Location-Based Games as Platforms for Site-Specific Story Mapping

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Introduction

Locative media – technologies, interfaces, platforms and content that are functionally tied to location[1] – 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.[2] 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.

Location-based games – those whose gameplay progresses through interaction with physical locations – have come a long way since 2000. From the early internet experiments like Geocaching and PacManhattan, to interactive artworks such as Blast Theory's Can You See Me Now and Uncle Roy All Around You, to today's highly-popular smartphone app-based games such as Niantic's Ingress, Pokémon GO and Harry Potter: Wizards Unite, it is evident that the playing of location-based games has become an increasingly prevalent cultural practice. What is less clear is how playing location-based games might affect how we interact with locations as *places*: meaningful sites whose significance to us as humans is habitually imagined, represented, performed and contested.

The aim of this paper is to outline some of the possibilities and challenges that location-based games present for engaging with these processes through which places become meaningful to us. My observations derive from three years of practice-based research designing and testing location-based games around East Kent, UK. This paper will be focusing specifically on the development and playing of Canterbury in 3 Words, a location-based treasure-hunting game played using the what3words app. This game challenged players to discover and share stories associated with locations in the city of Canterbury.

I will be demonstrating how location-based games can be highly effective for understanding the *affordances* of locative media – the properties of these media that allow certain actions – for apprehending the processes of meaning-making that make places what they are. Practices of design and play reveal the *performativity* of interactions with place that use digital media and mapping: how our own actions ultimately define the relationships between these media and experiences of place. This can develop critical capacities in players that help them understand place as *relational*: 'thrown-together' and always coming into being,[3] as multiple types of information, media and practices of interaction are brought into connection. Yet playful

applications of locative media also raise important questions concerning barriers to access and the ethics of using certain digital interfaces, none of which are easily solved.

To reach this point, the paper will first give an overview of existing scholarship on the relationship between pervasive digital media and place. This body of work addresses the role play can have in digitally mediated practices of emplacement, how power manifests within these practices, and the critical potential of location-based play and storytelling for engaging with place. After identifying a need for practice-based, design-focused approaches towards studying location-based games, the paper will introduce the what3words geolocation platform and the Canterbury in 3 Words project, which was developed to explore how what3words could be used for playful, site-specific storytelling. Drawing on design documents, gameplay observations and interviews with participants, the paper will then chart the opportunities and challenges that Canterbury in 3 Words presented for mapping and engaging with diverse stories of place in Canterbury. This will be split into three thematic sections. The first will explore tactics and creative practices observed in the design and play of the game; the second will address the ways connections were drawn between different kinds of information; and the third will consider the personal negotiations of capacities, routines and values that the gameplay entailed.

Pervasive Digital Media, Play and Place

While early accounts of digital media in the humanities and social sciences implied a separation of physical places from "cyberspace"[4] or "spaces of flows" in a "network society,"[5] a growing body of ethnographic research on locative and mobile media use has troubled this supposed separation between real and virtual. de Souza e Silva influentially framed the integration of digital information and navigation of one's immediate surroundings, via the internet connectivity and location-awareness of mobile devices, as productive of "hybrid spaces".[6] These spaces merge digital information, physical space and social connections to produce an emergent sociality that "enfold[s] remote contexts inside the present context."[7] Negotiated as lived, subjective environments, these processes have subsequently been discussed as producing "DigiPlace"[8] or "augmented realities"[9]: defined by the ability to access context-specific information in real time via mobile technologies, and therefore offering novel possibilities for interacting with place. As Gordon and de Souza e Silva outlined through their own concept of "net localities," the implication of these hybridising practices over time is that our networked connections do not weaken relationships with the physical places we inhabit, but instead *intensify* them.[10] With the binary of real places and virtual networks collapsed, research has since turned to the different forms of co-presence, attention and attunement experienced through embodied, situated interactions with mobile and locative media as processes of *emplacement*.[11]

Practices of play have been a central focus of research into these processes. In their conception of "hybrid reality games," de Souza e Silva and Sutko outlined how playful uses of locative and mobile media were not only examples of the emergent sociality of hybrid spaces, but the blurring of play and ordinary life.[12] Play had traditionally been conceived as an activity taking place in a sphere separate from the times and spaces of the everyday,[13] a "magic circle" in which special rules apply and behaviours take on transformed meanings.[14] Instead, it was argued, the increasing pervasiveness of digital and locative technologies had enabled the expansion of the magic circle

into the spaces, times and social relations of everyday life,[15] leading to a shift in the semiotic domain through which players encounter places.[16] Qualifying these observations, Klausen argues that the playful and creative appropriation of pervasive technologies in location-based games interweaves game logics with the contingency of physical environments, widening the range of affective encounters in everyday situations and leading to "re-enchantment."[17] More recently, research on mass-market location-based games like Pokémon Go (pokemongo.com) indicates how players modify their routes through cities, develop interest in places beyond their social and cultural capital, and develop familiarity with sites through shared social relations among players,[18] leading to "new modalities of emplaced meaning."[19]

Nonetheless, many of these forms of playful engagement with place are performed in collaboration with digital interfaces designed by private companies, which aim to shape our capacities for attention and affect in ways that generate economic value.[20] James Ash has illustrated how embodied interactions with interface environments affect how we sense space and time, which digital game developers configure in an attempt to produce "positively affective" responses in players.[21] Similarly, the development of mobile and locative technologies – and notably the smartphone – has resulted in a shift to a logic of *navigation* in how we interact with interfaces, appealing to the desire of users to have power over their own mobility.[22] This connects to observations that mobile and locative media are *egocentric* in their design, prioritising individual use and a mindset that digital maps reflect and represent the user's view of the world.[23] The implications for location-based games, it is argued, are that their interfaces encourage goal-oriented, collection-based forms of participation,[24] which generate locational data for companies and consequently raise questions regarding surveillance and privacy.[25] It is important to note, then, how practices of engaging with place through location-based games are embedded in broader relationships of power. Following Flanagan, we cannot uncritically claim that bringing play onto the street is an empowering activity by default, despite the rhetoric of innovation, liberation and possibility that pervades discourse around location-based games.[26]

How instead might location-based games enable critical approaches towards digitally mediated interaction with place? Jason Farman claims that this necessarily involves an understanding of the collaborative relationship between material environments and interfaces in the production of space.[27] He suggests that using location-based game interfaces for things they were not designed for – as a form of *bricolage* – is one way this can be achieved. Paula Levine's San Francisco <-> Baghdad project from 2004, for example, revealed the military applications of GPS technology by overlaying a map of Baghdad onto San Francisco, and placing geocache containers at the corresponding coordinates where GPS-targeted bombings had occurred in Baghdad.[28] Pinder identifies this trend in playful and distortive uses of locative media as "dis-locative": performatively reappropriating, reframing and repurposing GPS, and other formalistic aspects of positioning technologies, to unsettle, unfix and reimagine forms of being located.[29] Elsewhere, Birtchnell et al. argue that the indeterminacy of the relationship between location-based game interfaces and physical actions in places *in itself* can create opportunities for resistance in logics of digitalised commodification.[30] They observe how players of Pokémon Go exploit ambivalences in the game's design to resist, rework and create ambiguities in corporate attempts to generate profit from players' exercise, exploration and interaction. The agency of players in this regard extends to an awareness of the contingent relationships between game maps and their physical

surroundings, in which they use playful practices of navigation to negotiate the data infrastructures underlying how location-based games represent places.[31] Location-based gameplay can therefore reveal and enact the *performativity* of digital mapping and navigation as means of engaging with place.

Storytelling has been identified as a concurrent area of practice that can provoke critical encounters with place using locative and mobile media. This follows a longer tradition of narrative cartography, in which maps have both been used to represent the spatial structures of stories and been recognised as having narrative dimensions in themselves, depending on their utilisation and appearance.[32] With the development of Web 2.0 and the increased capacity of websites to host user-generated content, story mapping has been aided by tools that allow people to add personal or collective narrative data onto digital base maps.[33] Beyond just mapping, however, Jason Farman has illustrated how mobile media storytelling projects such as On This Spot and [murmur], which share site-specific, first-person oral histories via dialled telephone numbers or QR codes, can "insinuate themselves into the grand narratives of a space" by layering previously untold stories onto those visibly expressed through durable material objects like statues and plaques.[34] These ephemeral media can consequently enable *polyvocality*, enriching the ecology of narratives that give meaning to places. This same process has been discussed in relation to the location-based game Ingress, in which players can nominate new in-game points of interest and edit existing ones. Players curate a cultural heritage that is evolving and unique, re-shaping player mobility to include sites that are often overlooked by official forms of heritage documentation.[35] Central to all these storytelling practices is the prioritisation of individual, embodied engagement via digital and mobile devices, whereby participants direct how stories of place are told and re-told through acts of navigation.

In this regard, Willis proposes that, for locative and mobile media to be effectively used to communicate information about places, it is critical to create a framework for individuals to construct their *own* stories out of open-ended structures of information.[36] This is where the architecture of game rules and interfaces can play a role. She points to the "communities of practice" that have developed around Geocaching,[37] which tie information about place to embodied journeys through terrains, as examples of how "meaningful structures" for sharing local information can bind otherwise ambivalent technologies to this task and make the process engaging.[38] Yet existing scholarship on location-based games overwhelmingly approaches the subject of interaction with place from a consumer perspective, rather than attending to the processes of design and development through which such meaningful structures for engaging with place might be created and tested.

Addressing this absence, the research discussed in this paper attempts to identify, from a design perspective, how the affordances of locative media might be re-tuned towards providing platforms for critical and affectively powerful practices of storytelling about place. The following two sections introduce what3words as the locative media platform used for this research, and Canterbury in 3 Words as the location-based game developed to explore what3words' potential for mapping and engaging with diverse stories of place. This will be followed by discussion of the opportunities and challenges the project presented towards achieving these aims.

what3words

what3words is a free-to-use geolocation system and app that divides the world into three-metre squares and gives each one a unique three-word address (see Figure 1). These three-word addresses never change and have been determined by an algorithm that converts GPS coordinates into the what3words grid, attaching words from a library of those approved. The company markets the platform as being "the easiest way to find and share exact locations," asserting that it is much simpler to communicate location by saying three words than, for example, reeling off a list of coordinate digits.[39]

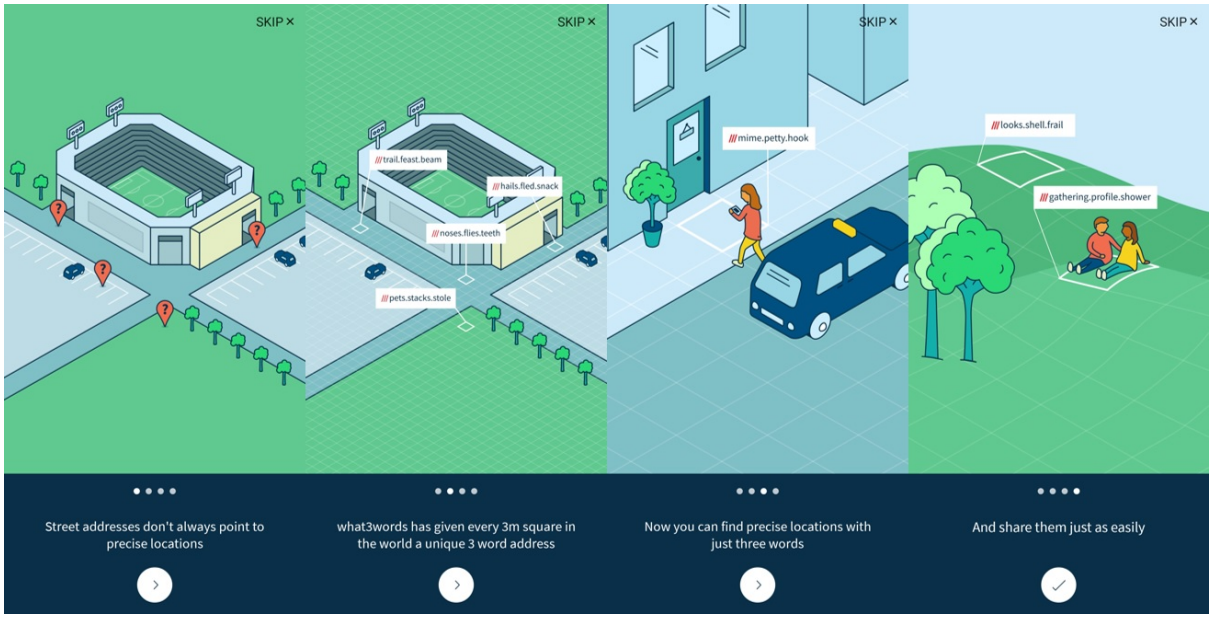

Figure 1: Screenshots from the what3words app walkthrough (author's image)

Since being founded in 2013, what3words has partnered with a growing number of large corporations, who make use of their system for purposes such as logistics and automotive navigation. In the UK, and increasingly further afield, the service is often recommended to the public by local emergency services as a quick way to accurately communicate your location in an emergency.[40] The service has also been adopted as a solution in communities where addressing systems are unreliable or inaccurate. Notably, in countries where street addresses never previously existed, such as Mongolia and Tonga, what3words has partnered with national postal services in these countries to become the default addressing system.[41]

However, this new method of mapping and locating presents a range of potential issues. what3words is owned and managed as a business, which makes money through the licensing of their API (application programming interface) to other companies.[42] The underlying algorithm used to convert GPS coordinates to three-word addresses is proprietary rather than open-source, and even free users need to agree to a lengthy set of terms and conditions before using it. Elsewhere, concerns have been raised about the words used in the service's three-word addresses and implications of attaching them to culturally or politically sensitive sites.[43] Despite the service

currently being available in forty-five languages, the same three-metre square will also have a completely different address in each language, meaning that there is no direct way to translate between them.[44] Lastly, tectonic movements can hinder the accuracy of an addressing system based on a static grid. If an object shifts into a neighbouring square on the what3words grid following an earthquake, for example, it will have an address that bears no similarity to its previous one.[45] Indeed, for the purpose of avoiding confusion at a local scale, the addresses of nearby squares are designed to use completely different words.[46]

Despite these caveats, what3words has become an increasingly popular service. The app now has over five million downloads on the Google Play Store, and according to the company's website, what3words is used daily in 193 different countries and by thousands of businesses "to improve experiences and efficiencies."[47] It has recently even seen its first-ever TV advertisements in the UK.[48]

Canterbury in 3 Words

The idea of developing a location-based game using what3words stemmed from a three-year, practice-based research project, which investigates the potential of location-based games as platforms for engaging with the stories of places in East Kent. During the process of sketching design ideas for location-based games, I was struck by the unique affordances of a locative media platform based around communication with *words*. Even though their use in what3words is highly instrumental, I noted how evocative the three-word addresses could be. Addresses such as ///snows.alarm.builds seemed to suggest micro-narratives in themselves. Moreover, when using the app, I found there were occasionally uncanny moments of synchronicity or juxtaposition between the address words and what could physically be found at their associated locations. ///ending.scary.bench, for example, points to the site of a bench in Canterbury, where you can sit next to the ghostly figure of the late comedian Dave Lee cast in bronze. These observations led to the idea that these combinations of words could potentially be interesting tools or prompts for storytelling about places.

In thinking about how what3words might fit into the architecture of a game, the company's aim for the app to make things "easy to find" stood out. Does being able to find locations easier actually help in understanding what makes them meaningful as places? Previous examples of location-based games suggested that this was not necessarily the case. Treasure hunts, for example, are a genre of game that relies on locating, yet typically entails a slower or more elaborate process of navigation that reconfigures forms of attention with your surroundings. In the process, players can adopt a critical gaze through which they notice things about their environment of which they were not previously aware.[49] The possibility of using the what3words addresses to provoke more critical forms of place navigation was ultimately what inspired the idea of a treasure hunt using stories written with the address words.

I wanted to find a method of hosting and administrating the game that would enable regular participation and easy user contribution. One key example I turned to be the painted rocks game, which is played in local communities worldwide using Facebook.[50] Players hide rocks they paint themselves in public places, and other players post photographs with them to show when

they have been found and rehidden. What is evident about the playing of this game is how embedded it is in the everyday life of local communities. It relies both on people coming across the rocks during their everyday activities and when doing their daily browsing on Facebook.

Drawing these different ideas together, I devised Canterbury in 3 Words. The game involves sharing stories about places in Canterbury using all three words of their addresses on what3words, as well as a photograph clue. Other players can then attempt to find the locations using this information and the what3words app. The stories are posted on a private Facebook group (see Figure 2), with players commenting on the posts when they find the correct three-word address used in the story (without giving the solution away).

Figure 2: The Canterbury in 3 Words Facebook group, viewed on PC (author's image)

In November and December 2019, I tested the game with fifteen local people over a period of three weeks. This group contained twelve men and three women with a range of occupations, whose ages ranged roughly from early twenties to late fifties. After monitoring the Facebook group during this time and recording my observations, I then interviewed eight of these players in the weeks after the test. After iterating on the game's design using feedback from this test, a public, online-only version of the game ran during the early stages of the Covid-19 pandemic from April to September 2020, with seventy-five local people participating in total. These participants were an even spread of men and women, aged roughly from late teens to late

seventies, with diverse occupations. Further gameplay observations were made, seven players (both new and returning) were interviewed and further feedback was obtained via online forms and polls.

This paper will now turn to what was found throughout these phases of design, testing and play, charting the tactics and conceptions of reward articulated in the gameplay; how connections were drawn between different kinds of site-specific information; and lastly how bodily capacities, routines and values were negotiated in the running of the game.

Tactics and Rewards

The gameplay of Canterbury in 3 Words was based around two main activities: writing stories and finding story locations. Each of these activities had its own set of rules, providing a distinct set of challenges and rewards based around engaging with place using the game's digital platforms.

When *writing* a story about a place in Canterbury and sharing it to the game's Facebook group, players had to incorporate each of the words from the site's what3words address. Observations from the gameplay demonstrated that players would often respond to this task by presenting their stories in deliberately imaginative formats.

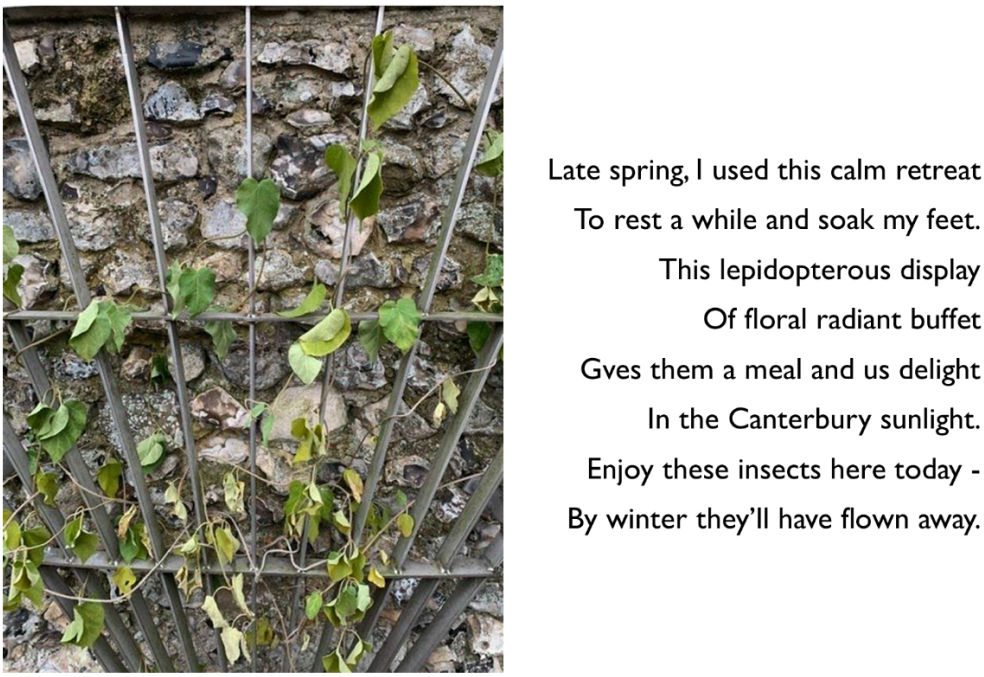

Figure 3: A poetic story shared during the Canterbury in 3 Words game test (author's image)

When interviewed, the author of the poem in Figure 3 highlighted how the requirement of having to use the address words stimulated his creativity, in a way that would not have happened if he were simply asked to "write a story about Canterbury":

> *"When I had the three words to include, it, like, set a framework around which I could construct the poem. And I would suddenly get inspired as to how to write a line with that word in, and then what I would need to do to make it rhyme and to have the meter. So I guess it was an inspirational structure that I could use, rather than starting with a blank sheet."*

This participant highlighted that writing a metered rhyming poem, as opposed to free verse, *"seem[ed] like a much better reward for that effort."* The meaningful structure provided by the game rules prompted this participant to play with the affordances of the three-word addresses and Facebook post format, which he used to articulate what felt rewarding to him.

For other players, the task of telling stories with what3words addresses led them to re-articulate the *cultural associations* of sites they wrote about. The author of the fantasy fiction story in Figure 4 told me that the word "ritual" in the mapped address for her location led her to re-imagine the story behind the river sculptures shown in Figure 5, in a way that captured what she understood as the *"magical"* qualities this place has. This process is illustrative of Lammes and Willmott's claim that location-based games turn maps into game-boards: "inherently rewritable, sociocultural text[s]."[51] The interrelationship between the affordances of the locative technology, the game rules structuring interaction, the physical site and its cultural associations were performed through the site's new playful representation in this player's story.

The two girls sit on the curve of the wall, in the shadow of the tower. They know they must escape, before another turn of the season brings another tragedy – the town's cruel ritual keeping everybody in check. Attempts to leave have been made before – some girls try to run, and last year a group built a raft – but they are always caught, and the punishment in the tower's prison is worse than the risk. But these sisters have a trick up their sleeve. No longer caring who might see, the older girl stands on the edge, toes curled to balance as she looks down at the river below. Her younger sister tugs her sleeve nervously but joins her on the mossy stone. And together, the pair shed their human skins, scales glinting in the moonlight as they dive into the reeds below, one after the other.

Figure 4: Story about an underwater sculpture shared in Canterbury in 3 Words (author's image)

Figure 5: Alluvia, an underwater sculpture in Canterbury (licensed under Creative Commons)

As well as affecting the form and content of the writing, the treasure-hunt logic of the gameplay influenced how people *organised and presented information* when sharing stories. Players would frequently be *tactical* in how they framed the images attached to their stories, zooming in on details or cropping out contextual information from their photographs, to make the process of identifying the location more challenging (see Figure 6).

Figure 6: Examples of photographs framed to remove contextual detail in Canterbury in 3 Words (author's images)

Meanwhile, in their use of the address words when writing, many of the players that I interviewed explained that they would try to find ways to make their use of these words less obvious. This sometimes involved disguising their use in a sentence through elaborate wording, particularly if the address words are not often used in everyday contexts. More commonly – but only if the site in question was large enough – players would choose a different what3words square that covered their site, whose address words were easier to fit into a sentence. The opposite of these practices was true for participants finding story locations, who very regularly said they would seek to identify words that looked "out of place" or shoehorned into the story text, as clues to help find the correct what3words address.

These tactics ultimately involved distinguishing the affordances of the platforms used for the game and tasks required by the rules, then exploiting these to achieve desired outcomes: creating challenging game content for other players, writing stories that read coherently, or finding locations indicated by other players' stories. This tactical use of words meant that the linguistic became closely tied to conceptions of place, as players negotiated the word-based logic of what3words and storytelling imperatives of the game in their engagement with sites in Canterbury.

The use of tactics in writing stories and finding story locations illuminates how a degree of *competitiveness* emerged in the gameplay. This manifested most visibly in the game's leader

board, which ranked players based on the number of points they had earned for doing activities in the game.

While some interviewed players said they had barely looked at the leader board, instead being motivated by challenging themselves or taking a general interest in stories being shared, other players were highly motivated by wanting to reach the top of the leader board:

> *"[The leader board] made me want to try and find some more, but due to limitations on my time, I didn't get to. But no, definitely if it … like, over a long period, I would definitely be like 'No, I want to try and find some more to get higher up on the board.'"*

As a designer, I adapted the leader board's features throughout the game's development, to make kinds of activities more rewarding and therefore encourage different ways of meaningfully engaging with place. For example, while the leader board originally only gave points for finding story locations, it felt appropriate to also award points to those who had contributed stories of place for other players to read. Later, I awarded additional points to players who found stories set at a higher difficulty level (rewarding those who challenged themselves to find locations that required specific knowledge to identify) and those who were first to find a particular story location (rewarding investment in the game, through attention toward new story posts or older stories whose locations had not yet been found).

While it was difficult as a designer to distinguish the effect that each adaptation of the leader board had on player participation, the leader board was largely seen as a positive feature from all players. Interviewees recognised how it rewarded those inclined to be motivated by it, while taking nothing away from those who were not:

> *"Because there was a stage where I was way out in front. And that gap's narrowed. And to me, I'm thinking 'Okay, that did trigger you.' That's triggered that competitiveness in some people to actually do something. And to me that's good."*

Alongside the creative forms of storytelling the gameplay inspired, what these observations of tactics and motivations highlight is that the way players engaged with the game rules and affordances of the game's digital platforms was highly *performative*, based on what they personally found rewarding, interesting or motivating. This differed quite significantly between players and could be influenced by the *relationships of power* articulated in the design of, and interaction with, game elements like the leader board. So as a designer, one of the key tasks was attempting to find ways to both enable and reward different ways of meaningfully engaging with the game, and stories of place as a result. This involved strategically managing the various "inhibitors" and "disinhibitors" in the game's architectures,[52] to shape the contingent responses of players towards place.

Connections and Interpretations

Taking the form of a treasure hunt, the gameplay of Canterbury in 3 Words entailed a particular kind of navigation on the part of players, which saw them interact with a range of different sources of information about places. These included the images and stories contained within posts on the game's Facebook group, the what3words app and any external sources of information – from the internet, maps, books, personal knowledge and so on – needed to complete the challenge of identifying the sites to which story posts referred.

When asked about their impressions of this gameplay, players frequently remarked that one of its defining qualities was how it required certain types of critical thinking, which involved *identifying and drawing connections* between these different kinds of information. This task involved assessing their relative importance and tolerating incompleteness, multiple interpretations and uncertain relationships between truth and fiction:

> *"But yeah, it appeals to me, because I like researching and investigating and just digging around; it's one of my favourite things. I have the world's most active Google thumbs."*

> *"There's the Round Britain Quiz and Brain of Britain […] And again, they specialise in … it's fairly cryptic, oblique clues. And the people who do well are people who can join the dots. So they've got random bits of knowledge that they can bolt together to come to a solution. And I find [Canterbury in 3 Words] very much in that vein."*

> *"I think the story sometimes felt to me like a little bit of a red herring. Although it's not a red herring. It's … you look at the story and go 'Well, is this fiction? Is this truth? Is it a mixture of fiction and truth?'"*

> *"Overall, it's not easy. It's easier if you do know the city well. But even then, it's not really a piece of cake. If it were, would it really be worth doing? Some bits of it are beyond me, which is absolutely fine. Because if the whole thing was … could be solved, there again, the challenge has evaporated. So I can tolerate things being incomplete. And I know other people around me can't tolerate that. But I'm quite happy to tolerate that because it means that, you know, it continues."*

Battista et al. have described this "open-endedness"[53] that characterises treasure hunts as "activating a certain way of looking" at place, "reassur[ing] us that every person leaves some residue of their passing and of their actions on their physical surroundings: detection is a matter of being observant to the details."[54] For Willis, this kind of open-ended structure of finding and

sharing local information is demonstrative of Doreen Massey's[55] relational conception of space and place as "waiting to be enacted"; in which there are "always connections yet to be made" and possibilities for multiple imagined outcomes.[56]

As some of the previous comments from players show, the cognitive challenge of triangulating between disparate pieces of information about place was often a highly engrossing, affectively powerful endeavour to those who enjoyed this kind of activity. These participants also sometimes told of their interest in puzzles more broadly.

However, across both the test and public version of the game, the question of *difficulty* was one that came up regularly. While many players accepted that there would be a degree of challenge and that they might not be able to find all the locations, others were occasionally frustrated by the level of difficulty and friction of accessing information across different platforms:

> *"I really liked this idea when I read about it, but for me as a parent/home educator, resident of Canterbury, and someone who enjoys writing, it's just too hard to identify places from the writing I've seen so far. That just turns me off, I'd prefer there to be more clues to figure things out, in at least most of the pieces. […] I'd like it if there were a specific family/children's section where clues were written with all ages in mind, and the locations were more possible to identify."*

This created a difficult balance to strike as a designer between maintaining a satisfying level of challenge in the game – one that encouraged players to engage with a range of information about Canterbury – while ensuring the gameplay was accessible to a wide range of players with differing levels of familiarity with the city.

I attempted to manage this balance using three key methods. The first, introduced in the original iteration of Canterbury in 3 Words, was to limit the game to locations *within Canterbury's city walls*. While this feature originally aimed to keep the scale of the game small for testing purposes, testers frequently mentioned how grateful they were to know which areas "counted," so they could fine-tune both online and in-person navigation to areas of the city.

This *boundedness* of the gameplay, then, offered players a satisfying degree of agency when looking for story locations and telling stories, yet still relied on players drawing together a range information about sites within the city walls in an open-ended, dynamic way. In the interplay between boundedness and boundlessness, it was demonstrative of Massey's progressive understanding of places as produced through relations across multiple scales.[57] The popularity of the city wall limits ultimately led to them being retained for the public version of the game.

The second method was suggested by game testers and implemented for the public version, which was to give posted stories *difficulty ratings* (see Figure 7). This feature aimed to provide players with an indication of how recognisable the location would be to people with different levels of familiarity with the city. By tagging story posts accordingly, players could filter content on the Facebook group to match their level of existing knowledge about Canterbury. However,

the impact of this change was tempered by the limited visibility of tags on Facebook group posts, especially on mobile, which meant that not all active players used this feature regularly.

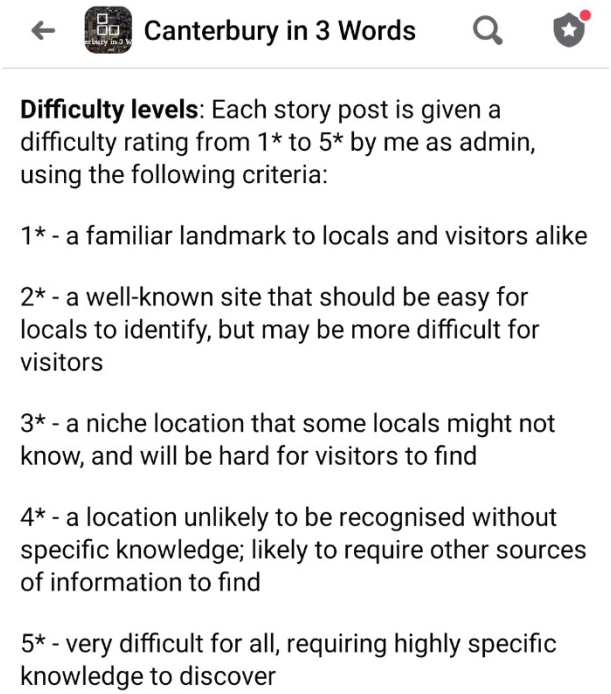

Figure 7: Description of difficulty levels on the Canterbury in 3 Words page (author's image)

Later, *hints* were also added to all stories posted in the group, as a third method of managing difficulty levels. Hints were written by the story authors, giving an additional piece of information relating to the site's physical location as opposed to its story. The idea was to give players something they could look up that would help point them in the right direction, meaning they would still be critically engaging with information about the city, but also have a greater chance of achieving the satisfaction of finding story locations. Nonetheless, players also used hints as an opportunity to be creative in their representation of place, often presenting the information in cryptic, poetic and oblique formats. Once again, though, the affordances of the Facebook platform limited the possibilities of this feature, as there was no way to hide the hints for players who wanted to challenge themselves to decipher the location without them.

These observations demonstrate how the treasure-hunting gameplay of Canterbury in 3 Words brought together existing geographical knowledge, player capacities and the affordances of digital interfaces. On a basic level, this gameplay could involve practices of *recognition*, *misrecognition* or *ignoring*, particularly if a story location seemed difficult to find or if players were busy. But further than that, both within and beyond practices of finding, interacting with different sources of information about places also prompted critical moments of *learning*, *remembering* and *discussing* using the game's digital platforms (see Figure 8).

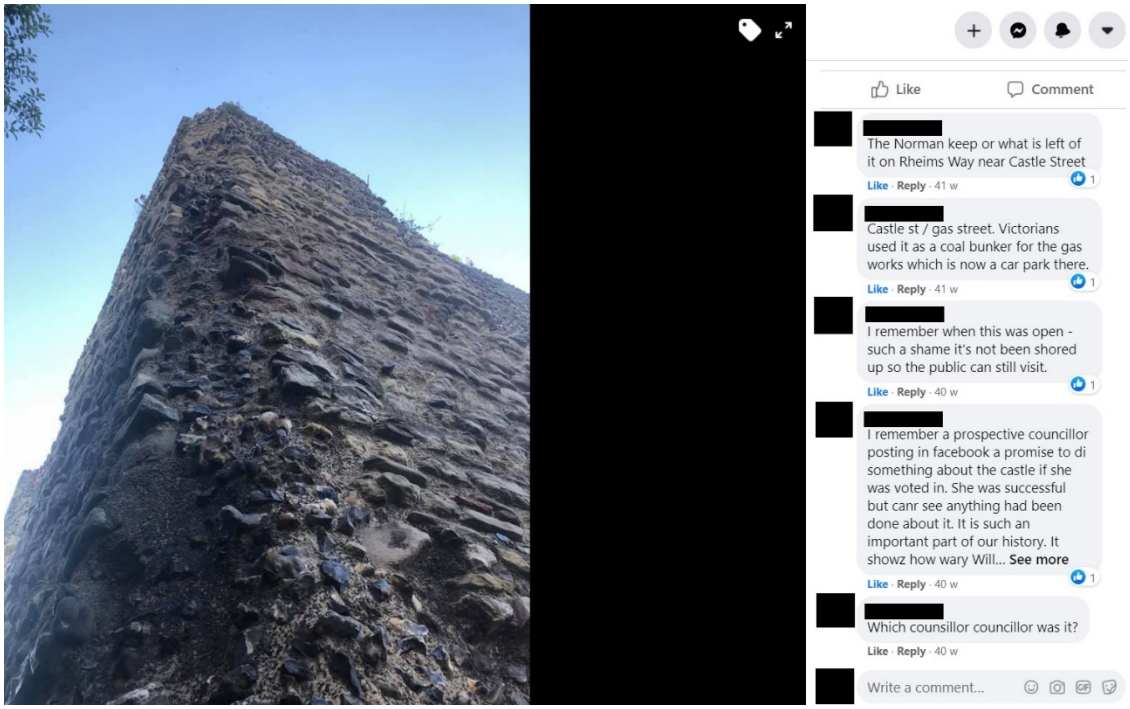

Figure 8: Example of a story that prompted discussion, learning and remembering among players (author's image)

This *relational* interaction with place became a form of aesthetic experience for many players. Multiple interviewees mentioned that the game was adept at provoking the feeling of "sonder": an awareness that there are a multitude of other lives being lived at the same time in a place. More specifically, some players recounted affectively powerful moments of *re-enchantment* that arose from gaining access to previously unknown, small-scale knowledge about a place, in a similar vein to Klausen's observations of GPS-based navigation in Geocaching.[58] Encountered via the three-metre-square grid of the what3words app, awareness of these small details went on to affect players' everyday forms of navigation through the city:

> *"I had no idea that these lights* [see Figure 9] *were used so much in Canterbury. […] I really like that little, like, leafy bit on the bottom, and I've literally never noticed that, and I walk past those lights all the time. So it did kind of make me, yeah, like, appreciate little things that I've not before."*

Figure 9: Image of decorative lights from a Canterbury in 3 Words story (author's image)

Overall, then, we can see how the treasure-hunting mechanic of the gameplay involved performative practices of *attunement* on the part of me as a designer and players of Canterbury in 3 Words. Attunement here refers to practices through which people wilfully or unwittingly adjust themselves to their environments and other people, using pervasive digital media that enable small recalibrations in our embodied, situated and social relationships with place.[59] The affordances of different digital platforms were called upon in the process of finding a balance between satisfying challenge and accessibility, and the gameplay brought these into connection with existing geographic knowledges and routines in ways that prompted critical moments of learning, remembering, discussing, re-evaluating and generally approaching place as *relational*. In some cases, these moments of attunement were affectively powerful, to the degree that players felt a tangible impact on how they subsequently engaged with places in Canterbury. Yet equally there were moments of *frustration* and *inaccessibility* when connections could not be made between different kinds of information about place.

Capacities and Obstacles

Canterbury in 3 Words was hosted and played using two main online platforms: the what3words app and Facebook group for sharing stories. These two platforms, and the devices through which they were accessed, constituted an interface that presented affordances and limitations shaping how players could access the game and conduct themselves as players in engaging with place.

While players generally found the what3words app easy to use, the *granularity* of the three-metre square grid was sometimes found to be a limitation for both creating stories and finding story locations. When navigating the city in person, writers of stories found that GPS inaccuracies on their mobile devices would occasionally cause the app to give them addresses for neighbouring squares, rather than the one where their feature was situated. Relatedly, *finding* story locations often involved a frustrating process of having to tap on multiple squares to identify the correct one, even though the site itself was recognised via satellite view. This is because landmarks were often large enough to be covered by multiple three-metre squares; sometimes tens or hundreds in the case of Canterbury Cathedral or the Westgate Towers (see Figure 10).

Figure 10: Canterbury's Westgate Towers, overlayed with the what3words grid (author's image)

The what3words app could be used to navigate Canterbury either in person using GPS or remotely by clicking on individual grid squares. As a result, even during the game's testing phase before the Covid-19 pandemic, many players realised that the game could often be played without physically having to be in Canterbury.

Typically, remote players would supplement their use of satellite view on what3words with other online mapping tools like Google Streetview, to give them the street-level perspective of the city they could not otherwise get. For some, this made the game much more *accessible* if they did not live in Canterbury, had other commitments or were discouraged from outdoor play by the weather. Yet even for those who regularly visited Canterbury, using online tools often enabled them to fit the game around their daily lives more easily, for example by playing during commutes or work breaks:

> *"Some of them I just kind of recognised and looked on Google, on Streetview. Because a lot of them – obviously with having [a child], it's hard to get out and about, and actually physically go and find them. So that was the good thing in that if I couldn't go out, at least I could still … participate, because I could look on Streetview and then go 'Ah yes, that's where I think it is,' and then kind of narrow it down on the what3words."*

It is interesting to note here how playing a location-based game did not entail being tied to location in the same manner as other situated gaming or locative storytelling media (such as those triggered by a user's GPS coordinates, or those with geofenced areas delimiting where certain actions can take place). Nonetheless, the counterpoint to this accessibility is that experiences differ depending on where the game is accessed from and who is accessing it.

As the first Covid-19 lockdown unfolded in the UK, the demand for remote experiences in which people could participate at home increased, as a range of leisure, entertainment and cultural activities moved online. While I anticipated that launching the remote public version of Canterbury in 3 Words in April 2020 – shortly after the start of the first lockdown – would benefit from this trend and give the game a captive audience, the situation was complicated by the individual circumstances faced by participants during this time. Despite the possibility of remote play, interviews revealed that participants' capacity to play games was often limited by an even greater range of demands on their lives, such as working from home, home-schooling and care responsibilities. *Time limitations* were still the main factor limiting the accessibility of the game, as changes in everyday routines meant that opportunities for play could not be carved out in the same ways.

Other adaptations to the game were also needed to account for the large decrease in people able to visit the city centre. For example, participants in the public version could use licensed images from the internet in their story posts, including cropped screenshots from Google Streetview, rather than having to take photographs (see Figure 11). While there were some limitations in terms of image quality and framing, it meant that people could still contribute story posts remotely.

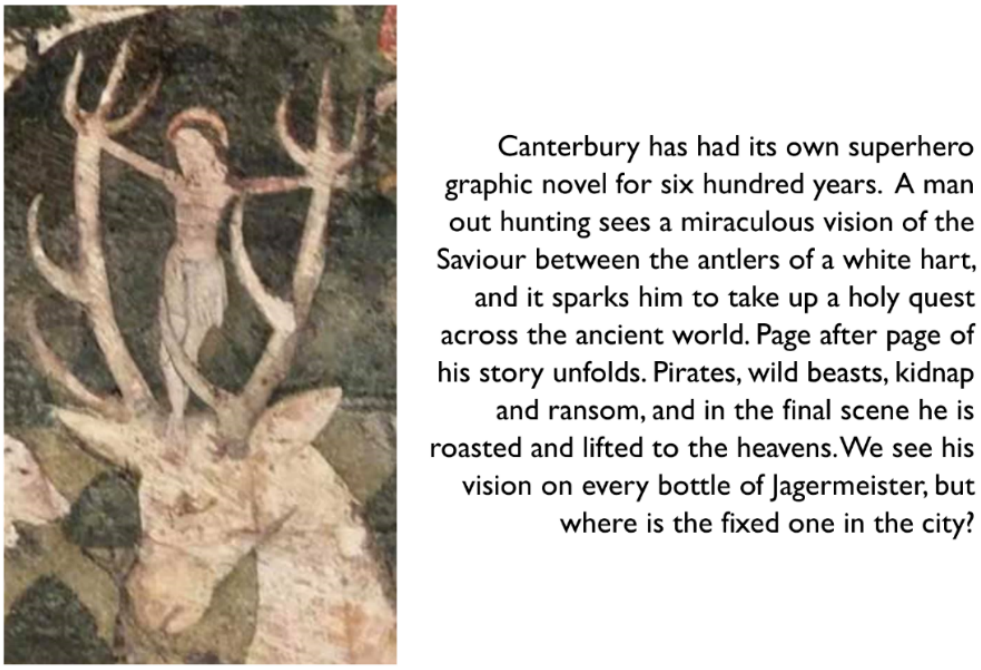

Figure 11: Example of a story created using a cropped licensed image, showing part of a wall painting in Canterbury Cathedral (author's image)

One play activity that could not easily be replicated, however, was the experience of encountering places on *daily journeys* through the city. This low-level engagement with the game was important in the test, as the game relies upon people being inspired to write stories about the city and coming across the locations of those already shared.

I addressed these issues as a designer by attempting to provide new springboards for creativity and interest in the game through regular recurring features: *weekly themes* for writing stories, and *weekly challenges*, challenging players to work out what connects a list of what3words addresses. While only certain individuals chose to respond to the weekly themes when sharing stories, the weekly challenges became a particularly popular form of participation. Participants explained that being given the three-word addresses in advance better suited the affordances of using what3words remotely, as simply finding the thematic connections between locations was a less time-consuming and arduous task than having to identify the precise three-word addresses associated with story locations (see Figure 12).

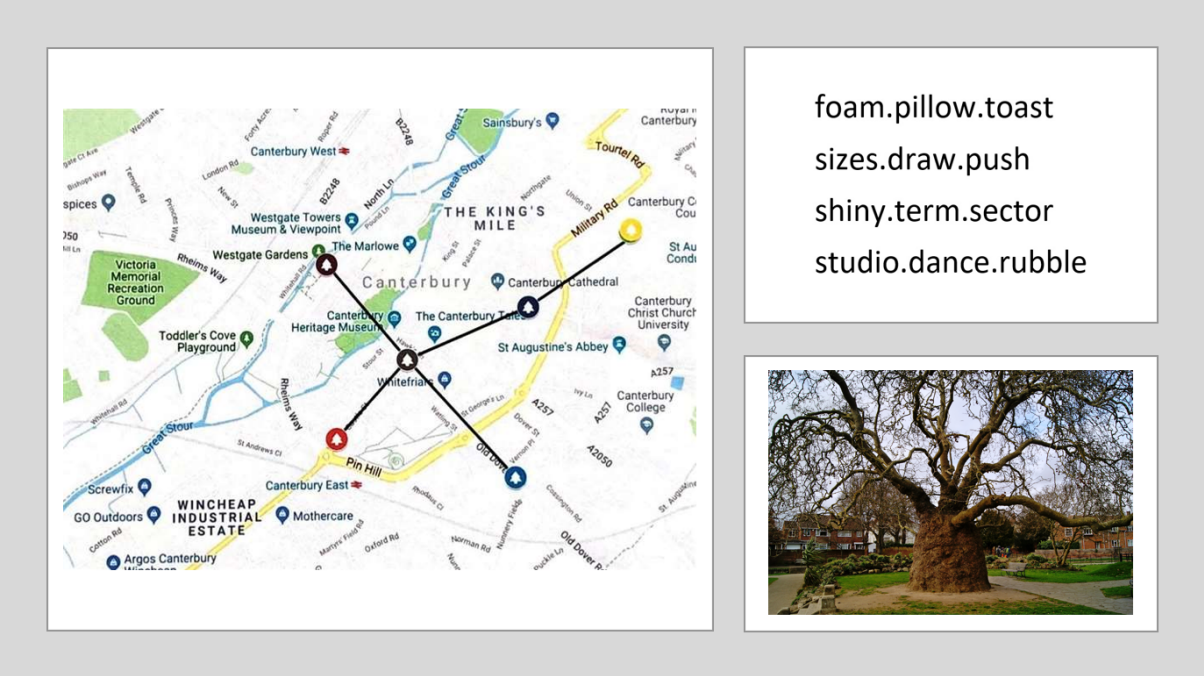

Figure 12: Example of a weekly challenge shared in Canterbury in 3 Words. Each address pointed to the location of one of Canterbury's London Plane trees, planted in the nineteenth century to form the shape of a crucifix (author's image)

Despite the interest in these regular features, the *visibility* of story posts and weekly challenge posts on Facebook was highly limited by the way the platform presents information. Posts on Facebook groups are ordered by recent *engagement* by default, rather than how recently they were posted, which meant that comments or reactions on older posts sometimes buried newer posts.

Post visibility in general, though, was highly dependent on how players *organised their interaction* with Facebook in their daily lives. Many players said that they now rarely spend time scrolling through their News Feed or actively visiting groups on the platform, so would only see posts on occasions when they received a notification. While for those who did spend time scrolling through their News Feed, Facebook's algorithm would not always present these players with content from the Canterbury in 3 Words group:

> *"If it doesn't ping up as a notification, I won't see it. Because I won't remember; I'm too busy doing other things to think 'Oh, a week's up; let's see what's going on.' You know, I will not hunt it out specifically."*

> *"Normally I scroll through Facebook far too much. So, they come up on my feed. And occasionally, if I see that I've got … or if they don't, it'll come up to say that I've got, like, a notification within that group, and I'll see it that way."*

These limitations fed into wider concerns around the *appropriateness* of using a Facebook group as a game platform. Most players acknowledged that Facebook's wide and diverse user base made it an effective social media platform to use for the game. Yet ethical concerns about *privacy* were common, due to both the perceived publicness of the platform and the ambiguity regarding how Facebook uses user data.[60]

Individual players negotiated these concerns in different ways. Some chose to remain anonymous by asking me to post their stories. Some were only willing to send private messages to me as the game administrator, while others took a more proactive approach in messaging participants to check their solutions to story posts.

What these observations illuminate is that playful applications of locative media are still highly limited by the affordances of their constituent platforms and devices in influencing player *capacities for attention and engagement*. These forms of mediated play also intersect with broader accessibility factors and personal negotiations of ethics that influence players' daily lives, supporting Flanagan's argument that location-based games do not necessarily provoke affectively powerful and/or critical engagement with place.[61] Rather, the relationship between digitally-mediated, cartographic navigation of place and perceptions of place narratives in these games is highly performative and embodied; intertwined with relationships of power that shape the degrees of agency players are able to have in playful encounters with place.

Conclusions

The aim of this paper was to identify some of the possibilities and challenges that location-based games offer for engaging with places and the processes through which they become meaningful to us. By attending to the design, development and play of Canterbury in 3 Words as an example, this paper has charted the creative tactics of navigation employed by players in negotiating the game's rules and infrastructures; practices of attuning between different types of site-specific information; and the limitations of the game's platforms for accessibility and attentional capacity.

Across these findings, one of the consistent observations was how both designer and player practices convey the *affordances* of locative media for engaging with place in different ways. In attempts to develop and negotiate meaningful structures for interacting with places and mapping their stories, an attention to the outcomes of design and play tactics can reveal the different "inhibitors" and "disinhibitors" presented by media employed in location-based games for this purpose.[62] Within the framework of a game, these affordances can potentially allow players to pursue forms of place navigation that they personally find *rewarding*. Yet examining the obstacles, capacities and routines affecting how players use these platforms can also demonstrate the *inaccessibilities* and *ethical complications* locative media often present when engaging with place.

An awareness of these contextual, contingent and personal ways in which players navigate in location-based games demonstrates the *performativity* of digitally mediated and cartographic engagement with place.[63] In particular, gameplay that brings into connection multiple sources and types of information about place can develop critical capacities in players towards

understanding place as *relational*. Being able to attune to these connections can generate new (or remembered) *site-specific knowledges* and provoke feelings of *re-enchantment*, which subsequently change how players interact with places in their everyday lives. Yet players who are unable to make these connections, or find the process of doing so difficult, can be left frustrated. Finding a balance that satisfies and is accessible for a wide range of players is ultimately a challenging process of attunement on the part of designers.

In this regard, what future research might seek to investigate is how the design and play of location-based games could be more deeply integrated into everyday community practices. Developing more accessible, collective and meaningful location-based games requires a better understanding of how a range of locative media, as well as practices of play, fit into the emplaced daily lives of people. With such knowledge, we can better evaluate what scope there is for location-based games to reconfigure forms of attention towards place as an important and interesting domain of experience. This paper intends to provide a starting point in this endeavour.

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Jack Lowe is a cultural geographer, digital media artist and visiting lecturer in Digital Storytelling at Royal Holloway, University of London. His practice-based PhD research involves independently developing location-based games to explore their potential as platforms for site-specific storytelling. Based in East Kent, Jack's work has used locative audio (*The Gates to Dreamland*, part of the Arts Council England-funded story mapping project A Different LENS), QR codes (*The Timekeeper's Return*, commissioned by Canterbury Cathedral Quarter) and the what3words app (*Canterbury in 3 Words*) to develop participatory methods of using digital media to engage with places. These projects follow prior professional and academic experience in this area. Jack has worked with four-times BAFTA-nominated interactive arts organisation Blast Theory as a volunteer; with StoryFutures as a consultant on location-based games; and has presented research on the narrative environments of digital games at international conferences on several occasions.

https://jackalowe.blogspot.com

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