University of HUDDERSFIELD
University of Huddersfield Press

Journal of Play in Adulthood
Available open access at:
www.journalofplayinadulthood.org.uk

Journal of Play in Adulthood

Play where you are

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Keywords:
Location-based games

Site-specific games

Libraries

ABSTRACT

This article argues for the position that libraries should develop, host, and encourage the community-creation of location-based games. While Pokémon Go has demonstrated that there is a sizable population ready to go outside to play, it also has left the impression that outdoor games require expensive mobile app-development. But very simple location-specific games can be designed by libraries that can help their community directly experience local sources of underappreciated spaces of natural beauty, help them discover overlooked historical places and their stories, and encourage them to stumble upon local art embedded in the landscape. Rather than only provide online escape rooms for those who may already feel confined by pandemic-related public health restrictions, libraries can create positive mental-health interventions that can also create the potential for a deeper connection between its readers and with where they live through site-specific games. This paper will provide examples of web-based and analog location-based games including a prototype developed by the author.

Introduction

There are many definitions of games. One such definition comes from Canadian philosopher Bernard Suits who suggests in his book *The grasshopper: games, life and utopia* that 'playing a game is a voluntary attempt to overcome unnecessary obstacles'' (Suits, 2014, p. 55). As a Canadian librarian, I would like to suggest a heretical idea: libraries are not unlike games in that they are also unnecessary. Notwithstanding the occasional demanding school assignment, the use of a library is not mandatory. Like a game, the library waits for you to approach and choose how you would like to engage with it. The library exists as a gift from the community that supports it. Like a game, the library is not an object of spectacle but a locus of participation.

After a literature review, this paper will suggest that libraries should seek ways to help improve the mental and physical health of their community. It will describe several examples of outdoor location-based games designed both for and around libraries. This paper will bring attention to the particular affordances that these location-based games possess, which libraries might particularly value, through the use of Scott Nicholson's (2010) SNAKS Model of library game experience. Readers will be invited to consider some pathways by which they might bring location-based games to their libraries.

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Games in the library

While the library's identity is still firmly associated with books (Grant, 2015), libraries and games have a long and intertwined history together from at least the 1850s (Nicholson, 2013) that continue on to this day. Colleges and universities with game design courses are supported by libraries that collect and make available games to students and educators. Public and school libraries collect and lend out tabletop and video games for both entertainment and educational purposes. The American Library Association (ALA) has been promoting games and gaming in a library context since 2011 through its Games and Gaming Round Table (ALA Games and Gaming Round Table, 2012). For the purposes of this paper, it is assumed that the reader does not need to be convinced that games should continue to maintain their presence in the collections, teaching, and outreach work of public libraries and the libraries of institutions of higher education.

Site-specific location-based games

This paper will argue for the adoption by libraries of a specific type of game: the site-specific location-based or *locative* game. As this genre of game is generally designed to be experienced outdoors *in-situ*, this text does not include those experiences that arise from largely constructed environments such as escape rooms, haunted houses, and interactive theatre experiences.

There is no tidy definition of the location-based game but it is understood to be a part of a larger family of games that include pervasive games, reality games, alternative reality games, augmented reality games, geogames, big games, hybrid games, and urban games (Montola et al., 2009, p. xix). While site-specific games and locative media have been developed widely in creative practice (Tuters & Varnelis, 2006), designed to teach history (Schrier, 1999), geography (Schaal, 2020) and other disciplines (Ribeiro et al., 2021), and have been made available for serious play (LeMenager & Eklund, 2017), a literature search did not uncover a text that summarizes the practice of developing site-specific location-games in a library context.

Recently published texts that examine related pervasive games in libraries include the 2020 book *Locally played,* which explores 'local community games as game-based systems that involve real-world actions and are used to strengthen a place–based community' (Stokes, 2020). A systematic review of scavenger hunts held within libraries determined that while acting as a longstanding popular means of outreach and instruction activity, there is insufficient evidence to properly assess its effectiveness in terms of learning outcomes (Stark et al., 2021). A summary of past and recent developments in alternative reality games in and by libraries can be found in *Playing for real: designing alternate reality games in learning contexts* by Elizabeth Marie Bonsignore, who helpfully places ARGs into a framework of information ecologies (Bonsignore, 2016).

Jeffery T. Davis' 2017 book, *The collection all around: sharing our cities, towns, and natural places*, offers a variety of means by which public libraries can leverage their position in their communities to facilitate better access to the other cultural and natural resources that the city has to offer (Davis, 2017). Some of the suggestions that Davis

makes include the lending of museum passes, providing guides to the natural assets of the community, and being involved in placemaking activities such as book fairs in parks and pop-up markets in parking lots to activate adjacent areas of the library. Davis doesn't specifically cover the possibility of libraries providing play spaces or hosting site-specific games in the community and around the library in his book, but extending his ideas to these areas is a natural progression of this line of thinking. Likewise, while the results of a survey by Lenstra & D'Arpa (2022) of how small and rural public libraries responded to the COVID-19 crisis does not specifically address games, they do highlight many transformations of outdoor civic space, including public spaces owned by libraries.

Librarians as game designers

As this paper will invite the reader to consider designing their own location-based game that is site-specific to a particular place, it is necessary to establish the context of the librarian as designer. As such, this work is informed by and situated in a library design epistemology (Clarke, 2018). This paper will put forward that librarians should not only act as designers and actively 'change situations and add meaning to them' (Clarke, 2018, p. 11) but they should also consider joining the cohort of librarian game designers (Smale, 2011; Snyder Broussard, 2012; Urban, 2019).

Why this may be the moment for site-specific games

Games and play have been established in clinical trials and randomised controlled studies to provide significant benefit to those needing self-care and for those looking for a means to find connection to others as part of a larger strategy to improve one's mental health (McGonigal, 2014). If there was ever a time to highlight this particular benefit of games, it is now as our collective mental health continues to be strained as we try to find new ways of living together through the continuing threat of the COVID-19 pandemic and its aftermath. The COVID-19 pandemic has brought social and personal stressors that exasperated existing mental health crises found in young people (Conrod & Jayasinha, 2021), in university students (American College Health Association, 2019), in adults (Centre for Addiction and Mental Health, n.d.), and in the elderly (Gilmour & Ramage-Morin, 2020).

Even before 2019, libraries recognized a need in their communities for respite and recovery and had already encouraged a variety of mindfulness practice through staff development programs, interventions during information literacy classes, and through directly dedicated programming and activities such as yoga and meditation (Meeks, 2020). Furthermore, it has been argued that public libraries have a potential to serve as contemplative spaces for wider society (Pyati, 2019). Providing opportunities for stress-relief through playful interventions can fit alongside this developing facet of library public service, especially if such games are intentionally designed to encourage walking in natural settings, to bring friends and family together on a shared adventure, or to encourage acts of creativity. Indeed, such games could prove to be an additional mental health intervention to those less open to the more traditional forms of contemplative practice such as meditation.

Libraries should consider how they might introduce their communities to nearby places that might bring them calm, joy, or wonder, as there is a variety of evidence that suggests there are multifaceted relationships between places and an effect on our sense of well-being and mental health. The 2011 book *Making healthy places: designing and building for health, well-being, and sustainability* outlines some of these relationships between mental health and the built environment (Sullivan & Chang, 2011). Jeffery T. Davis, a librarian with the San Diego Public Library, suggests that one should think of the community of the library as a potential collection is all around them: 'How can library members be helped to access the resources around them as easily as a storytime or best-seller?' (Davis, 2017).

Site-specific location games for libraries

In this paper, several site-specific games will be profiled for potential use and adoption by libraries. These games will be understood through Scott Nicholson's SNAKS model to understand the game experience in a library context (Nicholson, 2010). While some have argued that Pokémon Go! isn't strictly a site-specific location game (LeMenager & Eklund, 2017), it is arguably the mostly widely known and successful commercial location game that has been played in a library context and so will be used as a first example.

Pokémon Go!

Pokémon GO turned the world into an altogether new playable space. Played in over 130 countries and downloaded over 500 million times in the first two months of its 2016 release, Pokémon GO is a freemium mobile game based on a Japanese platform game and animation franchise and built by Niantic (Hamari et al., 2019). Players are able to discover and capture 'pocket monsters' called Pokémon that appear in the app or are superimposed in the camera view of the player's location-aware iPhone or Android device. Some Pokémon are available as eggs and will only hatch after a certain number of steps have been made by the player. By December 7th of 2016, Pokémon GO 'trainers' walked 8.7 billion kilometres and captured 88 billion Pokémon (Niantic Labs - Pokémon Go, 2016). A 2017 online survey of 399 U.S. adults 'indicated that playing the AR game Pokémon Go was associated with various positive responses (increased positive affect, nostalgic reverie, friendship formation, friendship intensification, and walking), most of which predicted enhanced well-being' (Bonus et al., 2018).

In 2016, many public libraries held special events to coincide with this newfound activity. A 2017 survey of how libraries incorporated Pokémon GO event programming found 139 libraries engaged, with 88% of those being public libraries (Ball, 2017). Some of the more popular activities engaged by these libraries included: posting about Pokémon GO on the library's social media account, putting up signage at the library to let players know that they were welcome to play, making related book displays and/or reading lists, and setting 'lures' to attract Pokémon for a short duration. A smaller number of libraries arranged for Pokémon hikes or 'crawls', hosted a meetup, or provided a map or list of what Pokémon are likely available near each branch. In September of 2016, I provided technical mapping assistance for an event hosted by The Windsor Public Library called *Gotta map them all!* (Windsor Hackforge, 2016):

> One of the best things about Pokémon Go is it gives you a chance to learn more about where you live. In partnership with the Windsor Public Library and Maptime Windsor-Essex, we will be teaching people how to use Google Maps to mark out PokéStops and PokéGyms, so we can pick the best routes to help you catch them all! Plus we'll be mapping other important spots downtown that can help make the game more accessible, like wifi hotspots and bus stops. We will then be sharing the results with a publicly available online map of key PokéSpots in Windsor. Free and great for the whole family!

Tanya Ball, through her 2017 Pokémon GO survey, found other ways in which public libraries used the game to connect to safety concerns. Hayes Public Library in Kansas emphasised sun safety through a partnership with the local Cancer Council that involved distributing sunscreen samples, whilst Redbridge County Library in Ilford, UK were among the 18% of survey respondents who used the opportunity of the game as a springboard to talk about digital safety (Ball, 2017).

There was also library-sponsored Pokémon GO programming that had direct involvement with Niantic. In May 2017 there was an initiative launched by the Knight Foundation and Niantic 'to explore how technology can foster community engagement in several cities where Knight invests'. They approached The Philadelphia Free Library as a partner in this initiative (Nichols, 2017).

Pokémon Go! + SNAKS

In his 2010 book *Everyone plays at the library*, Scott Nicholson offers a conceptual model with five elements of game experience called SNAKS, which stands for Social, Narrative, Action, Knowledge, & Strategy:

- Social: The social interactions between players due to the game
- Narrative: The engagement between players and the narrative of the game
- Action: The actions required by the player in changing the game state
- Knowledge: The knowledge that the players bring to the game
- Strategy: The decisions required by the player in changing the game state

This model helps to direct a library's focus on the game experience and 'to consider what types of users the programs should serve and how they should be served in line with the library mission, and develop program goals out of that mission' (Nicholson, 2010).

The immediate success of Pokémon GO suggests that the game's knowledge base can be considered the most powerful aspects of its game experience. Established in 1996 and originally published as a video game, the Pokémon franchise is considered the largest in the world in terms of revenue and is thought to be worth more than $50 billion dollars (Batchelor, 2022). Over the last twenty-five years, millions of children have been introduced to the world of Pokémon through its video games, trading card game, animated tv shows and movies. When Pokémon GO promised players the ability to catch the Pokémon of their dreams or of their childhood

dreams, millions of players from around the world were ready and eager to play in every community at the word, go. The action of players being able to capture Pokémon in their neighbourhoods just as the main character Ash and his Pokémon trainer friends was clearly compelling.

But it was the social interactions of this game that caught the attention of many of those within libraries. Many library workers, including myself, noticed how the game allowed for intergenerational play, how it encouraged people to walk in their local parks and historical districts, and how players would discover new-to-them parts of the community as they tried to capture particularly rare Pokémon rumoured to appear there. Initiatives like that of the Knight Foundation 2017's partnership with the Free Library of Philadelphia tried to see if Pokémon GO could be co-opted in a way to encourage civic engagement and partnered with libraries towards that pursuit (Nichols, 2017). Unfortunately, as Niantic was unwilling to share player data from the event with their library partner, the Free Library of Philadelphia was unable to determine how many people were reached by the initiative (Zeglen, 2018).

Geocaching

Locative media – technologies, interfaces, platforms and content that are functionally tied to location – have been used for playful purposes since their inception. After selective availability was removed from the Global Positioning System (GPS) by the US government on May 2nd 2000, the next day saw the first ever geocache placed in Oregon, its coordinates posted to the internet so others could find it. As others began joining in, hiding containers, sharing their coordinates online and logging when they had been found, the location-based treasure-hunting game Geocaching was born. It is now played worldwide by millions of people (Lowe, 2021).

While providing experiences for children's play is largely a given in the public library, many libraries do not extend these opportunities for play to adolescents and adults. One means by which libraries can start in this space is to find ways to connect with existing communities of play. One such community that libraries could consider supporting is those whose hobby is geocaching which can provide another experience of site-specific exploration and play.

> Alison Harris and Norine Lee are avid geocachers —a global community made up of people who go on scavenger hunters to find hidden treasures (geocaches) using GPS capable devices. Together, the duo developed and executed a staff innovation project that encouraged customers to find hidden geocaches while exploring the 40 branches where they were located.
>
> Between the launch of the project in Summer 2016 — the same time that Pokémon Go hysteria was at its peak — and December 2018, 1,500 individuals visited TPL's geocaches more than 4,000 times. Additionally five TPL geocoins, which are small trackable objects that can be transferred from one geocache to another, were released. These geocoins have travelled more than 125,000 kilometres and the global users that find them know that they originated from TPL (Toronto Public Library, 2016).

If intrigued, library staff should first learn the best practises of geocaching and then when they feel confident to try to do so, they can create, register, and hide their own geocaches near their library. The de facto official geocaching site, Geocache.com hosts a long page of guidelines for those interested in leaving a geocache for others. But while the page goes into much detail of what one should not do, the guidelines are largely remarkably silent on the matter of why one should hide a geocache. The only words of advice are from briansnat: 'When you go to hide a geocache, think of the reason you are bringing people to that spot. If the only reason is for the geocache, then find a better spot' (Geocaching, n.d.). This is not the worst advice on the matter. Years ago, I tried to find a small geocache called The Bells that was supposedly located in one of the bushes of a city park on the south shore of the Detroit River. As I was unwilling to search the vegetation thoroughly, I stopped my search and instead diverted my attention to the view of Detroit and wondered why the cache was named as such. I was facing Detroit's Belle Isle but the name was The Bells. Then, I suddenly could hear it — the sounds of bells across the water from what I later learned was the Nancy Brown Peace Carillon. I remember this experience very fondly and appreciate the person who placed the geocache which led me to it.

One can think of geocaches as invitations or prompts to explore spaces in both new and familiar places that we might not immediately consider visiting. There might not be any practical reason to visit all 40 Toronto neighbourhoods that contain Toronto Public Library geocaches but the promise of discovery, of novelty, the simple joy of checking an item off a list may be reason enough. If we recall the work of Bernard Suits (2014), we might recognize that taking on an unnecessary challenge can turn a pursuit into a game. Indeed, we might be surprised at the size of the audience that might take this challenge on. In 2015 when designer Noah Ortman created the Toronto Public Library Passport for his library-loving girlfriend, the positive reception of his work from family and friends suggested to him that there might be a wider audience for those interested in commemorating visiting the 100 branches of the TPL system (Lightfoot & Mangione, 2016). This passport is currently available for $12 which includes a $3 donation to the Toronto Public Library (Avro Design, 2020).

Geocaching + SNAKS

If we look at geocaching through the lens of SNAKS, we can better focus on what kind of player might appreciate its particular game experience. Looking at it through the lens of social interactions that arise from play, we might note that the activity of geocaching can provide either a solo gaming experience or a social one. If a library is looking to provide activities for adults who are not able or less inclined to socialize but who are interested in learning or experiencing more of their community, geocaching might be an activity worth trying out. Indeed, it is possible to set up a geocaching program in which the players will have no direct interaction with library staff. While this lack of socialization may make the game less attractive to some library outreach programs, other libraries might find the ability to provide a gaming experience without having to establish set event times and dedicated staff to supervise as an asset.

While geocaching clues might have themes or incorporate puzzles in order to reveal a cache's coordinates,

narrative is generally not a strong element in geocaching. The component of strategy is also not much of a factor in this activity, unless the player decides to self-impose a time-limit to their gaming venture. The experience of geocaching is unlike a scavenger hunt in which the finding and collecting of objects is competitive and frenetic. As the actions of geocaching are unbounded by time, a game of collecting a particular set of caches can be played slowly over days, months, or even years and whenever it best suits the player. That being said, many caches might not be wheelchair accessible as geocaches need to be situated in places where they are unlikely to be discovered by passing foot-traffic.

The aspect of the game experience that might bring most reason to pause is the degree of knowledge that players must bring to the activity of geocaching. The player must be digitally literate and able to register on the geocaching site to find the necessary GPS coordinates of the cache in question, own a GPS device or a mobile phone with a data plan, and have the ability to use location information on their device to navigate them to the geocache they have targeted. As such, the activity of geocaching is generally limited to adults and families in which children play along with adults.

The Summer Game

Some libraries might be more inclined to provide their community with an experience like geocaching but only if it can involve those without GPS devices and require a lower threshold of geospatial knowledge. These libraries would do well to seek inspiration from the very successful Ann Arbor District Library's (AADL) Summer Game. AADL's Summer Game attracts thousands of players each year (Brien & Franks, 2012) and has been held annually since 2011 (although the 2020 version was replaced with a play-at-home version called The Bummer Game) (eli, 2000).

The Summer Game began as an expanded version of the library's summer reading program. While still encouraging children to read books over the summer, since the fourth year of its tenure the game offers points and badges for visiting parks and organisations beyond the library system (Vander Broek & Rodgers, 2015).

The Summer Game is divided into three parts: the summer reading game, the explorer series, and the online codes. First off, the summer reading game rewards children who read ten books with Summer Game points and a free book. Adults and teenagers can participate too, with ten entries of having read, watched or listened to content resulting in Summer Game points (teens can earn a book too).

The explorer series is a scavenger hunt of sorts. Exploring the AADL branches, Ann Arbor parks, and other sites across the city gives players the opportunity to find codes that can be redeemed for points and badges. AADL events, too, both online and in-person, offer opportunities to find Summer Game codes.

Finally, there are online codes. The AADL online catalog is chock-full with hundreds of them — riddles, puns and puzzles lead players from item to item in the catalog, collecting badges for each collection of codes they find. Badges are dropped every Friday, giving players new sets of themed puzzles to do each week. While there are

plenty of points to hunt for in the explorer series, online codes give players the opportunity to earn thousands of points at the click of a mouse. Codes can be redeemed for points, and points can be redeemed for prizes. A leader board showcases the players with the most points for the day, week, and for all time. For players, the Summer Game is a fun way to earn prizes; for the library, it's a great way to encourage the community to engage with library resources (Schriner, 2021).

Compared to the process of acquiring the coordinates and finding an obscured geocache, finding AADL Summer Game Explorer Series codes is a much more straightforward process. For example, players can earn points and the Downtown Discoverer badge by finding Summer Game codes that have been posted in the windows of the AADL Downtown Library. Similarly, players can earn the Bannerama badge if they visit 'all 5 AADL locations and collect all of the codes from the banners hanging on the buildings' (Ann Arbor District Library, 2021a).

The Summer Game + SNAKS

The game is, by library standards, wildly successful. AADL's Summer Game in 2021 created 440 badges which were earned 266,374 times by 7858 players. The gameplay of The Summer Game is worth exploring more fully to understand its merits and again, we will do so using the SNAKS framework and begin with examining the game's social aspect.

Like Pokémon GO and geocaching, The Summer Game allows for players to engage in the game as a solo exercise or to experience the game with family and friends:

> "It makes a good excuse to get out of the house, even during quarantine," Dunavan wrote. "A couple nights ago my husband and I were downtown strolling around after dinner and I dragged him around the downtown AADL to get the building codes."
>
> While I didn't drag my friends around Kerrytown in pursuit of codes as I did two years ago, I've still enjoyed participating in the Summer Game this year. The reading game has been a fun way to log the books I've read this summer, while home codes appease the itch for a scavenger hunt (Schriner, 2021).

While it is necessary to have one person to register on the AADL website to the play the game, extra players in the same household can be added to this account. For these accounts, the game allows the ability to switch the active account as a means to specify which player receives points for online activities. This functionality allows a parent to manage their children's accounts on their behalf if needed or desired.

In general, interaction among players is minimized by design. While players can opt to make their scorecards public on a webpage with its own URL, there is no in-game means to access these game profiles, much less browse them. If one is able to stumble upon another player's profile, there is no means to contact the player or leave a message for them. Players can leave comments on badge pages, and some of the more difficult challenges have dedicated pages where players can ask for hints or confirmation that they are on the right track for a given puzzle. But in general, the game is designed for the player to interact with the library and the City of Ann Arbor.

For example, players can earn a point each time they leave a review on an item in the AADL catalog, for reviewing existing reviews in the catalog, and for finding inaccurate series detail in the library catalog. Players can earn six points each time they review the date or location from a set of digitized collection of newspapers. While this paper is largely interested in the location-based badges of the Summer Game, it should be pointed out that most of the game's badges require the player to find codes that are hidden in the library catalogue.

If we look at the next S in SNAKS which is the lens of strategy, we can also notice other design choices that encourage desired forms of player engagement. If one reviews the leader board of previous AADL Summer Games, it is apparent that some players are highly motivated by the game's leader board to play consistently and strategically as a means to maximize their points. It appears that all of the opportunities to earn points in the game are from non-exclusive activities. This means that players don't have to be the first person to complete a challenge in order to earn points. As a result, the game rewards consistent and maximized participation. It was noted that for some event-based game badges, a player can earn points by participating in just one of a series of events, such as the Summer Game's TriviaTime! Badge. A player who was playing strategically may opt to play only enough to acquire the points from a certain badge and not waste their time on further activities that don't earn points. Other players, however, might discover that they may enjoy the library programming activity that they've just experienced and continue to participate in that event series, despite the fact that their badge has already been earned.

The Summer Game wisely designs for other player achievements other than placement on the game's leader board. For example, players can earn and collect badges in sets. Players can also use Summer Game points to earn up to four prizes from the Summer Game Shop. The Summer Game Shop opens in mid-July so players will have plenty of opportunity to earn the 2000 to 25,000 games points they might need to earn a small stuffed animal or other prize.

The next lens that will be applied to the AADL Summer Game is that of Narrative. The game itself is not driven by a single story but the game does make it clear that the Summer Game remains, at its core, a summer reading program. This is expressed through the Actions of the game. The Summer Game is broken down into three areas of play, with the first being the Summer Reading Game:

> Kids can complete the Summer Reading Game by reading 10 books to earn Summer Game points and a free book! Adults and teens can consume 10 ANYTHINGS (books, podcasts, magazines, articles, or pieces of content) to earn points as well. Adults will get 2,000 points, while kids and teens receive 2,000 Summer Game points (for Summer Game prizes) and a prize token for a free book! (Ann Arbor District Library, 2021b)

The second area is that of the Summer Game: Online Codes which are hidden throughout the AADL library catalog and found via clues, with some being straightforward and others more cryptic. Those players with a knowledge of puzzles and word games have some advantage in playing the Summer Game, but as the game is

designed by a library for a public that is inclined to be curious and enjoys reading and other forms of culture, it feels appropriate.

The third area of the AADL Summer Game is the Explorer series in which there are badges given for visiting all five AADL locations, for attending online and outdoor AADL events, and for visiting various parks and other sites of some of the partners of the AADL, including the local farmer's market. For each badge, the player is instructed to visit the site in question and to look for a particular sign that will either display a game code to be redeemed on the AADL Summer Games website, or to use features of a sign to find clues that suggest what the game code will be such as, 'Clue: Welcome to Cherry Hill Nature Preserve! Your code is the name of the person mentioned on the last line of text on the sign. You want the first and last name - no need for punctuation.' While some of these badges require a visit in-person to find the sign with the necessary code, for some of these Explorer Badges it is not necessary to visit the signs in person as the AADL provides a PDF that features images of all the signs in question. One player left a comment in gratitude for this affordance: 'Bless you for making this so we don't actually have to go to the parks. Between my husbands overtime and the mosquitoes, we're not able to go out much' (AprilCDB, 2021).

Due to the pandemic, the Summer Game sought new ways to encourage its community to explore parks and other spaces outside of events but in a way so that crowds of people would not gather in the same space at the same time. In an article in the Michigan Daily, Rich Retyi, AADL's communications and marketing manager shared that this was why the pandemic versions of the Summer Game allowed players to create their own 'Home Codes':

> Anyone can sign up and create their own home code, which can be found and entered by other players for points. Last summer, the first summer of home codes, there were 259 total home codes. Home codes are popping up everywhere this year, with 517 home codes created as of July 26, just halfway through this year's Summer Game.
>
> "It's a really cool thing that we've seen people sort of organizing their own little scavenger hunts to go get a bunch of home codes," Retiyi said. "So, yeah, I think things continue to kind of get bigger, more interesting, more creative, as things have evolved." (Schriner, 2021).

Developing location-based games from location-based walks

AADL's Summer Game's platform is a Drupal-powered website that is developed and maintained by the library. As not every library has the technical capacity to develop their own similar platform, it is worth considering how libraries can provide location-based games with fewer technological requirements than Pokémon GO, geocaching, or the Summer Game. This section of the paper will consider how libraries who have already developed location-based content can add game-mechanics to library-developed walks as a means to provide location-based games to their communities.

In a survey of 130 small and rural libraries held during the COVID-19 pandemic, it was found that the most commonly offered outdoor program was, by far, the StoryWalk, with 74% of those who reported offering outdoor programming (Lenstra & D'Arpa, 2022).

> StoryWalk® is an innovative and delightful way for children — and adults! — to enjoy reading and the outdoors at the same time. Laminated pages from a children's book are attached to wooden stakes, which are installed along an outdoor path. As you stroll down the trail, you're directed to the next page in the story.
>
> StoryWalks® have been installed in 50 states and 13 countries including, Germany, Canada, England, Bermuda, Russia, Malaysia, Pakistan and South Korea! They are always received with appreciation.
>
> StoryWalk® was created by Anne Ferguson of Montpelier, VT and has developed with the help of Rachel Senechal, formerly of the Kellogg-Hubbard Library (Kellogg-Hubbard Library, n.d.).

In a pre-pandemic exploratory survey to discover what extent public libraries support walking in their communities, it was stated that along with StoryWalks, many public libraries around the world also connect stories and walking by using Heritage Walks and Walking Book Clubs (Lenstra & Carlos, 2019). Libraries, including the Brock Township Library and the Toronto Public Library, have also provided heritage walking tours during the annual Jane's Walk event which occurs every first weekend in May. Jane's Walks are volunteer-led walks meant to 'encourage people to share stories about their neighbourhoods, discover unseen aspects of their communities, and use walking as a way to connect with their neighbour' and were devised as an homage to the urbanist, Jane Jacobs (Jane's Walk, 2021).

With some re-designing, library-hosted Heritage Walks, Jane's Walks, and StoryWalks can be re-imagined as analog location-based games that can be played at the reader's leisure. Inspired by the location-based alternative-reality game (ARG) called *The Jejune Institute*, the author has developed her own version of The Institute Documentary Film Induction Card for the 2022 Jane's Walk Festival of Windsor Ontario (The Institute Documentary Film Induction Card, 2013). The Jejune Induction Card is a postcard-sized page with fill-in-the-blank questions about the features of various scenes in the 2013 "documentary" about the ARG, called *The Institute*. In my Jane's Walk version, the player is given a map in which each marker on it corresponds to a fill-in-the-blank option, with some blanks being encircled. When players walk to each location marked on the map, they will come across a building that has a visibly engraved name, such as Holland Manor. After they fill in all the blanks, they will uncover the "answer" to puzzle at the bottom of the card by writing the encircled letters into the key. Similar puzzle cards could be developed as alternative self-guided walking tour by libraries.

There are also game labs that have developed mobile apps and online resources that might be of use for libraries interested in turning their Heritage Walks into Heritage Games. Field Day Learning Games from the Wisconsin Center for Education Research at the University of Wisconsin-Madison developed ARIS, an iOS platform for 'mixed reality games' that anyone who can read can design (Field Day Learning Games, n.d.). Of particular note,

in September 2021, the Playful City Lab of the American University in Washington, D.C. released Hive Mechanic, 'an authoring tool for making neighborhood games and playful activities to embed in public space', designed so that no coding skills are required.

> Our web interface for Hive Mechanic is how you create a game or activity — no special apps required. Our tool is designed to be visual and to help democratize game design. It is simpler than tools like Scratch and ARIS, with a hint of the internet of things like IFTTT ("Our tool", 2021).

In September of 2021, the American University's Game Center and the DC Public Library (DCPL) received a two-year, $249,000 grant to offer libraries tools, training and templates to create neighborhood games with the goal of reaching over 20 cities. The call for participating libraries is, at the time of this writing, forthcoming (Playful City Lab, 2021).

There are several other strategies that libraries can try if they would like to see games by and about their community without having to become involved with game design directly. If there are experienced game designers in their area and if funding is available, the library might approach the designer with a potential commission or partnership. The New York Public Library commissioned game designer Jane McGonigal to celebrate its 100th birthday which resulted in the work, Find the Future (Hohmann, 2011). In 2013, the Toronto Public Library and creator Jim Munroe worked together to design and host an alternative reality game called KTR 451, which was themed on Ray Bradbury's novel, Fahrenheit 451 (Munroe, 2013).

For libraries that currently don't have the capacity to host a game designer in residence or sponsor a 'game jam', in which game designers are invited to make a game against a theme and a deadline, there are other informal means to encourage the making of games that reflect one's locality. Libraries can review their collections and select potential gaming assets, make these digital files readily available to discover and copy, and then invite game designers to make use of the material. This is what the New York Public Library did in 2016 (Kotzer, 2016). To facilitate this creative work, it is essential that digitised material is clearly licensed for reuse, ideally under a Creative Commons framework.

Conclusion

Using the SNAKS model, it is possible to recognize the desirable game experiences that location-based games can make possible. Location-based games are, in general, games that allow a wide degree of social interaction that is determined by the player, in that they can be played solo, or in groups. As these games are generally not bounded by time, these games allow for inter-generational play that can be stopped whenever a family member becomes tired or disinterested, and then can be picked up at a better time. The action of location-based games generally allows for players to walk at their own pace and, through the game, perhaps discover new places or features of their community that are new to them. These games generally don't require a high degree of strategic thinking, although they can if the game is designed to encourage competition over participation. In general, libraries have

used location-based games to provide new or hidden knowledge about their communities rather than demand that the player is already well versed in local history or local lore.

After the worst threats of COVID-19 have passed and when there is a time for respite, libraries should consider providing, commissioning, and making games that reflect the shape of the lives of the people they serve that are embedded in the places where they live. Games can be designed to strengthen the connection between a person and where they live and in doing so, hopefully, reduce a player's feelings of disconnection. It is hoped that the author will be successful in convincing the reader that in addition to designing escape rooms, libraries should design games to help engender a feeling of home, where, it is said, all your attempts to escape cease (Mahfouz, 2015).

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