt the experience was predictable and that, as such, should not have been surprising to them.

When I asked these 19 individuals what specifically it was about the locations they recounted that were surprising, 11 reported that being in a remote or non-public area was the surprise. Five of these individuals gave the example of someone's home being an unusual location for a *Pokéstop*. One participant questioned why a home would be chosen as a significant monument, noting that it is now immortalized in the game for people to visit. Other reported surprising locations were associated with specific infrastructural features of the built environment (e.g., a fountain, a hole in the ground, a soccer net, a lamp post, a city hall sign, a bench) (n=7), generic locational categories (e.g., highways, lakes, rivers, airports, statues, farms, basketball courts) (n=7), and locations on the uOttawa campus (e.g. University residences, University library, general walks around campus) (n=5). It should also be noted that in discussing the locations of *Pokéstops*, gyms, and reward spawn locations, 16 individuals expressed believing there was a randomness factor at play in terms of where these in-game mechanics were placed.

These accounts of unexpected Pokéstop placements prompted a related line of inquiry, which looked at how attentive participants felt to their physical surroundings while playing, and what they noticed as they played in those real-life locations. To elicit information about the participants' perceptions of how they interact with their physical surroundings during gameplay, I asked about their awareness of their surroundings as they play *Pokémon Go*, including the things they perceive. The majority (n=14) of participants expressed having a lack of, or reduced, awareness of their surroundings when engaged in gameplay. Five (n=5) reported having adequate or even better awareness of their surroundings than usual when doing so. Two (n=2) individuals indicated that, depending on the circumstance, they had better and worse awareness, and two (n=2) others responded by emphasizing how they interacted with their surroundings during gameplay.

I then asked the participants to describe how they navigate through physical spaces during gameplay. As anticipated, they reported interacting with their environments in a variety of ways. The responses can be divided into five categories:

1. literal descriptions of one's physical actions and movements while playing (n=7);
2. reflective descriptions about personal emotions, experiences, or impactful moments while playing (n=4);
3. purpose-driven responses focusing on specific things *Pokémon Go* urges players to do (n=4);
4. contextual responses focusing on the circumstance or situation around gameplay (n=4); and
5. ambivalent responses in which opaque or conflicting accounts of how they interacted with their surroundings (n=4).

Among these five categories, I was able to identify four category-spanning issues: exploration, safety, pleasure, and socialization (see, Table 3.6). Of the 14 participants who emphasized exploration in their descriptions of navigating through physical spaces, ten (n=10) mentioned positive experiences associated with discovery and *Pokémon Go* motivating them to

explore new locations. The remaining four (n=4) noted how they do not explore their surroundings while playing. Indeed, two individuals within this group asserted that the game actually prevents them from being able to explore. The issue of safety was present in the responses of ten (n=10) participants. Six (n=6) individuals relayed that playing the game may, at times, impair their safety, and four (n=4) highlighted how they actively think about, and take steps towards, playing *Pokémon Go* safely. Seven (n=7) participants expressed pleasure through their interpretations of how they interact with their surroundings, specifically noting elements of these interactions that bring them enjoyment. Lastly, four (n=4) participants expressed socialization as a key element of gameplay, such as either making new friends through *Pokémon Go*, or using the game as an opportunity to socialize with existing friends.

Table 3.6 Interacting with Surroundings During Gameplay

Issue	Sub-Issue	Frequency	Total
Exploration	Promotes Exploration	10	14
	Reduces Exploration	4	
Safety	Promotes Safety	4	10
	Reduces Safety	6	
Pleasure	7		7
Socialization	4		4

Another feature of the participants' descriptions of navigating through physical spaces was their propensity to mention things that catch their attention while engaging in gameplay. In total, some 26 items were mentioned (see, Table 3.7).

Table 3.7 Players' Attention When Playing

In-Game Mechanics	<i>Pokéstops</i>	7	19
	Catching Pokémon	4	
	Gyms	3	
	Friends' Activity	2	
	Completing Research	1	
	Rarity of Pokémon	1	
	Combat Areas	1	
In-game Animations/Visuals/Cues	The animated visual of Pokémon spawning on the map	3	9
	Movement mechanics of animated character	1	
	Animated Weather updates in-game	1	
	Animations when raid begins	1	
	Things with strong visual/sensory cues	1	
	Phone physically buzzing when Pokémon is nearby	1	
	Animated map changes based on location	1	
Physical Spaces	Visual Landscapes	4	9
	Specific Locations	3	
	Other people also on their phone nearby	1	
	Public environments	1	
In-Game Spawning	Which places have more <i>Pokéstops</i> /Pokémon/Gyms	4	8
	Seasonal changes in types of Pokémon	1	
	Seeing more <i>Pokéstops</i> everywhere	1	
	More Pokémon when on vacation	1	
	Pokémon spawning in remote areas	1	
Understanding of Gameplay	Unfamiliar things on familiar routes	1	3
	Using the game to pass time	1	
	Using the game as a tool	1	

Overall, the observations emerging in relation to the participants' experiences with gameplay suggest that players routinely shape their gameplay around perceived in-game incentives, such as checking for in-game rewards or optimizing gameplay routes, and yet they continue to frame these behaviours as freely chosen instead of nudged or influenced. I observed gameplay to be integrated with participants' daily life, while also guiding spatial movement and attention in nuanced and sometimes opaque ways. Furthermore, participants also reported a combination of critical thinking and reflection upon gameplay patterns, which when paired with reports and experiences with

nudging suggest a complex, potentially unacknowledged interplay between freedom, agency, and game-driven nudges.

3.4 Participants' Awareness of Gameplay Patterns

To elicit information about players' perceptions of patterns during gameplay and how these might connect with their main goals when playing, I asked the participants about their awareness of, and experiences with, any patterns (e.g., recurring locations or types of locations, repeated actions during gameplay) they noticed when engaging with *Pokémon Go*. The majority of participants (n=16) indicated they did notice patterns in their gameplay. This said, in responding to this question, five individuals (n=5) contradicted themselves. Having started their responses by stating they had not experienced any patterns, these individuals went on to subsequently describing patterns they had experienced. Of these five, four noticed themselves often playing in busy areas with the expectation of heeding better in-game rewards, while one noticed that the more frequently they visited specific remote areas, increasing numbers of *Pokémon* would spawn which, in turn, led to them returning to these areas more often. Two (n=2) participants were confident that they had not experienced any patterns when playing.

Fifteen (n=15) participants noted that *Pokémon* and other in-game features are more fruitful in popular, central, and high-traffic areas. This observation suggests that these individuals recognized patterns in their gameplay insofar as they reported that gravitating to these areas increased their chances of encountering better in-game rewards. Indeed, this implies a clear, repeatable trend in participants' understanding of the game's design. Essentially, players' choices were appearing to be guided by the belief of recurring and better availability of in-game rewards in busy areas, creating a pattern of behaviour that would reinforce their decision-making process while playing. P6 explicitly expressed this by noticing that they recurrently play in high-traffic and

public areas (such as universities and parks), but that they also believed *Pokéstops* and gyms were purposefully placed in these busy areas in order to attract more players. P18, echoed the view, stating that in-game rewards are strategically placed. They hypothesized that because the game can spawn in-game content virtually anywhere, developers intentionally concentrate high-value rewards (e.g. rare *Pokémon* and gyms) in public, high-traffic areas to avoid privacy issues, because spawns in remote areas might appear in front of someone's home.

Another idea expressed by 14 participants related to how gameplay may, with or without player knowledge, direct where individuals play the game. Echoing the emphasis some placed on the role of high-traffic public places eight (n=8) participants noted that when playing *Pokémon Go* they frequently found themselves gravitating towards high-traffic locations (e.g. shopping centres, University campus, downtown areas). These individuals commented on finding themselves ending up in such places/spaces either intentionally, or without awareness of it. They also indicated that they played more often and more successfully⁴⁰ in these spaces because rewards were more readily available in high-traffic locations. Six (n=6) participants remarked that playing *Pokémon Go* actively helps them to explore new locations, either intentionally or without initial intent. For example, P2 mentioned actively using *Pokémon Go* as a tour guide to explore their city, while P23 acknowledged that the game helps them find interesting spots in unfamiliar locations purely due to the location of *Pokéstops*.

Also evident in eight participants' responses were notions of free will, agency, and having control over where they choose to play. These participants reported feeling as though they had control over which locations they chose to navigate while playing, even in instances where they recognised recurring patterns within the game. For example, these individuals indicated that they

⁴⁰ Success in this sense entailed participants feeling they had improved or optimized gameplay experiences in terms of enjoyment and in-game rewards.

did not feel obliged to go to specific areas when playing, even if these areas heeded better rewards. This sentiment positioned favourable in-game mechanics, such as where ‘good’ *Pokémon* spawn, the location of gyms, *Pokéstops*, raids, and more, to be opportunities for exercising agency by opting out, rather than being forced to participate. Five of these eight individuals went one step further to claim they felt they had complete control over where they play, and that their choices were not affected by the game.

When discussing potential locational patterns, nine (n=9) participants claimed to consistently stick to their personal routes when engaging in gameplay. Two participants who were interviewed towards the end of 2024 noted using an in-game update called ‘Routes,’⁴¹ that enables the game to suggest different routes players can opt into and complete in return for in-game rewards. P19 reported that the Routes feature tended to bring them towards more high-traffic areas. Participant P23, who mentioned this feature, claimed to know of it but not to use it.

The observations presented in the preceding discussion points to members of my research sample often being able to recognize patterns in their gameplay and behaviours. To this end, the participants most frequently recognized the recurring appearance of reward-dense locations (such as downtown areas, shopping centres, or school campuses) as well as time-bound prompts (such as logging in for raids, streaks, or gifting to friends). These patterns of gravitating towards high-traffic areas, acting on app cues and prompts, or optimizing gameplay to maximize rewards align with Schmidt and Engelen’s (2019) and Arafan’s (2021) observations regarding the ways in which defaults and interface cues can steer users’ decisions while they maintain a sense of autonomy while echoing Zuboff’s (2019) concerns about individuals being herded towards monetizable spaces.

⁴¹ Routes is an in-game feature launched in *Pokémon Go* in July of 2023 that incentivizes players to take pre-set routes around their area in exchange for the opportunity of gaining more in-game rewards.

3.5 Conclusion

The observations presented in this chapter highlight key themes and consistencies across participants' reported experiences and perceptions when playing *Pokémon Go*. These themes included connection, socialization, nostalgia, and location-based play. One particularly noteworthy facet of the gameplay descriptions was the extent to which the participants seemed to underestimate how design features of the game might be influencing or guiding their behaviours in particular directions. Despite claiming to maintain personal autonomy over their decisions during gameplay, several participants described repeatedly engaging in specific behaviours such as returning to the same high-traffic areas for in-game rewards or following notification prompts.

In the next chapter, our attention turns to explore how participants understand data collection, privacy, and behavioural guidance, and links their levels of awareness to views about fairness, consent, agency, and control within *Pokémon Go*.

4 Knowing Without Knowing

The discussion in this chapter presents the observations emerging from the participants' responses to the questions comprising the second part of the interviews. Here, the discussions focused on participants' awareness of data collection in *Pokémon Go*, their perceptions of the fairness of exchanging personal data for access to gameplay, and what can (if anything) they believed could be done to address related concerns. The chapter is divided into five sections. Section one looks at participants' consent practices and their understanding of what information and data is collected by Niantic when they consent to its Terms of Service and Privacy Policy. The second section reports on their concerns about data privacy, security, and surveillance, and contrasts these with the behaviours they undertake to protect their privacy, highlighting the gap between what they say they worry about and what they actually do. The discussion in section three looks at the participants' perceptions of the fairness of exchanging personal data for access to gameplay. Section four examines how participants perceive their own agency when it comes to addressing game-related concerns, who they believe should be responsible for addressing their concerns, and the specific actions they think could be taken to address them. Section five concludes the discussion.

4.1 Consenting to and Understanding Data Collection

The discussion in the second part of the interviews started with me asking questions about the participants' data and privacy concerns. My interest in this issue was directly informed by Niantic's information collection, sharing, and protection practices. Niantic's Terms of Service⁴² and Privacy Policy⁴³ agreements are made available to users both when signing up for a *Pokémon Go* account

⁴² See, [Niantic Terms of Service](#) (last modified May 29, 2025).

⁴³ See, [Niantic Privacy Policy](#), (last modified May 29, 2025).

in-app via drop-down menus, and as public documents available on Niantic's website. Players must consent to accepting both agreements before they can play the game. The Terms of Service agreement sets out behavioural and player rules, legal liabilities, IP and content ownership, as well as licensing and service details. The Privacy Policy agreement sets out details about the data collected through the *Pokémon Go* app and the users' rights, rules around data sharing, and security measures put in place to protect users' information. Together, these two documents establish the conditions for gameplay and offer a degree of clarity about the types of information players consent to being collected.

Despite being presented to participants as readily available transparent agreements, the Terms of Service and Privacy Policy texts are, in fact, opaque and reflect an asymmetrical power relationship that clearly favours Niantic's interests. For example, in consenting to the terms set out in these two documents, players give up their right to sue or participate in class action lawsuits against Niantic. On closer inspection, the texts place ambiguous restrictions on users' rights, offer unclear claims of ownership and control over user data, and permit extensive, yet opaque, data collection and sharing with third parties.

Some examples include:

- Section 5 of the Privacy Policy states that Niantic has “legal, organizational and technical security measures in place to prevent your Personal Data from being accidentally lost, used or accessed in an unauthorized way, improperly altered or disclosed.” However, Section 3.4 of the Terms of Service agreement contains a contradictory stipulation which specifies that players are responsible for “all activities that occur under your Account, whether or not you know about them.” One text presents users' personal data as being protected by Niantic, while the other makes clear that,

ultimately, it is users who are responsible for any activity taken through their accounts. Put simply, the two documents simultaneously present Niantic as a protector of user information while absolving it of any responsibility for failing to adequately live up to that role.

- Section 5 of the Privacy Policy also sets out the parameters of information sharing with third parties, stating that Niantic shares users' personal data to Service Providers to deliver services on their behalf, and that these providers are given users' data only for the purpose of performing these services, and that they are contractually obliged not to disclose or misuse this data. However, Section 10 of the Privacy Policy states that any information users provide on, to, or that is collected by a Third-Party Service is subject to that owner's or operator's privacy policy. To this end, Niantic claims it is not responsible for the content, privacy, or security practices and policies of any Third-Party Service. Put aside the lack of clarity about exactly what user information Niantic shares with whom, at issue here is opaque phrasing that initially presents users' personal data as private and only circulated with purpose, only to later place the onus on third parties to safety store and not share users' data thereby absolving Niantic from any responsibility for misuse of user information.

With this mind, I began by asking the interviewees if before starting to play the game they had read Niantic's Terms of Service agreement governing players can use the game and/or Niantic's Privacy Policy governing how players' data is handled. Twenty of 23 participants reported they had not. This finding was not particularly surprising. What was notable about the responses was the humour and, at times, sense of surprise the participants expressed in answering

the question. Indeed, many participants seemed to be noticeably uncomfortable responding. Some examples of the responses given include:

P2: “Absolutely not”

P18: “I don't think anybody reads those”

P6: “No, it’s pretty long”

P15: “I definitely have not””

P10: “Ah, no I didn’t because it’s too long

P19: “No, of course I didn’t”

The three participants who reported having read the Terms of Service and/or Privacy Policy also indicated they had read only a portion from either texts, saying they either skimmed or did not read them in their entirety.

Niantic’s Privacy Policy sets out nine (9) categories of information collected from *Pokémon Go* players: Demographic Account Identifiers, External Single Sign-On IDs. Location and Movement, Device details and applications, Gameplay actions, Purchasing details, Camera and geospatial sensory images, Fitness activity, Network and analytics (Niantic 2025). When I asked the participants two questions about the types of information they believed is collected about them when playing *Pokémon Go*, 13 individuals specified three or more types of information which they believed was being collected about them. Ten indicated two or less types (see, Table 4.1). Those comprising the former group tended to expound upon their ideas regarding this matter whereas those in the latter group tended to provide short responses.

By far, location data was the most frequently mentioned information type (n=22). Indeed, it was the first information type specified by 20 participants. Expressions identifying location data as a type of information were also associated with a recognition that location tracking is linked to the overall purpose and needs of the game. Of the twenty-two (22) participants who mentioned that *Pokémon Go* collects their location data while playing (and not playing⁴⁴), four mistakenly

⁴⁴ It merits noting that Niantic gives players the opportunity to opt in or out of having the app collect background location data when not playing. See Section 2, [Niantic Privacy Policy](#).

held that locational data was the only type of information collected.⁴⁵

Table 4.1 Types of Information Collected

Information Type	# of Participants ⁴⁶
Location Data	22
Health & Activity Data	8
Time & Usage Data	7
Tracking Across Apps	6
Demographic	5
Camera Data	4
Contacts Data	4
Connectivity Data	2
Other	2

The second most frequently mentioned information type was health and activity data. Six (6) of the individuals who identified this information maintained that *Pokémon Go* accesses their phone's health metrics, steps taken, heart rate, and movement data, while the remaining two maintained that only the steps they take during the day are tracked. These six individuals also referenced health data as being important to the game, due to its connections to location tracking. The underlying assumption here was that *Pokémon Go*'s needs this information for the game to function correctly. In fact, Niantic's Privacy Policy specifies that players' Apple Health or Google Fit data is collected on an opt-in basis, and that players' health app data cannot be read or written from, nor used for marketing purposes without consent. These claims, however, pertain only to Niantic insofar as the same policy authorizes Niantic to share users' personal data with their service providers for the purpose of performing services on their behalf, including performance, marketing

⁴⁵ Niantic's Privacy Policy specifies that it collects varying types of personal data, including players' identifiers, commercial information, Internet or other electronic network activity information, geolocation data, and visual information. See, Section 11, [Niantic Privacy Policy](#).

⁴⁶ The total number of participant responses exceeds the total number of participants because they were given the opportunity to specify more than one information type.

analytics, measurement, and advertising services. To this end, Niantic does not explicitly use users' health data and absolves itself of responsibility if any of their service partners do.

Time and usage data was identified by seven (7) participants. Here, the responses centered around how long players spent on the game, the amount of time spent at different areas, movement data, and the use of in-game mechanics. These seven individuals also distinguished the game's tracking of 'time and usage' as different from its health and fitness data, which they associated with their phone's health app data (e.g. including steps and activity) and being integrated and with *Pokémon Go*.

The views expressed by the participants about the types of information collected about them when playing *Pokémon Go* seemed to coincide with a lack of awareness about the value of their data. This was evident, for example, in P4's response which exemplified the tenor of the responses received from the other participants. In discussing information collection, they noted that, while they were unsure if the game had access to details such as player gender, age, home address, and personality traits, even if it did, they did not believe it would be optimally useful to the game's owners because "they don't sell to advertisers that target us." Another factor suggesting a possible lack of awareness was a propensity for those in my research sample to couch their responses with phrases expressing uncertainty such as "*maybe*," "*I wouldn't know*," and "*I'm not sure*." For example, when asked about information types collected about users other than locational data, P15 responded by saying

I wouldn't know, but I would definitely assume they do [take more data than they know]. Like, I'm sure the terms of service is really long. I'm sure there is a bunch of random stuff in there. I didn't read it, so I wouldn't know.

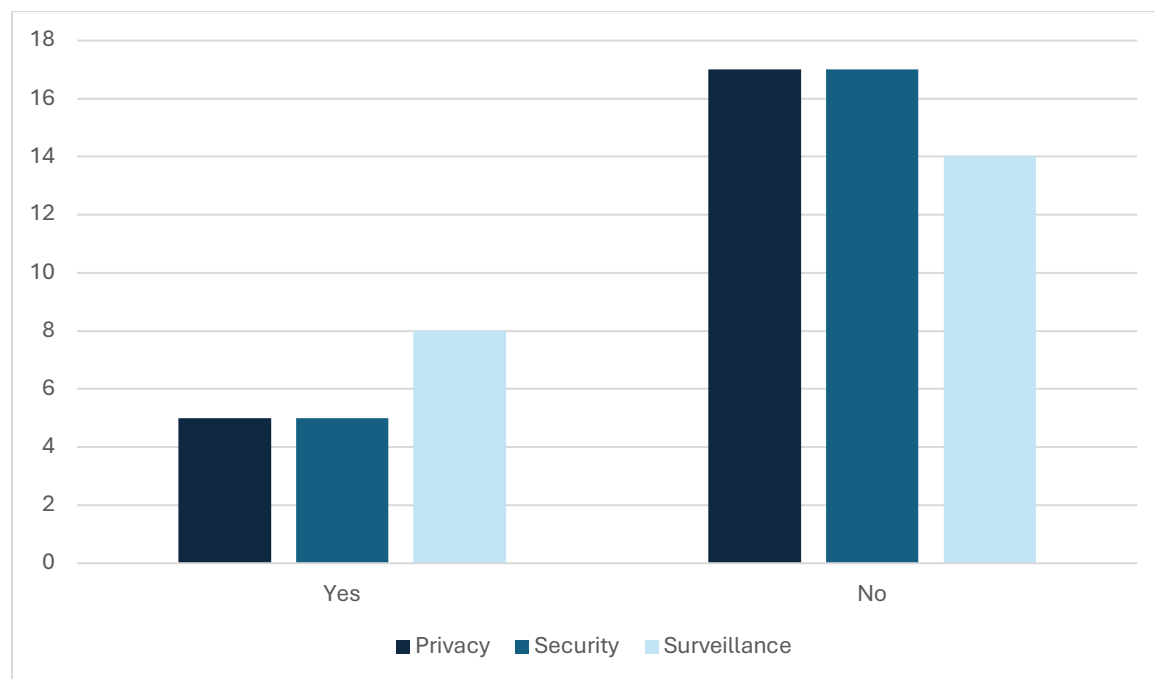
The near unanimous consensus among the individuals comprising my research sample about *Pokémon Go*'s dependence upon location data combined with both the opaqueness of Niantic's Terms of Service and Privacy Policy and their acknowledged lack of awareness about

the types of information collected by Niantic points to an acceptance and, perhaps even normalization of opaque data collection practices.

4.2 Ambivalence About Personal Data

Twenty-one (21) participants reported not being concerned about their data being collected by Niantic through *Pokémon Go*. Within this group, four (4) individuals expressed being aware of potential concerns, two (2) noted they previously were but no longer are concerned, along with one who indicated being “mostly or generally” not concerned, and another who stated they were not concerned *yet*.

Figure 4.1 Participants’ Concern About Privacy, Security, and Surveillance⁴⁷



When asked specifically about any privacy, security, and/or surveillance related concerns they may have, there were more individuals claiming not to be concerned than those expressing concern (see, Figure 4.1). However, at this point in the interviews, nine (9) of the 21 individuals

⁴⁷ One participant declined to respond.

in my research sample who had previously claimed to have no concerns about their data being collected expressed a different view when asked specifically about privacy, security, and surveillance.

Of the three issues, surveillance was the one about which the largest number of participants (n=8) expressed concern. Seventeen (17) expressed having no concerns about data privacy or security in relation to *Pokémon Go*. However, it was not the same 17 individuals in both instances, with some expressing concerns about one consideration but not the other. Slightly fewer participants (n=14) expressed having no surveillance-related concerns in relation to *Pokémon Go*.

Perhaps, one of the most striking aspects of the participants' responses regarding the issue of data collection and tracking were claims from 15 individuals of their knowing but not quite caring about how, or the purposes for which, their data was being used. P22 summarized this perspective well, saying that if *Pokémon Go*'s use of their data were to concern them, then simply having a phone should be that much more concerning. P11, expressed a similar opinion, stating:

I don't really have concerns just because I know it's going to happen either way.
So, if I don't want to do that, I would just delete the app.

In analyzing the participants' responses, I identified three discrepancies between their claimed levels of awareness about Niantic's data practices and their expressed concerns/behaviours, suggesting that awareness, albeit limited, of the types of information collected did not correspond with feelings of concern. First, none of the individuals who claimed to have read at least part of the Terms of Service and/or Privacy Policy were among those who voiced concern about how their data is used or who claimed to take measures to protect their data. Second, one of the two (2) individuals who expressed concern about their data being collected by Niantic, identified four information types they believed Niantic collected from *Pokémon Go* players. The second individual, by contrast, maintained that locational data was the only

information type collected about them when playing *Pokémon Go*. They further stated that despite being concerned about how their location being tracked, they felt they should care more than they actually do. Third, despite 21 participants claiming to have no concerns about their data, eight (8) individuals within this group did express having concerns pertaining to privacy, security, and/or surveillance within the context of *Pokémon Go*. Taken together, these observations suggest that the individuals comprising my research sample may not link data collection with risk unless data collection is framed in a particular manner (i.e., directly in relation to privacy, security, and/or surveillance).

The above discrepancies seem to broadly resonate with the findings of Chhabra (2022), Seberger et. al. (2021), and Wang et. al. (2024), who observed that users of digital mobile applications tend to passively accept data collection processes due to a combination of information overload and lack of transparency about what is being collected, underestimating what information is being collected about them, and viewing consenting to their data being collected as an expected cost for the convenience of using an online services. The discrepancies also seemingly align with the findings of Hargittai and Marwick (2016), whose analysis of the privacy paradox and apathy regarding online privacy concerns highlight a discrepancy between individuals' perceived versus actual levels of concern when engaging with online spaces.

Thongmak's (2022) research into privacy-protection strategies used in *Pokémon Go* identified three ways *Pokémon Go* players protect their privacy during gameplay: fabricating, seeking, and refraining behaviours. Fabricating behaviours involve players intentionally inputting false personal information (e.g., false name, email, or other identifier(s)) into account registration and profile fields. Seeking behaviours refer to individuals actively looking for information to better understand and permit more informed decision making, and refraining behaviours include

withholding or avoiding the sharing of certain details or information (e.g. contact information, location data) as a means of protecting their data and privacy⁴⁸. Bourdouden et. al.'s (2023) investigation of data collection, privacy, and anonymity among online gamers likewise found that despite a lack of awareness about the scope of data collected about them, many gamers nonetheless change their names or character appearances as a means of at least minimally protecting their privacy. Interestingly, the participants in their study frequently reported using such anonymity and privacy protection strategies principally for aesthetic as opposed to privacy-related reasons.

When asked about strategies they used to protect their data and/or privacy when playing *Pokémon Go*, slightly more than half (n=13) of the individuals comprising my research sample reported not using any. The other ten (10) individuals claimed to use at least one data or privacy protection strategy, including not using their real name or an identifying avatar (n=5), turning off certain privacy settings (n=2), turning off steps tracking (n=1), using a VPN (n=1), not inputting credit card information (n=1), turning off the augmented reality mode (n=1), and one participant who felt using Google sign on was by default a protective strategy (n=1).

Among the 13 individuals who reported not using any privacy protection strategies, six (6) nonetheless noted that their username differs from their real name, and three (3) indicated having an avatar that looks different from themselves. Each of these nine (9) individuals reported that their choices had been based either on aesthetic considerations or without any deliberate intention of protecting their privacy. Two (2) other individuals among the 13 pointed out that they had used a secondary email address when registering with *Pokémon Go*, one of whom implied that if they opened an account today, they likely would use some privacy protection strategies. A separate two (2) individuals among the 13 indicated being aware of privacy protective strategies and reported

⁴⁸ According to Thongmak (2022), the most commonly used of these strategies are fabricating behaviours.

previously employing them but no longer doing so.

Among the ten (10) individuals who reported employing strategies to protect their privacy during gameplay, six (6) offered nuanced and, at times, contradictory explanations of their actions. Four (4) of the six (6), alluded to such things as: believing their personal strategies (i.e., turning on privacy settings; not using one's real name) made them feel less likely to use other strategies (n=4), feeling their data already was protected by Google (n=1); and that it simply was common sense to protect one's privacy during gameplay (n=1). The other three all put forward contradictory responses. One claimed not to use privacy protection strategies only to realize midway through their response that they did, in fact, use them (i.e., after stating they did not use any privacy protection strategies, they realized that not using their real name when registering for an account is a protection strategy). Another claimed to protect their privacy but subsequently mentioned their username was their last name. The third person said they had forgotten to turn off a VPN and so used a protective strategy by accident.

Returning to the participants who had reported using privacy protection strategies, my observations also indicated that all ten of these individuals had also earlier expressed having little to no concern about how their data is being collected by Niantic via *Pokémon Go*. P4, for instance, who reported hiding their name and physical identity as a privacy protection strategy, had previously expressed having no concerns about companies collecting and actually feeling accustomed to it. Another frequently repeated idea was aptly summarized by P22, who earlier in our discussion stated:

if *Pokémon Go* worries me, I should be worried about a lot more things. Like, even places like Instagram, Netflix, even my Gmail, there's a lot more things that have a lot more sensitive data.

Yet, when the topic of privacy protection strategies arose, they reported that they turn off their location details as such a strategy

The observations reported above show that my research sample comprised individuals who reported not using privacy protection strategies but who, nonetheless, knowingly - and, in at least one instance unknowingly - did, in fact, make nominal use privacy protection techniques, and individuals who reported not having any concerns regarding the collection of their data but who, nonetheless, voiced varying privacy-related concerns. These observations appear to show the privacy paradox in action insofar as there were numerous discrepancies between several participants' statements versus their actual behaviours when navigating privacy concerns.

4.3 Fairness of Data Trade-Off

The discussion about privacy was followed by a question about whether having to consent to providing access to one's data in exchange for access to play *Pokémon Go* constituted a fair exchange. Shih and Liu's (2023) investigation of users' perceptions of data trade-offs on Facebook found users to be more accepting of their personal data being disclosed if they perceived there to be a greater benefit from the service than risk from disclosing their data. In the context of gaming, Jordaan and Humbani's (2023) examination of information trade-offs within mobile gaming found that players were more likely to perceive the information trade-off to be fair if doing so granted them immediate easily accessible value from the game. I was curious to discover if similar perspectives existed among members of my research sample.

Most participants (n=20) indicated that the 'data for access' arrangement for *Pokémon Go* is fair, with two (2) individuals expressing ambivalence about the matter. One person maintained the exchange was not fair (See Table 4.2). Among the twenty who viewed the exchange as fair, four rationales were advanced. The most frequently (n=8) mentioned of these was that the exchange of the data is essential for gameplay. In other words, and as pointed out by P15, "you can't play the game without giving your location away." The next most frequently given rationale

was advanced by seven (7) individuals who maintained that players receive something in return (i.e., gameplay) for their data. This, as they saw it, made it acceptable for Niantic to collect their information for *Pokémon Go* gameplay purposes.

Five (5) participants said the exchange is fair because they felt they were in control of the data they generated. Their perceptions of fairness in this context seemed to be underscored by the notion that Niantic is transparent about its data collection techniques and that they, as *Pokémon Go* players, have full control over the amount of data they share. Three individuals in this group stressed that they had total control over what they permit Niantic to collect about them. This said, all five simultaneously voiced concerns about the possibility of their data being used for purposes outside of gameplay.

The fourth rationale argued that, today, such exchanges are standard practice, which by default makes it fair (n=3).

Table 4.2 Fairness of data exchange

Reason	Frequency
Exchange of data is essential to gameplay	8
Exchange of data is fair because something desirable (i.e., access to gameplay) received in return	7
Exchange of data is fair because players control what data is shared	5
Exchange of data is fair because it is common, standard practice	3

Among the 20 individuals in my research sample who felt the exchange was fair, nine (9) nonetheless expressed a degree of concern or hesitancy about ‘just how fair’ the exchange was. When I asked them to elaborate about this feeling, five (5) individuals said their perception of

fairness in this instance was contingent upon the intention behind the data collection, drawing a personal line at whether:

- their data were to be used for advertising;
- if the application was accessing their photos, videos, and passwords;
- if their data was being shared with social media platforms;
- if their camera data or personal information was being collected; and
- if their data falling into the wrong hands

These views further suggest a lack of understanding among the individuals comprising my research sample of the types of information collected, stored, and used by Niantic. Indeed, these individuals were not aware that in having consented to Niantic's Terms of Service and Privacy Policy, they consented to the above types of data being collected and used (see Table 4.3). It merits noting therefore that these participants claimed it their perception of the fairness of the exchange would be affected were they to know this information is being collected.

Two (2) other participants indicated that despite viewing the exchange as fair, their preference would be for more a 'willing' as opposed to 'necessary' exchange and, ideally, no data needing to be taken. One of these individuals added feeling some discomfort with the exchange, noting they did not particularly like the data trade-off but know that other organizations have "way more information on them than *Pokémon Go* does." (P4)

The responses of the three (3) individuals who perceived the exchange of their data for access to gameplay as unfair expressed differing levels of conviction about this matter. One individual was unequivocal. In their view, the exchange is unfair because *Pokémon Go* (or Niantic) gets much more benefit, as a company, from the data than any 'benefit' they obtained as a player. As for the two other individuals, one indicated that they previously thought the exchange was fair but upon further experience were no longer certain it is so, and the other said they could not specify whether the exchange was fair but suggested it might not be.

Table 4.3 Perceptions versus reality

	Is it Collected?	In Terms of Service?	In Privacy Policy?	Clear or Opaque?	Reason for Opacity?
Niantic using users' data for advertising?	Yes	N/A	Yes Sec. 2 and 5	Opaque	Contradicting statements
Niantic accessing users' photos, videos?	Yes	N/A	Yes Sec. 2	Opaque	Unclear statements about use of augmented reality camera, use of photos, and what is collected and by whom
Niantic accessing users' passwords?	Yes	Yes Sec. 3.4 and 10	N/A	Opaque	Niantic absolved of any responsibility ⁴⁹
Users' data shared with social media platforms?	Yes	N/A	Yes Sec. 2, 3, and 10	Opaque	Contradictory information ⁵⁰
Users' camera data or personal information collected?	Yes	Yes Sec. 5 and 7.5	Yes Sec 2 and 3	Opaque	Lack of clarity about what is collected and by who
User data falling into the wrong hands?	Addressed	Yes Sec 3.4	Yes Sec 5	Opaque	Contradictions across both texts.

Perspectives about the fairness of the exchange of data for access to gameplay among the individuals comprising my research sample seemed to be somewhat of a flux. Specifically, there seemed to be, among some individuals at least, an ongoing weighing and renegotiating of their perception of fairness that involved considerations of whether data practices are just or unjust. When asked to describe their perceptions of the benefits and consequences of the *Pokémon Go* and whether these benefits outweighed the consequences, the individuals comprising my research

⁴⁹ Although it is not part of the Terms & Conditions or Privacy Policy texts, Niantic separately claims on their website's FAQ section that they do not store user passwords. See, [Niantic FAQ](#)

⁵⁰ Niantic claims to not directly use any user data for targeted advertising. However, it does share data with Meta (Facebook and Instagram) and states that it is not responsible for how third-party providers handle user data. Instagram's terms of service specify that "user information is processed to support Facebook, Instagram, Messenger and other products and features offered by Meta Platforms, Inc." (Instagram, 2025).

sample put forward some 52 perceived benefits and 32 consequences. I classified these benefits into seven categories on the basis of the core benefit perceived (see, Table 4.4). The two most frequency cited categories of benefits focused on physical activity (n=12) and social interactions (n=12).

Table 4.4 Perceived Benefits of Playing Pokémon Go

Perceived Benefits	Frequency
Physical Activity (e.g., being active, fitness, walking, general health)	12
Social Interactions (e.g., meeting players, strengthening relationships, social connections, playing with friends)	12
Nostalgia (e.g., memories of, connections with, childhood and other times)	9
Pleasure (e.g., fun, enjoyment, entertainment)	8
Outdoors and/or Exploration (e.g., being outside, experiencing new places)	4
Mental Health Benefits (e.g., stress relief, engaging the mind)	4
Value of In-Game Achievements (e.g., in-game accomplishments, learning about new <i>Pokémon</i> , transferring gameplay across games)	3

I organized the consequences into six categories in accord with the area of impact of the consequence (see, Table 4.5). The most frequently identified consequences (n=10) referred to ways *Pokémon Go* caused distractions or impaired one's awareness of their surroundings while engaged in gameplay. One notable feature about the consequences identified was that they appeared to be personalized to the individual respondents insofar as participants would tie risks to their own contexts rather than a sense of unified, shared harm.

Table 4.5 Perceived Consequences of Playing Pokémon Go

Perceived Benefits of Playing <i>Pokémon Go</i>	Frequency
Distractions and/or Awareness	10
In-Game Spending	4
Safety	4
Increased Screen Time	3
Addiction/Obsession	3
Emotional Concerns	3
Privacy Concerns	2
Device Usage	2
In-Game Frustrations	1
Health	1

The other two most frequently cited types of consequences entailed safety concerns (n=4) and in-game purchases/spending (n=4).⁵¹ In merits noting that at this point in the interviews, two (2) participants changed their perspective about the fairness of the ‘data for gameplay’ exchange after they had listed what they perceived as the benefits and consequences of *Pokémon Go*.

Overall, the observations emerging from this portion of the interviews revealed that while the participants generally viewed the data exchange as fair and necessary for gameplay, their reasoning often shifted, especially when tasked with reflecting on benefits and consequences together. For some, the reflection led to further discussion and reconsideration about whether the exchange was fair. This observation suggests the presence of an internal negotiation process whereby individuals seem to rationalize data trade-offs based upon a calculating some type of enjoyment to discomfort ratio.

⁵¹ Keeping in mind the topics discussed up to this point in the interviews, I was surprised that only two (n=2) participants reported privacy concerns as consequences.

4.4 Agency in Addressing Concerns

Towards the end of our time, participants were asked whether there was anything that could be done to address the concerns they had voiced and discussed throughout the interview session, and upon whom responsibility for addressing such concerns should fall. The responses fell into four categories:⁵² those relating to individual players (n=10); those relating to Niantic (n=7); those relating to the collective community of *Pokémon Go* players (n=3), and one relating to *Pokémon Go* community opinion leaders.

Of the ten individuals who understood the responsibility for addressing their concerns as resting with individual players, six maintained their individual action(s) could make a difference, two said they could incite change but expressed reluctance to do so, and two maintained that despite having the agency to act, doing so would not achieve much. Among those who maintained individual action could address their needs, four (4) referred to changing privacy permissions, managing gameplay, or deleting the app altogether, with two mentioning raising awareness, and one mentioning only being able to incite change if they had concrete proof of misconduct.⁵³ The two individuals who voiced that change was possible and who expressed a reluctance to do what was needed both said that if they took personal action, it would be enough to address their needs. To this end, one mentioned potentially giving feedback to the developers and the other spoke of being able to manage their gameplay habits. This said, both were steadfast in maintaining that not much change would occur if they were to take these steps.

The seven (7) participants who placed an onus on the necessity for Niantic to bring about change, maintained that, ultimately, nothing could be done to truly address their concerns. By

⁵² Two participants declined to respond to this question.

⁵³ The reason this total amounts to more than six is because one participant mentioned two actions they could engage in to address their concerns.

contrast, none of the participants who said that addressing their concerns was possible, placed any onus on Niantic. Instead, they focused on the importance of collective community of *Pokémon Go* players (n=3) and opinion leaders within this community (n=1) in facilitating the addressing of their concerns.

The ten participants who perceived themselves as having individual agency over their actions believed they had the power to change how Pokémon addresses their privacy or data concerns. However, two (n=2) of these individuals did not believe their concerns could really be addressed because it would require their having to stop playing the game.

When considering whether participants felt they could do something individually to address their own concerns, eleven (n=11) felt they could and ten (n=10) felt they could not. Indeed, my observations suggest that the participants' sense of agency may intersect with both emotional attachment to the *Pokémon* franchise, their connection to the *Pokémon* community, or to established play routines. To this end, it would also depend on the types of intensity of concern they held. For example, of those who believed they could address their concerns, eight (n=8) had, earlier in the interview, mentioned nostalgia for and/or childhood ties to *Pokémon*. Similarly, those expressing concern about surveillance and privacy also tended to indicate they could take personal take action to address their concerns.

Clearly, these speculative observations cannot be applied to a wider audience without being subjected for rigorous empirical scrutiny. Nonetheless, they seemingly point toward a possible association between emotional investment in the *Pokémon* franchise and the level of agency one may believe one is able to exercise when engaging in *Pokémon Go* gameplay.

4.5 Conclusion

The findings in this chapter suggest a disconnect between the participants perceived control over their gameplay choices, what data they believed they were sharing, and their actual comprehension of Niantic's data collection practices as they relate to *Pokémon Go*. While most participants viewed the exchange of their data for access to the game as a fair trade, few were aware of what, exactly, they had consented to and the potential implications thereof. Nonetheless, the participants demonstrated openness to reflection, and degrees of critical awareness of nudging mechanisms and the privacy and surveillance risks tied to Niantic's data practices, even if this awareness was at times inconsistent.

5 Discussion & Conclusion

This thesis has looked at how a small sample of undergraduate *Pokémon Go* players from the University of Ottawa understand, navigate, and respond to the nudging practices employed by Niantic during their gameplay. Central to my project has been an investigation of how externally implemented behavioural guidance, or nudging, was experienced by 23 individuals who self-identified as playing *Pokémon Go* on a regular basis. The observations emerging from this study suggest that levels of awareness about Niantic's data collection and nudging practices varied among these individuals, and that the interpretation of these practices often were connected to individual experiences and identity as well as the contexts in which they played the game.

The thesis consisted of five chapters. The introductory chapter provided an overview of the background and context for the discussions set out in the subsequent chapters. Chapter 2 presented the contextual and theoretical foundations within which my project was anchored. The discussion offered an historically rooted overview of early perspectives regarding digital freedom and interconnectedness, debates about personalization, profiling, and nudging, along with more recent accounts of the exploitation of user data for commercial gain. Chapter 3 set out the research design and methods used to conduct this project and presented the observations that emerged in relation to the questions comprising the first half of the protocol used to interview the participants. Chapter 4 presented the observations that emerged in relation to the questions comprising the second part of the interview protocol. Here, the discussion centered on the participants' awareness of Niantic's data collection practices, their privacy concerns, and their interpretations of the consequences of trading their personal data in exchange for access to playing the game.

The discussion in this concluding chapter is divided into five sections. I begin by providing responses to the sub- and central research questions that guided my project. In section two, I

expound upon the implications of my observations and how they contribute to advancing ongoing discussions of surveillance capitalism, algorithmic identity, and the framing of media literacies. In section three, I discuss some of the main limitations with my project and how they impact upon the conclusions that can be drawn from it. This is followed by a discussion of potential areas for research in the future. In section five, I wrap up by offering some concluding reflections.

5.1 On the Issue of Nudging

My project sought to address the following central research question:

How do regular users of Pokémon Go understand, navigate, and respond to the nudging practices employed in this game?

In seeking to address this question, I investigated three sub-questions:

- 1. Do players understand how, and the purposes for which, the data they generate when playing Pokémon Go is used?*
- 2. What do players sense when their behaviour is being guided while playing Pokémon Go?*
- 3. How do players feel about the perceived costs and benefits associated with trading their data in exchange for access to gameplay?*

Below, I offer responses to each of these questions.

5.1.1 Data Generated By Participants

The first sub-question asked: *Do players understand how, and the purposes for which, the data they generate when playing Pokémon Go is used?*

Despite seemingly possessing a general broad-based awareness of the fact that they generate data when playing *Pokémon Go* and that this data is collected and used by Niantic, the 23 individuals comprising my research sample did not appear to be aware of the scope of data they generated nor the uses to which it is applied. Overall, I observed notable gaps in both awareness and understanding of the types of data to which the participants consented to Niantic collecting about them and the uses to which this data can be applied. Put simply, the individuals with whom

I spoke had consented to allowing Niantic to collect personal and behavioural data about them without having meaningfully considered what it was they had consented to. For example, participants frequently overlooked Niantic's collection of cross-application tracking data and camera/video data and, likewise failed to consider that Sections 2, 5, and 10 of Niantic's Privacy Policy allow for users' movement and location data to be repurposed for advertising and other uses. Some even claimed Niantic does not use their personal data for any advertising, profiling, or personalization purposes.

Zuboff (2019) argues that many platforms, including *Pokémon Go*, amplify the importance of certain types of data as a means of obscuring the additional behavioural surplus data (e.g., players' routines, preferences, and behaviour patterns) about users that is collected, aggregated, and commodified and without which surveillance capitalism could not operate. In the case of *Pokémon Go* this takes the form of location data being prominently framed as necessary for gameplay, while Niantic's Terms of Service and Privacy Policy simultaneously allow for its collection and manipulation of players' behavioural surplus data for advertising and other purposes. Among the members of my research sample, the vast majority of participants emphasized the necessity of location data in gameplay and reported not having read Niantic's Terms of Service nor its Privacy Policy. Given the wealth of research discussing how individuals neither fully comprehend or read these types of formal agreements and policies (see, for example, Hargittai & Marwick, 2017; Barth & de Jong, 2017; Zuboff, 2019; Knijnenburg et al., 2019; Zhu & Zhang, 2025), these observations are not particularly surprising.

This said, my observations did contrast with Zuboff's framing of individuals as generally being unaware of data collection processes. All but one individual in my research sample demonstrated at least minimal awareness of the fact that by agreeing to Niantic's Terms of Service

and Privacy Policy they had consented to having information about their behaviour captured. This awareness, however, did not seem to extend to technical knowledge of how Niantic processes and uses the player-related information it collects. For example, these individuals knew their in-game activity is tracked but were not familiar with how movement patterns can be used to facilitate behavioural profiling. Indeed, they tended to articulate conflicting beliefs about how their data was collected, with views ranging from assumptions that Niantic relied on internal phone tracking of data to claims that *Pokémon Go*'s live map and GPS features were used only to generate random in-game rewards. The disconnect between what individuals claimed to know is being collected about them and their lack of awareness of its use's appears to buttress Barth and Jong's (2019) argument that, when it comes to online privacy, the issue at stake is not simply awareness but rather, the need for individuals to recognize the value of their behavioural data.

There is another facet of awareness that merits mentioning here. Specifically, the difference between participants' awareness, on the one hand, of the types of data they generate during gameplay and what they are comfortable with it being used for on the other hand. Like Marwick & Boyd (2014), I too observed individuals within my research sample differentiating between data they perceived as functional and directly relating to the game (e.g., location and movement data), and data for which they maintained Niantic likely had less use (e.g., personal demographic information, preferences, device data). These participants seemed to engage in some type of case-by-case internal/personal cost benefit analysis to decide what data they felt comfortable relinquishing and when. To this end, the concerns and boundaries expressed by these individuals seemed fluid and largely connected to personal perceptions of the acceptability and functionality of data collection in particular contexts. For example, most participants expressed some degree of comfort with, and understanding of, the collection of location data which they accepted as

necessary for gameplay. However, they drew the line at location data being used for advertising purposes; albeit it without feeling sufficiently strongly about the matter to have consulted Niantic's Terms of Service or Privacy Policy before consenting to their stipulations.

This suggests that individuals' awareness of Niantic's data collection practices and its implications is perhaps not as absolute as Zuboff implies. Although the observations from my research sample cannot be generalized, they do, along with Barth and Jong's (2017) complementary observations regarding the failure of individuals to connect awareness of data collection practices with the broader implications of these processes, suggest that awareness levels about data collection, data analysis, and purposes for which said data are applied are more nuanced than she suggests.

There was one particularly striking aspect about the participants' understanding of the uses to which their data can be applied once collected. Notably, they all indicated believing their data was safe, could not be used for dubious purposes without Niantic experiencing a significant data breach, and was of no real significance. In contrast to the propensity of the participants in my project to downplay the value they attributed to their own data, both Cheney-Lippold (2017) and Zuboff (2019) highlight that, when compiled on mass, such data enables organizations such as Niantic to create detailed predictive models that can be leveraged for further commercial advantage.

Although I was not able to investigate the roots or extent of the participants' seeming trust in Niantic, it seems plausible that it may somehow be grounded in the sense of nostalgia one half of the individuals comprising my research sample attached to *Pokémon*. My assumption for these cases is that long-standing and/or strong connections to the *Pokémon* brand and franchise may have served to bolster a sense that the game, and by extension Niantic's data practices and security

measures, were safe. This hypothesis draws from both Tang's (2017) argument that nostalgia and emotional connection with the *Pokémon* franchise were instrumental to the game's early widespread success and Zuboff's (2019) contention that *Pokémon Go* was designed by Niantic as a strategic project for Google, rather than a nostalgic game revival.

This said, it merits noting that despite expressing personal and nostalgic connections to the *Pokémon* brand, the participants in my research sample did not share any similar connection(s) to Niantic per se. Indeed, less than one third of participants made any mention of Niantic. Conveying limited awareness of both Niantic's role in data collection and the game's operations, let alone its connection to Google, approximately one fifth of the individuals in my research sample referred to Nintendo as operating and owning the game and drew personal comparisons to other Nintendo *Pokémon* games. Although I did not explicitly query the participants about their familiarity with Niantic, it seems plausible that leveraging the familiarity of a popular franchise such as *Pokémon* allows Niantic to exploit users' emotional connections to their pasts and direct their attention away from the structures governing data collection processes. Overall, my observations suggest that trust and familiarity in *Pokémon* as a brand appears to obscure Niantic's role in collecting players' data and the subsequent use of this data for myriad purposes.

To summarize, despite being broadly aware of general concepts surrounding data collection and the uses for said data, my observations suggest that among the members of my research sample the level of understanding about what data was being collected, how, and the purposes to which it was being applied was limited.

5.1.2 Perceptions of Nudging

The second sub-question informing my project asked: *What do players sense when their behaviour is being guided while playing Pokémon Go?*

Behavioural modification is at the core of Zuboff's concept of surveillance capitalism. Specifically, the idea that surveillance capitalism relies on the harvesting of raw behavioural data to inform predictive models that are, in turn, used to better inform behavioural modification practices employed by technology corporations to guide consumer behaviour in ways that can be commodified. To this end, Zuboff also underlines the role of opacity, or the purposeful obscuring of the ways and reasons for which personal information is collected and manipulated under surveillance capitalism.

Although the majority of participants reported believing that *Pokémon Go* guides their behaviour during gameplay, these views only tended to surface when individuals were prompted to reflect upon locations at which they frequently found themselves playing the game and locational or gameplay patterns they noticed when playing. For the most part, their gameplay descriptions suggested that they often did not recognise or experience nudging as the exertion of some external force on their behaviour. However, their reported activities suggested they were nonetheless subjected to this type of behaviour modification. It was manifest, for example, in the ways individuals described routine choices (e.g., "I like to keep the same kind of routes", P5), perceptions of randomness (e.g., "It's all random, I think", P20), and the game's integration into their everyday life (e.g., "Every day on the bus, I'll open it and I'll see like what Pokémon like appear", P16). In each of these examples, there appeared to be some form of an external prompt shaping the behaviours being described, including game mechanics, awareness of award structures, or game notifications. While I cannot confirm that nudging was actively occurring in each of these precise moments, the reports of these participants aligned with Zuboff's (2019) claim that behavioural guidance often exists beyond users' awareness and is obscured from them.

This said, other participants within my research sample did report feeling some sense of

being guided during their gameplay, albeit to different degrees and extents. The comments of these individuals pointed to the presence of a complex experience that involved sensing, to a limited degree, their behaviour was somehow being guided. The sense of awareness articulated by these individuals often was partial, contradictory, and involved framing themselves as being autonomous decision makers while simultaneously describing known nudging practices that are known to be at work when one plays *Pokémon Go*. For example, participants frequently reported making deliberate and personal decisions in spite of their gameplay examples and descriptions simultaneously revealing their engagement in game-based structured routines including finding themselves repeatedly gravitating towards recurring and specific areas.

The assertion of autonomy was repeatedly brought up across most of the 23 interviews, with some three quarters of participants reporting feeling in control of their choices about when, where, why, and how they play *Pokémon Go*. However, when asked about these supposedly autonomous experiences, nearly all these same individuals revealed engaging in behaviours that were suggestive of their being nudged. Examples of this included the ways participants reported checking off daily *Pokémon Go* tasks as part of their daily routine, navigating to areas they perceived to have better in-game rewards, and feeling entirely autonomous in their gameplay behaviours.

These observations are illustrative of Thaler and Sustein's (2008) arguments about platforms being designed to preserve users' sense of autonomy such that they are subjected to nudging practices without necessarily realizing their behaviour is being modified. They also seemingly add credence to Arafan's (2021) findings relating to in-game mechanics fostering false beliefs of random actions that, in turn, reinforce players' perception of autonomy even when being nudged.

In describing gameplay as part of their personal daily routines, participants rarely recognized that such routinization might be shaped or encouraged by *Pokémon Go*'s design features. For example, playing *Pokémon Go* on a familiar route in anticipation of *Pokéstops* or opening the app while on the uOttawa campus were framed as personal habits, despite such activities aligning with its in-game reward structures. The dynamic between perceived and experienced autonomy that I observed echoes Schmidt & Engelen's (2019) findings about choice options being designed to appear personalized by intertwining real-time user data and analytics to promote a manufactured sense of autonomy. In the case of my research sample, participants highlighted their existing daily commitments (e.g., school, transiting) and explained gameplay as fitting within their self-directed schedules. Alternatively, they described their routines in terms of the benefit(s) their gameplay behaviour(s) gave them (e.g. healthy exercise, socialization, enjoyment) and/or gravitating towards community gyms, raids, events. In these contexts, it seems plausible that these individuals were experiencing their gameplay-related choices and generated rewards as autonomous despite the latter likely having been shaped by algorithmic profiling and, possibly, herding.

In contrast to the onus Arafan (2021), Tahaei et. Al. (2021), Zuboff (2019), Schmidt and Engelen (2019), and Cheney-Lippold's (2017) place on behavioural modification systems as being foremost exploitative, manipulative, and disempowering, the observations emerging from my interviews pointed to *Pokémon Go* related nudges being largely perceived as positive. Very few individuals articulated their gameplay-related experiences in terms of "being guided" or having their "behaviour modified." Approximately one third of participants reported using *Pokémon Go* explicitly to explore new areas either when travelling or when visiting new locations, and others pointed to the game having expanded their social circles. Others, likewise, described *Pokémon Go*

as enabling them to engage in physical exercise, explore new areas, take mental health breaks, and connect with others in social settings. In all these examples, the emphasis was consistently on individual autonomy and well-being as opposed to ‘guiding’ practices.

This positive framing of nudging mechanisms echoes Kim et al. (2018) and Koroleva et al.’s (2016) observations regarding the ways in which nudging can be used to promote positive personal consequences (e.g., entertainment, socialization, motivational attributes) as well as Cacchione et. al.’s (2017) argument that personalization tools embedded into digital design can act as positive learning enhancers. On another level, the mainly positive view of nudging manifest within my sample appears to also align with elements of Hargittai and Marwick’s (2016) discussion of the privacy paradox insofar as the participants tended to highlight the immediate benefits to their perceived self-directed choices (e.g., *Pokémon Go* making their transiting to school more enjoyable, playing on specific routes to get more steps), while dismissing or normalizing the privacy risks associated with playing the game.

5.1.3 Perceived Costs and Benefits

The third sub-question asked: *How do Pokémon Go players feel about the perceived costs and benefits associated with trading their data in exchange for access to gameplay?*

Zuboff’s (2019) argues that the obscuring of systemic consequences in a surveillance capitalist society distracts users with short-term benefits while perpetuating a cycle that enables behavioural surplus extraction. In terms of my observations, the phenomenon she describes appeared to be manifest in a seeming mismatch between the weights attributed to the short-term benefits versus the consequences of exchanging data for access to gameplay.

The majority of individuals comprising my research sample were of the view that the benefits they derived from playing *Pokémon Go* outweighed the costs and that the exchange of

their data for access to the game constituted a fair trade. The reported benefits included entertainment, social interaction, along with in-game and other rewards. Some of the perceived costs reported included privacy risks, potential breaching, misuse, or theft of personal data, lessened attention spans, and the wasting of time. However, nearly all participants expressed little-to-no concern about the latter, expressing what they believed to be the low likelihood of such things happening and/or their reliance on Niantic being a sufficiently large company to prevent such things from happening. What was particularly notable about the framing of the exchange of data for access to gameplay was that the cited benefits all reflected some type of tangible or otherwise ‘real’ gratification whereas the cited risks were framed as abstracted possibilities.

This said, the explanations and rationales advanced by more than half of participants in explaining their view of the trade-off were rooted in contradiction, combining expressions of discomfort and displeasure with the collecting of personal data for targeted advertising with claims of having little to no concerns about how their own data might be aggregated and used by Niantic for advertising and other purposes. Other rationales advanced included claims that Niantic’s practices follow industry standards and assertions of being indifferent to Niantic’s actions because other digital platforms also collect their information. To this end, the views expressed by some four fifths of the individuals comprising my research sample were illustrative of Barth and de Jong’s (2017) assertion that individuals tend to improperly assess risks because they lack complete information about the implications of these risks.

5.1.4 Central Research Question

The central research question guiding my study asked: *How do regular users of Pokémon Go understand, navigate, and respond to the nudging practices employed in this game?*

In terms of understanding the nudging practices deployed by Niantic, the participants in this study

appeared to possess a base level of awareness, albeit in an abstract sense, that behavioural modification processes were at play whenever they engaged in gameplay. This awareness took the form of them knowing that varying types of nudging operate during gameplay (e.g., persuading players to log in at specific times, directing players towards specific locales, prompting players to take specific routes), but not recognizing or understanding how it affected them. Specifically, they tended to underestimate the level of nudging manifest in *Pokémon Go* and overestimate both the level of autonomy they exercised during gameplay and the security measures employed by Niantic to protect their data. Indeed, the expressions of agency and autonomy I observed during the interviews starkly contrasted with the very notion of nudging. Specifically, the participants seemed to ‘know’ what nudging is in a textbook sense (i.e., “nudging means my behaviour is being guided in particular ways without my necessarily even realizing this to be so”) but seemed to experience a type of cognitive dissonance or learned helplessness when it came to recognizing that they themselves were being subjected to this type of behaviour modification whenever they engaged in gameplay. In other words, participants grasped the idea of their data being collected and aggregated to create mechanisms to further guide one’s behaviour in particular ways while simultaneously maintaining this phenomenon did not affect them directly and that they exercised ostensibly full autonomy when it came to making game-related decisions.

Brand loyalty to and/or nostalgia for the *Pokémon* franchise seemed to morph into trusting Niantic in a manner that seemed to play a role in shaping how participants navigate nudging practices. Specifically, it appeared these sentiments contributed to individuals being less skeptical about having their data collected and the uses to which it might be put by Niantic. Indeed, these sentiments of familiarity, loyalty, and trust seemed to provide a buffer, albeit to varying degrees, against any sense that Niantic’s behaviour modification activities directly impacted upon their own

gameplay related behaviours.

The participants' understanding and navigation of Niantic's nudging practices gave rise to a range of responses that appeared to be filtered both through their individual perceptions of self and how they framed nudging in relation to their sense of agency and autonomy. This was evident, for instance, in the frequently observed framing of nudging practices as aligning with, or otherwise being a 'normal' part of, the participants' day-to-day lives. Central to this process was what I hypothesize to be a desire to protect one's sense of personal control. To this end, the participants' reactions to what I described during our discussions as examples of behaviours being nudged (e.g., playing to maintain daily streaks, following specific game-prompted routes, receiving notification reminders to send friends in-game gifts, visiting *Pokéstops* or gyms for specific rewards) often entailed their countering that the behaviour(s) in question were simply linked to the contexts in which they were experienced (e.g., transiting, being among friends, being at school, visiting new areas.) and at other times directly triggered by in-game prompts (i.e. daily streaks, in-game incentives, push notifications). In both situations, nudges were interpreted as aligning with individuals' routines, desire to play, or willingness to interact others as opposed to being manipulative or exploitative. What participants described appeared to resemble pattern recognition rather than a conscious awareness of nudging. Specifically, they tended to observe recurring prompts and design cues as contextual elements of gameplay rather than deliberate efforts to guide or persuade their behaviour.

When the topic of in-game choice prompts came up during our discussions, 13 individuals claimed they resisted nudges by changing their privacy settings, sticking to their predetermined route(s) during gameplay despite being pointed in interesting directions, and refusing to spend money in-game as they played or at any commercial enterprises to which they believed themselves

to have been guided. This said, it merits noting that these same participants did not associate choice prompts with nudging.

Taken together, the behaviours reported by the individuals comprising my research sample point to a response process that is largely shaped by an awareness of nudging as an abstract phenomenon that primarily affects by others. In other words, these individuals seemed to largely understand, navigate, and respond to the nudging practices employed in *Pokémon Go* by acknowledging their existence in an instrumental sense while simultaneously viewing them as having no notable impact on their individual agency and autonomy. Moreover, most of the people comprising my research sample tended to view nudging practices as offering opportunities for positive outcomes as opposed to being manipulative, exploitative, or somehow disempowering.

5.2 Key Contributions

The observations presented in this thesis contribute to advancing the understanding of nudging in two complementary ways. First, the observations offer an empirical basis, albeit of limited strength, for challenging assertions that nudging practices are foremost manipulative, exploitative, or somehow disempowering. In so doing, they suggest a need for a more nuanced understanding of myriad ways in which individuals perceive, negotiate, and integrate the effects and affects of the nudging practices employed by online platforms into their lived experiences and identities than often is advanced by critics of surveillance capitalism, algorithmic systems, and experiences. Second, the observations about the diverse ways in which individuals interpret their encounters with nudging practices suggest possible grounds for reimagining how the understanding of data literacy might be approached.

5.2.1 Theoretical Contribution

The individuals comprising my research sample consistently underestimated and minimized the degree to which behavioural modification practices underpin their gameplay experiences, while simultaneously overstating their agency, autonomy, and understanding of in-game mechanics. Indeed, my observations challenge notions of an aware/unaware dichotomy insofar as they are suggestive of people manifesting selective awareness. To this end, participants acknowledged the existence of nudging practices in an instrumental sense while simultaneously viewing them as having no notable impact on their individual agency and autonomy, often reframing them as positives that aligned with their routines, goals, or sense of identity.

Nudging, in other words, was reported as something quite different than the manipulative or exploitative external force that Zuboff (2019), Cheney-Lippold (2017), or Schmidt and Engelen (2020) suggest. Echoing Thaler and Sustein's (2008) claims about nudging practices maintaining the illusion of user autonomy, the views conveyed by the individuals comprising my research sample were illustrative of not realizing instances in which one's behaviours is being modified. Indeed, they seemed to experience nudging foremost as a self-guided identity-affirming practice. That is, the participants consistently described their experience and navigation of the nudging practices employed by Niantic in ways that denied the presence of behaviour modification and instead conveyed their guided actions in ways that aligned with their worldviews and perceptions of self on the one hand, and their brand loyalty to and/or nostalgia for the *Pokémon* franchise and trust in Niantic on the other hand.

This observed pattern, where participants deny being guided while simultaneously describing behaviours indicative of guidance, reinforces concerns that perceived autonomy in digital environments may differ from the actual degree of control individuals possess (Zuboff,

2019; Bucher, 2018; Schmidt and Engelen, 2020; Gillespie, 2021). These concerns assume that behavioural guidance depends upon users being unaware of its existence. However, if users have at least some awareness of nudging, as my observations suggest, then the current explanations for how nudging and guidance operate cannot assume it is foremost the result of ignorance. Instead, they point to individuals interpreting nudging through their own personal lenses and worldviews and, in so doing, exercising agency in ways that promote further participation even when contradictions emerge. This, in turn, calls into question suggestions that players are apathetic about the consequences of these same in-game mechanics.

5.2.2 Practical Contributions

Current focuses on data literacies tend to assume that promoting awareness of risks will lead to more cautious user behaviours (Mund & Bergner, 2024; Schubert et. al, 2022; Dienlin & Trepte, 2023). The essence of such perspectives rest on an assumption of humans being rational actors who, when exposed to knowledge, alter their behaviour accordingly. The observations emerging from my project challenge this assumption insofar as the individuals comprising my research sample were capable of engaging in discussions about privacy policies, data practices, and in-game mechanics, albeit with varying degrees of accuracy, but couched their claims in personal estimations of fairness, identity, freedom, trust, and nostalgia. Put simply, their responses appeared to be rooted in far more than simply technical knowledge (or lack thereof).

Indeed, the participants awareness and understanding of nudging practices appears to have been anchored in a contextual identity-shaped negotiation of sorts. They were able to recognize risks but also considered them distant, minimal, abstract, and/or as being outweighed by more immediate gratifications such as entertainment, socialization, and other rewards. This, in turn, may have implications for strategies aimed at promoting data literacy insofar as it suggests that

forefronting the improving of individuals' knowledge of risks in the absence of any substantive consideration of day-to-day interactions with myriad platforms may overlook how individuals interpret and weigh the costs versus benefits of their online activities.

5.3 Areas for Future Research

The purpose of my project was to investigate how a small sample of undergraduate students at the University of Ottawa who self-identified as regular *Pokémon Go* players understood, navigated, and responded to the nudging practices embedded in the game. The observations emerging from this investigation point to four topics warranting further research:

1. *Brand Loyalty, & Trust in Digital Environments.* Issues of nostalgia and brand loyalty repeatedly came up during the interviews. This is important because emotional attachment and familiarity may blur the boundaries between autonomous versus guided participation. If and when trust can affect perceptions, users may be more easily persuaded to behave in predictable ways by design cues without recognizing the influence of these design factors. Bearing this in mind, future research could investigate how nostalgia or emotional associations (positive and negative) potentially shape how individuals respond to nudging practices of digital platforms. Such research could involve conducting a mixed-methods study involving interviews and simulated exercises where responses to the nudging practices of differing digital platforms are examined in relation to levels of brand loyalty and nostalgia.
2. *Awareness of Being Nudged.* The participants in my project claimed to act autonomously while, also, describing behaviours that often exemplify externally implemented behavioural guidance, or nudging. This intersection raises questions about the degree to which individuals are consciously aware of nudging. Future research could experimentally test levels of awareness by designing studies where participants are asked to navigate digital spaces in real time and

identify whether specific choices or behaviours they make are self-directed or externally influenced. Such an approach could combine self-reporting with behavioural tracking or simulation tasks to assess perceived autonomy versus how individuals actually make decisions. This would help shed light on how awareness of nudging functions, and how deeply our recognition of guidance can shape behaviour.

3. *Framing Concern.* Throughout the interviews conducted for this project, participants' expressions of concern about data privacy shifted in accord with how questions were phrased and with when in the conversation these topics arose. Some participants initially emphasized risks and later minimized their concerns, framing nudging in more neutral and benefit-oriented terms. Future research could look at variations in the framing and presentation nudging-related communications, by conducting interviews that compare similar themes across varying phrasing, tone, and context to examine the extent to which concerns about privacy are a product of framing rather than belief.
4. *Socio-Economic Ties to Mobility and Data Literacy Gaps.* Several participants' accounts of their gameplay experiences with *Pokémon Go* suggested that socioeconomic circumstances may shape how individuals access, engage with, and interpret digital environments. Differences in access to the internet, transportation, and physical mobility appeared to influence gameplay insofar as they determined when, where, for how long, and how often individuals could participate in and access the game, as well as the extent to which they engaged in events or location-based features. These observations direct attention to understanding how access to resources and social positioning influence the ways in which individuals navigate nudging.

5.4 Limitations

The observations and conclusions emerging from my project are constrained by some limitations that must also be acknowledged. First, my sample consisted of only 23 participants. Among other things, this means that none of reported observations can be generalized beyond my research sample. This said, I maintain that although my observations may not be illustrative of how *Pokémon Go* players understand, navigate, and respond to the nudging practices embedded in the game, they may be indicative or otherwise reflective of this phenomenon.

A second limitation pertains to my having had participants self-identify as regular players of *Pokémon Go*. In launching the project, I was aware that a potential downside of such an approach was the likelihood of variability that likely would accompany participants' varying interpretations of the term 'regular.' However, I opted to stick with such an approach on the basis that it would also facilitate a more open and inclusive understanding of participants' perceptions, free from predefined labels. However, this approach also introduced some variability in how participants interpreted the term "regular", ranging from hourly, daily, to periodic engagement. While this range between interpretations of "regular" made comparison of engagement levels more complex, it also provided a richer image of how nudging and awareness manifest across use.

A third limitation pertains to my ability to find regular players of *Pokémon Go* insofar as I relied upon the University of Ottawa's ISPR program to recruit participants. This meant that all participants in my project were enrolled part of the university's psychology program. I cannot help but wonder whether the observations that emerged from my research may have differed, and how, if the research sample was comprised of individuals from a wider range of Faculties.

Lastly, the period of time over which the interviews were conducted may have also served as a potential limitation. All interviews were conducted between April 2023 and October 2024,

and during this period notable in-game updates were made to *Pokémon Go* including the addition of the “Routes” feature, new perks, and general software updates. Although these updates are unlikely to have impacted the responses provided by the 13 people I interviewed after July, 2023, it seems plausible that those with whom I spoke prior to the updates may have offered additional details in their responses had the discussions with them also taken place after that date.

5.5 Conclusion & Final Word

As an avid participant of digital spaces, my interest in researching nudging and related matters of digital identity began in early adulthood and was amplified in a graduate-level course about algorithmic cultures in which I was enrolled in Fall 2021. It was in this course that I was struck by how tech organizations handling large quantities of data withhold information from users while also benefiting from users’ identity data by employing it for predictive modelling. This became the footing for my Master’s thesis.

Due to my own experience and interest with varying data collection methods across internet spaces, I expected to find more widespread and stronger levels of awareness and knowledge about corporate data practices than I ended up observing in my project. To this end, I was surprised by just how closely the participants’ responses and views parallel claims advanced in surveillance capitalism discourse, particularly about the illusion of user autonomy. This became apparent as participants discussed data collection and privacy, not through awareness or ignorance, but through complicated and contradictory understandings of them both. I had originally hypothesized my findings would demonstrate individuals’ perceptions of data collection and privacy to not be dichotomous, and my findings supported this by showing layers of complexity and nuance across participants experiences. However, I had also anticipated clearer distinctions between participants’ perceptions of data use and privacy, but the discussions only further blurred boundaries between

these topics. Overall, I was pleased with participants' openness to further discuss, and willingness to acknowledge ways their thinking was flawed or confusing. They were consistently willing to question their reasoning, voice uncertainty, and question their own reasoning. There was a willingness to understand that I observed, despite participants contradicting themselves frequently. This kind of reflexive engagement, though far from perfect, signals a meaningful step towards greater awareness, and inspired me to feel hope for an overall shift in perceptions, as well as hope for change over time and ethical alignment to better meet users' needs.

In today's digital landscape, nudging practices and choice-mechanics are manifest across nearly all virtual spaces. As digital technologies continue to evolve, whether in the space of mobile gaming or across a variety of digital domains, data collection methods and their implications for predictive modelling and algorithmic profiling are at the forefront of platform design giving rise to tremendous asymmetries of knowledge, power, and awareness. In such a context, one cannot help but question whether fairness in information exchange between service providers and users can ever be negotiated.

Fortunately, my research observations offer a glimmer of hope. Individuals are interested in learning and, although they may not understand the scope of what it *is* that they do not know, they generally believe in their personal agency and ability to incite change. Although there is still a long way to go in terms of educating wider populations about data collection, nudging, and algorithmic profiling, the results of my research lead me to believe we can make significant changes over the next decade if we prioritize transparency, ethics, and awareness.

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Appendix A: Wohlmacher's (2018) interview guide

Appendix A: Interview Guide

Topic list:

1. Connectivity and integration of the personal assistant
2. Motivations and attitudes towards the usage of the personal assistant
3. Daily practices and routines
4. Usability and experiences with the personal assistant
5. Emotions and feelings evolving from the usage of the personal assistant
6. Personal opinion about the future perspectives of the personal assistant as an emerging technology

Questions:

Factual & demographic questions	1. Where are you currently living? How old are you?
	2. Who else in your household is using the personal assistant?
	3. How widespread are personal assistants in your surrounding of family and friends?
Connectivity and integration of the personal assistant	4. How many devices do you have at home? Where is this/are they placed? Which one is used most?
	5. Do you have any devices or other objects connected to your personal assistant?
	6. What applications and accounts are connected with your personal assistant (e.g., foodora, Amazon, Spotify)? Are there some you have chosen not to use with the device but have separately?
Motivations and attitudes towards the usage of the personal assistant	7. Why did you decide to use a smart speaker? What motivates you to integrate it into your home environment?
	8. Do you have any concerns about using the personal assistant?
	9. What kind of data do you think the device produces about you?
	10. What kind of data do you think the device requires from you?
	11. How would you describe the attitude of your friends and family towards the technology of personal assistants?
Daily practices and routines	12. How integrated is the personal assistant in your daily routines? When was your everyday life at home more convenient or daily

	routines more facilitated (e.g., fastened, simplified) since you have a personal assistant? 13. Which features are particularly useful and do you use most? 14. How has the personal assistant changed your everyday life and routines? Was this a gradual process or more immediate? 15. Did new daily practices emerge since you have a personal assistant? 16. Do you test out new features of the personal assistant? Are these mostly helpful and useful or not that important or useful to you? 17. Are you using specific functionalities together with someone else (e.g., playing games, sharing grocery shopping lists)? 18. Do your children talk with Alexa?
Usability and experiences with the personal assistant	19. How do you experience the usability of the personal assistant? Is it easy to give instructions that follow a correct answer or conduction of your request? 20. How natural do you experience talking to or with the device? How comfortable are you in talking with it? 21. What are the most surprising experiences you have had with the personal assistant? 22. What is the most frustrating experience you have had with the personal assistant? 23. How useful has the overall integration of the personal assistant in your daily life been in your opinion?
Emotions and feelings evolving from the usage of the personal assistant	24. Which emotions do you associate with the usage of the personal assistant? ➤ Do you remember any experiences you felt uncomfortable because of the personal assistant? ➤ Do you remember any experiences you felt particularly happy while using the personal assistant? ➤ Have you sometimes been stressed or annoyed by the personal assistant? 25. What differentiates the usage of the personal assistant from other devices like your smartphone, tablet or laptop? 26. How do you feel about the presence of your personal assistants

	at home when you are not talking to it?
	27. How do you feel about your interactions with the personal assistant?
	28. How personable do you experience the interaction with the personal assistant? Is there an emotional connection or is it just a functional usage?
Opinion and future perspectives of the personal assistant as an emerging technology	29. What is so motivating to you about personal assistants? What makes these personal voice assistants exciting for you?
	30. What do you personally get out of your work on this topic?
	31. Who do you think is the current target group of personal assistants? Do you think it will change in future?
	32. How do you think will personal voice assistants disseminate in Europe? Do you think it will develop into a widely used mainstream product of society?
	33. How will the personal assistant change people's daily life?
	34. In what ways do you think the integration of personal assistants in Europe will differ from the United States?
	35. How will the technology of personal assistants change and improve in the next years?
	36. How do you think will personal assistants contribute to businesses in future?

Appendix B: Anissa's (2018) Focus Group Protocol

Appendix B

Focus Groups Guide

Focus Group Discussion Guide

Consent Process

Consent forms for focus group participants will be sent in advance by all those seeking to participate. Participants will be asked prior to the focus groups discussion if there are any questions regarding their participation and about the aim of the research. A consent form sheet will be provided, to be sure that the information from today will be protected and used only for the outcome of this research.

Introduction:

1. Welcome

Welcome and thank you for participating in this focus group discussion. My name is Tamara and I will be your focus group moderator. The aim of today's discussion is to explore the different opinions of how VAPA (Voice Activated Personal Assistant) is perceived as a part of your daily life activities. VAPA technologies are such as Siri on iPhone, Amazon's Echo or Google's home.

Is there anyone here who has never experienced being in a focus group discussion before?

I will briefly explain the process of how the discussion will be done. I will ask several open questions and you are able to answer them freely without any restrictions. As a moderator, my role is simply to stimulate the conversation and to engage your participation in this discussion.

Before starting the discussion, I would like to remind you that the discussion will be recorded for the research purposes and all conversation will be shared only in this room. The discussion will last for approximately one hour. Does anyone have any questions before the session starts?

(Open for any questions)

Great, if everything is clear, I will start the session and the recording.

2. General personal and initial technology questions

- Okay, can everyone introduce yourself by answering the following questions:
 - What is your name, where are you from, and do you see yourself as someone that keeps up with the latest technology gadgets? (e.g. newest phones or laptop?)
 - *Prompt question:* What do you think are the main reasons of keeping yourself updated with these latest gadgets
- *Attitude and behaviour towards personal assistants*
- Now that I know most of your backgrounds, I would like to start with asking questions regarding our topic of today's discussion. What do you think when you hear about VAPA?
 - *Prompt question:* Can you name examples of technologies you mainly associate this word with?
 - *Note – if respondents mention Alexa or Google home, these are not available in the Netherlands yet, ask:* Have you experienced using these home devices?
- How often have you used a personal assistant, for example on your phone, such as Siri or Google Now? (active and non-active users)
 - *Prompt question (active users):* For what kind of activities are you using this technology for? What are your main reasons of using this?
 - *Follow up question:* Do you think using this technology is helpful for your daily activities?
 - *Prompt question (non-active users):* What are your reasons for not using this technology?
- In this focus group, we have an example of one of these technologies, Google Home – we will be using this more later, but for now:
 - *We have about X minutes left in our focus group now. OK Google, please set the timer for <X minutes>.*

3. Interaction and perception of participants' regarding personal assistants in general

- When you hear about Google's home or Amazon's Alexa, what associations do you have with this technology?

- *Follow up question:* Are you familiar with what this technology is capable of? I will show you a video to make yourself familiar with its function and usage.
- (Showing video) (Discussion)
- After seeing this video, what do you think about it? What do you see as positive and what are you concerned about?
- (Open for questions)
- (Presenting stimulus material: Google's Home). Does anyone want to try out the device? I have set list of questions here that you can ask. Start with "Ok Google" or "Hey Google"
- (Activity begins)
 - **Set list of questions:**
 1. Sing me a song
 2. Play a HipHop song
 3. Ask for a recipe
 4. Please find me the nearest Italian restaurant
 5. Ask me a riddle
 6. Turn on the lamp
 7. Send an email to someone
 - *Prompt questions:* How do you feel when you experience the interaction with this technology? What strikes you the most from the use of this technology?
 - *Prompt question:* Do you have any concern or opinions regarding the brand of the device itself?
- When you experience this technology, what do you think about the fact that it connects to your personal data such as calendar, contact lists and email? Do you have any concerns about this?
 - *Prompt question:* How do you feel about sharing your personal data? What type of personal data do you feel more willing to share? What are you less willing to share?
 - *Prompt question:* Are you concerned about your personal data being used by third parties or companies that are connected to these devices?

(Discussion)

4. *The future of technology*

- Lastly, after using and performing tasks with this personal assistant, I am interested to know your opinions regarding its future use. How do you feel about the constant innovation of this type of technology that it is becoming more integral in people's daily activities?
 - *Prompt question:* What do you feel are the potential benefits of you in using VAPA?
 - *Prompt question:* If you would use it in the future, for what types of activities you would use it for? (at the office, household jobs, transportation)
 - *Prompt question:* What do you think are limitations or drawbacks of this technology?
- How do you feel about the use of personal assistant in the future?
 - *Prompt question:* Taking into account the human and non-human interaction, do you think the use of personal assistant would change how people interact in the future?
- What do you think are the impact of personal assistant in daily life practices?
 - *Prompt question:* Do you think that this technology would have a big impact in the society?
 - *Prompt question:* Do you have any concerns or fear if this technology would be more commonly used in the future?

(Discussion)

Moderator: That concludes our focus group discussion. Are there any last comments or remarks regarding the topic discussed that you might want to share?

Thank you so much for coming and sharing your thoughts and opinions. If you have additional information that you did not get to say in the focus group, please feel free to write it on this evaluation form. I will share the outcome of the discussion to anyone who is interested.

Materials and supplies for focus groups

- Sign-in sheet
- Consent forms (one copy for participants, one copy for the researcher)
- Evaluation sheets, one for each participant
- Focus Group Discussion Guide for Facilitator
- 1 recording device
- Notebook for note-taking

Appendix C: Mols et. al.'s (2021) Focus Group Conversation Guide

Appendix 3: Focus group conversation guide

- *Emphasize during conversation on interaction between participants, questions used as prompts when needed* -

- **Opening**
 - o Welcome, introduction moderators, procedures, and topics
- **Introductions**
 - o First name and indication of whether you closely follow technological developments or not at all. E.g. gadgets like Google Home, fitness tracking devices such as Fitbit, or do you want to use the newest mobile phone?
- **Influence of technology (optional!)**
 - o Share thoughts about influence of technology on life. Think about last 5 years, how did technology change daily life?
 - o At work or at home? Convenient, harmful or annoying? Why?
- **IPAs on phone**
 - o Intelligent personal assistants: First, voice-activated assistant on mobile phone. Does anyone uses Siri, Google Assistant, Microsoft Cortana or similar service?
 - o Example of uses? Why IPA and no other means?
 - o Never used? Why not?
 - o Benefits?
 - o Drawbacks?
- **Smart speakers**
 - o Smart speakers: any associations by Amazon Echo, Google Home or Apple HomePod?
 - o Does anyone own such a device? For which tasks / activities?
 - o Who knows what these devices can do?
 - o Google Home expected later this year in NL,
 - o Activity: watch Google Home commercial as introduction prompt
- **Interactive activity – participants try-out device**
 - o Try out – start with *OK Google* or *Hey Google*, some suggestions on paper:
 - Turn on the lamp
 - Sing me a song
 - Play a Hip-hop song on Spotify
 - What is the weather forecast for Rotterdam this evening?
 - Find me the nearest Italian restaurant
 - How can I get to Rotterdam central station by public transport?
 - Ask me a riddle
 - Schedule my doctor's appointment for Thursday at 11
 - o How do you feel when you interact with Google Home?
 - o What strikes your attention?
 - o (Future) uses of these devices?
 - o Convenient or helpful? Why?
 - o See yourself buying one in the future? Why (not)?
 - o For what type of tasks / activities? Work, in the house, in traffic?
- **Benefits and drawbacks household IPAs**
 - o Benefits devices like Google Home?
 - o Possibilities to connect with online accounts and services?
 - o Agenda?
 - o Other devices? Lights, TV, fridge?
 - o Drawbacks?
 - o When do devices listen?
 - o Only when you use the 'trigger word' or always?
 - o Are there things you don't want to share with a household IPA?
 - o Thoughts about data collection?
 - o Information sharing with mother company
 - o Different when it's Google, Amazon or Apple?
 - o Concerns peers?

- Connected services (Netflix, Spotify)
 - Ideas about registration of when you watch/listen, turn on the light?
 - Connect to agenda?
 - Predictive functions of IPAs?
 - *E.g. phone can see meeting in agenda at 9 and Google Home will tell you that there is a traffic jam and advises you to take a different route to work.*
 - Additional benefits and/or drawbacks?
- **IoT**
 - Connected to other technologies - Internet of Things
 - Examples of smart and connected devices in use?
 - Smart TV, smart fridge, washing machine?
 - Views on interconnected devices?
 - Ideas about predictive functions of interconnected appliances and devices?
 - *E.g. smart fridge knows that you've run out of milk and automatically adds it to your Google Home shopping list.*
- **Inventory of other ideas or topics that came up during conversation**
- **Closing**

Appendix D: Interview Protocol For My Thesis

Interview Questions:

1. For how long have you been playing Pokémon Go?
2. How many times per week do you play Pokémon Go? Per day?
3. What is your average amount of time spent playing a typical session of Pokémon Go?
4. How did you first learn about Pokémon Go and what made you decide to start playing it?
5. What's the first thing that comes to mind when you think of Pokemon Go?
6. Please can you walk me through a typical session of you playing Pokémon Go?
7. Where are the main areas you tend to go to or end up at while playing Pokémon Go?
8. Have you ever been surprised by the location of a Pokémon or PokéStop in the game?
9. Please walk me through how you interact with your surroundings while you play.
10. Think about some of the things that catch your attention as you play. What are they? What are the commonalities between some of these things?
11. Do you ever feel like the game is intentionally directing you to recurring or specific areas?
12. Before playing, did you read the terms & conditions for the game?
13. Do you know what types of information the game uses to allow you to play?
14. Are you aware of the additional information which you consented to and what that information is being used for?
15. Do you have any concerns about how your personal data is used during and after gameplay?
16. Do you use any strategies to protect your data or privacy while playing Pokémon Go?
17. Do you feel that the trade-off or exchange of your data in order for you to play is fair?
18. Are there benefits that you derive from playing the game?
19. Are there any negative consequences that result from you playing the game?
20. Do the benefits outweigh the consequences or vice versa?
21. Given the concerns you've expressed, do you think there's anything you could do to address those concerns?

Appendix E: Participant Recruitment Statement

Université d'Ottawa
Faculté des arts
University of Ottawa
Faculty of Arts

55 Laurier Avenue East
Ottawa ON K1N 6N5
tél/tel. 613 562-5238
téléf/fax. 613 562-5240

www.uOttawa.ca

Project Title: *The Effects of Online Nudging on Individuals' Behavior: The case of Pokémon Go*

MA Candidate: Sarah Alnemer

Email: [REDACTED]

Supervisor: Dr. Daniel Paré

Email: [REDACTED]

Purpose of the Study: This project is being conducted in partial fulfilment of Sarah Alnemer's M.A. Thesis. The purpose of the study is to investigate awareness of online nudging and other behavioral modification techniques employed in Pokémon Go among regular players of this game. The data collection strategy for this project involves conducting semi-structured interviews with a sample of 20 undergraduate students who play Pokémon Go regularly and who are currently enrolled at the University of Ottawa.

My participation consists of participating in an interview. The total time needed to complete this meeting is approximately 45-60 minutes. I have been informed by Sarah Alnemer that the meeting will be audio recorded. Following this meeting, I will be provided with a transcript of the discussion and asked to review it for accuracy, and to provide any additional comments or feedback. Upon completion of the session, the recordings will be transferred to a secure password-protected external hard drive. These recordings will only be used for analysis purposes relating to this project.

I have been advised that our discussion will focus on:

- My experiences playing Pokémon Go
- My awareness of how Pokémon Go directly and indirectly guides my behaviour during gameplay
- My awareness of the types of data collected by Pokémon Go
- My perspectives about the data/gameplay trade-off

Risks: I understand that my participation in this study as an interviewee entails minimal risks and confirm that the information I provide is being disclosed on a voluntary basis.

Confidentiality and Anonymity: I understand that any information I share will be, and will remain, anonymized, and that it only will be used in relation to Sarah Alnemer's Master's thesis research as well as any subsequent academic publications emerging from this project. I also am aware that only Sarah Alnemer and her M.A. Thesis supervisor will have access to any information I disclose, and that my anonymity will be protected throughout all stages of the project by removing any identifying characteristics from both the information I provide and its analysis.

Conservation of Data: The interview materials, including audio recordings of the meeting, electronic and print versions of the transcripts, and electronic and print notes will be conserved by Sarah Alnemer for a period of five years in a secure manner using a password-protected USB

drive. Both the drive and the printed materials will be stored in a locked cabinet in Sarah Alnemer private home office. Only Sarah Alnemer and Prof. Daniel J. Paré will have access to the discussion materials.

Benefits of the study: My participation in this study will contribute to my gaining research experience and first-hand knowledge about empirical research procedures and, in so doing, complement the education I receive in my program of study. I will also have the opportunity to voice my own interpretations, understanding, and concerns about algorithmic profiling and nudging, and to potentially acquire more knowledge about how to protect my personal information when engaging social media and gaming platforms like Pokémon Go in my daily life.

Compensation: In accord with ISPR guidelines, my participation in this study entitles me to compensation of 1 course credit point. If I choose to withdraw from the study, I may still be eligible to receive the points for my participation subject to established ISPR policies and regulations.

Voluntary Participation: I am under no obligation to participate in this audio-recorded interview and can withdraw from the study at any time and/or refuse to answer any questions without suffering any negative consequences. If I choose to withdraw and do not want my data to be used, I can contact the researcher and provide my ISPR # in order for my data to be removed.

Acceptance:

I, _____, agree to participate in the above research study being conducted by Sarah Alnemer.

If I have any questions about the study, I may contact either Sarah Alnemer or Prof. Daniel J. Paré.

If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5. Tel.: 613-562-5387 Email: ethics@uottawa.ca

I have shared a signed copy of this consent form with Sarah Alnemer and have retained a signed copy for my records.

Participant's signature:

Date:

M.A. Candidate's signature:

Date:

Appendix F: Ethics Approval

Université d'Ottawa

Bureau d'éthique et d'intégrité de la recherche

University of Ottawa

Office of Research Ethics and Integrity

S-02-23-8535 - REG-8535 - Certificat d'approbation éthique / Certificate of Ethics Approval

(English message follows)

Cher/Chère Sarah Alnemer,

Veuillez trouver ci-joint le certificat d'approbation éthique pour le projet intitulé «The Effects of Online Nudging on Individuals' Behavior: The case of Pokémon Go».

Le certificat est valide jusqu'au : 27-02-2024

Recherche financée : veuillez faire suivre une copie du certificat au [Service de gestion de la recherche](#).

Si vous avez des questions, n'hésitez pas à communiquer avec le Bureau d'éthique à ethique@uottawa.ca ou en composant le 613-562-5387.

Vous pouvez voir votre demande en vous connectant à votre compte [eReviews](#).

Cordialement,

Riana Marcotte
Responsable d'éthique en recherche

Ceci est une réponse automatisée, merci de ne pas répondre à ce courriel.

Dear Sarah Alnemer,

Please find attached the certificate of ethics approval for your research project titled "The Effects of Online Nudging on Individuals' Behavior: The case of Pokémon Go".

This certificate is valid until: 27-02-2024

Funded research: A reminder that you must provide a copy of this certificate to [Research Management Services](#).

If you have any questions, please contact the Ethics Office at ethics@uottawa.ca or by telephone at 613-562-5387.

You can view your project at any time by logging into [eReviews](#).

Best regards,

Riana Marcotte
Protocol Officer

This is an automated message. Please do not reply directly to this email.

Attachement(s) / Attachment(s)
[approvalLetter1677603826659.pdf](#)

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