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Hidden Treasure:
Sharing Local Information

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Abstract

When we move though space, we act on a myriad of information; memories, background knowledge, and expectations, as well as external sources of information, such as analogue maps or guides, and digital satnav systems. The decisions we make as we navigate unfamiliar spaces are often influenced by the information we gain from such guidance, and regardless of whether they are paper or device-based, they present a very specific view of the world. In the following discussion, it is argued that these ways of representing spatial information neglect the quality of places that people often want to learn about and experience. This local knowledge is often the most useful and rewarding, but most of the time there are no suitable frameworks for the social exchange of this information between those who hold the knowledge and those who seek it. In order to understand how such sharing of local knowledge may be enabled, a case study of the activity of geocaching, which is a global positioning system (GPS) assisted hide and seek game, is introduced. The life of one particular 'cache' is discussed in detail; and in conclusion, a series of key practices are described that characterize the geocaching experience and may provide insights into the sharing of local place-based information.

"The map is not the territory."
Korzybski, 1933.

Introduction

With a map, we can locate ourselves and find our way in unfamiliar environments. GPS navigation systems displaying dynamic or mobile maps on handheld devices are becoming ubiquitous as an alternative to paper maps. So many people have become so accustomed to making decisions about where to go and what to do based on digital map information that they have come to 'feel lost' without it. However, it is easy to forget

that when we use a satnav system to assist us in navigating a place, we act on a specific form of information. At a recent conference of cartographers in London, Mary Spence, President of the British Cartographic Society, commented:

> Corporate cartographers are demolishing thousands of years of history—not to mention Britain's remarkable geography—at a stroke, by not including them on maps, which millions of us now use every day. We're in real danger of losing what makes maps so unique, giving us a feel for a place even if we've never been there. (Spence, cited in Anon. 2008)

Ed Parsons, geospatial technologist at Google, countered this view by saying that the way people use maps is changing, with the consequence that the individual is able to construct his or her own map of the world. "Internet maps can now be personalized, allowing people to include landmarks and information that is of interest to them. Interactive maps will display precisely the information people want, when they want it" (Parsons, cited in Anon. 2008). It seems the Google vision of the future of maps lies in the individual choosing which information he or she chooses to display when navigating through space.

Yet there is often little thought given to just how maps present information about the world. We typically accept paper maps or GPS systems as the 'true' way of describing the physical world and how to navigate through it. We also tend to assume that a map represents all of the necessary information about a space, and that it is 'accurate.' The deficiency in this assumption about maps is highlighted by Luis Borges, who imagined a map as big as the space it represents:

> …the Art of Cartography attained such Perfection that the map of a single Province occupied the entirety of a City, and the map of the Empire, the entirety of a Province. In time, those Unconscionable Maps no longer satisfied, and the Cartographers Guilds struck a Map of the Empire whose size was that of the Empire, and which coincided point for point with it. (Borges 1998, 325)

As Borges emphasizes, cartography is not a perfect art, since, unless the map is drawn on a one-to-one scale and has the same physical characteristics as the territory itself, it cannot be perfectly accurate.

In fact, maps deliberately exclude a great deal of information and are a highly specialized way of representing the world. One of the key uses of maps is cadastral in that maps focus on representing ownership of territory. These maps are drawn with a view from above, a perspective that suggests objectivity. However, increasingly, we rely on maps whose prime purpose is not to show territorial boundaries, but to assist navigation. These maps are also often depicted in the bird's-eye-view format, but with the advent of GPS-based navigation systems, these 'maps' are also represented in an egocentric perspective. Maps with such a viewpoint enable users to view information

about the space around them from the same perspective, as their immediate visual connection with the environment, so that the person is effectively at the 'center' of the map. This is accentuated by the fact that the user's current position on GPS maps is indicated on the map as a dot or other icon, so that, again, the user relates to the map based on his or her position in relation to the data provided. This may not directly appear to enable the personalization described by Parsons from Google, but it guides users into the mindset that the map is reflecting and representing their view of the world. In addition to this, the map itself can also be tailored to show or hide specific relevant features, but both aspects encourage a way of thinking that accepts the map information as a true representation of the world.

In the following text, we introduce an alternative approach to mapping and to guiding people in space. The approach is to propose a different format for representing and also critically acting on information about spaces. Initially, a theoretical position on how the sharing of local, rather than global, information offers a much more meaningful way of making spatial qualities transferable. It then proceeds to discuss a case study of an activity called geocaching as a way of investigating how these ideas can be integrated into a spatial experience. It concludes by outlining a series of practices that work together to create a framework for sharing local information.

Rediscovering the local

Our daily experience of space is not global, but highly personalized and tightly interwoven with features of our social lives and dynamic factors such as time. Doreen Massey refers to this as the chance of space, and proposes, "Space as the closed system…presupposes (guarantees) the singular universal. But in this other spatiality different temporalities and different voices must work out means of accommodation. The chance of space must be responded to" (Massey 2005, 111). As Massey points out, space is experienced and enacted not as an abstract quality but as practiced experience.

In everyday life, this manifests itself in a number of ways. For instance, when we travel to a new or semi-familiar place, often what we really want to learn about it is local knowledge—the shortcut, the best restaurant, or the history of the neighborhood. This information resides in people as memories and knowledge, not in abstract sources of information. In order to tap into this resource of local knowledge, it is critical to understand where such knowledge about a place resides.

The Internet has become a host for much information about place, and a 2005 study showed that 25% of search engine queries sought place-related information such as "hardware stores in Manhattan" (Himmelstein 2005). But search engines cannot always identify relevant places (Ibid.), mainly because they do not have access to enough personal information about the user. Similarly, in the physical world, people also try to make distinctions about places, mainly through observation. For instance, assumptions are made based on which places are popular (Tse 2002), or on physical

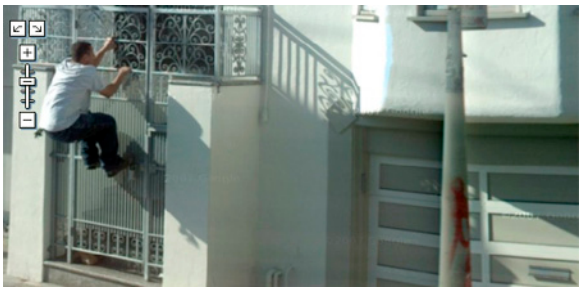

Figure 1
Streetview image (Singel 2007).

appearance (Pillsbury 1987). However, there often remains a significant gap between the information about a place that resides locally and the need for information from those unfamiliar with the place. In fact, the desire to create a local and personal insight into the world of global places is demonstrated by many examples of people seeking out the incidental personal characteristics present in global phenomena; for instance, the public fascination with the range of inadvertently captured activities visible in the millions of pictures that form Google Streetview (see Figure 1).

The Streetview images essentially capture the 'chance of space,' fleeting moments when something happens that can affect how the space is viewed and acted upon. The question is how can these qualities not just be recognized but also captured so that a link is formed between those who hold local knowledge and those who seek it?

Sharing the experience of space

In seeking to find and act on local information, a key aspect is that it very often involves a human-to-human contact of some form. For instance, often the best tactic to find your way in an unfamiliar place is not to access an online map, but instead, to ask someone. The act of giving and receiving directions or guidance necessitates establishing a common language between two people who may not know each other. Asking a local about the place you're in creates a sense of shared experience. It bridges the gap between the image and the lived experience. It creates a situation where knowledge, which the locals have about the place, can be shared and valued. In order to realize the value and deliverability of local information, a way of gathering or stimulating the authoring of such local information in a publicly available format is required.

Public distributed authoring is already a common way for people to share information, through formats such as blogs and photo sharing Web sites. But what is needed is to extend this approach to capturing and sharing local place information, which will require people to adjust their traditional views of spatial information as created and delivered by experts. Spaces will be seen as useful and not based on functional qualities, but instead, based on social recommendations, whether these people are friends or strangers. For instance, the old-fashioned postcard illustrates a successful format for sharing a local experience with someone not present; the photograph of the place, together with some reflections on the experience, help to convey a sense of 'being there.'

There are many ways of sharing place-based experience with others, as highlighted by Brown in his ethnographic study of a project in a city in the United Kingdom, where he points out that "tourists already put considerable effort into sharing their visit with distant others – such as through travelogues, or sending photos home from their holiday" (Brown et al. 2005).

However, in order for this experience of space to be experienced, there needs to be a structure for the giving and receiving of information, particularly in order for there to be a transfer of local knowledge. A successful format for this transfer of information is typically not cartographic or through images, but oral. The narrative as a format creates a way of making the personal, hard-learned information of one person or group accessible to another person or group. In fact, there are many formats where information about a place is woven into a narrative structure. Massey outlines how space is waiting to be enacted: "In this open interactional space there are always connections yet to be made ... space is indeed the product of relations" (Massey 2005, 11). She terms these potentials 'trajectories,' which suggests an inherently open-ended structure and also the possibility for multiple imagined outcomes. In order to enable the sharing of local information about places, it is therefore critical to create a framework for individuals to construct their own stories, so that they are able to shape the trajectory of the narrative.

Technology narratives

The narrative format also holds potential for the way in which spaces are experienced through technology. Currently, the ubiquity of GPS is not necessarily resulting in people learning more about places. Instead, it acts more as a form of knowledge off-loading, much in the way a diary or mobile phone means we do not have to remember all of the dates or phone numbers in our everyday lives. Consequently, a GPS navigation system actually causes people to 'switch off' so that they pay less attention to the spaces and places they are moving through. Since satnav devices essentially deliver instructions, the passive interaction paradigm does not encourage the user to map the information he or she is receiving onto the real world. Therefore, an approach to constructing meaningful interactions through technology, such as satnav devices and online maps, is required, so that they enable the user to actively engage with the place-based information.

According to David Turnbull, the narrative format creates such possibilities since "storytelling is how a particular piece of technology becomes seamlessly integrated into our cultural practices" (Aedy et al. 2002). This reflects the approach of Lave and Wenger (1990), who, in their work on learning, highlight that knowledge acquisition normally occurs as a function of the activity, context, and culture in which it occurs, and as such, is situated. They further emphasize that "social interaction is a critical component of situated learning, and it is vital that learners become involved in a 'community of practice' which embodies certain beliefs and behaviors to be acquired." These communities of practice are the key structures through which technologies can become integrated with

activities in a way that the technology ceases to be external to the task, but, rather, is bound intimately to it.

In the following case study, the use of GPS technology is introduced in the context of the activity of geocaching. Although GPS is the enabling technology of the activity, we discuss how it appears to have become integrated into the social and cultural situation of the individuals who take part, so that it enables those who participate to construct their own technology narrative.

Case study: Geocaching

Geocaching is an outdoor treasure-hunting game in which the participants use a GPS receiver or other navigational techniques to hide and seek containers, called 'geocaches' or 'caches,' anywhere in the world. The game originated in May 2000, following the end of 'selective availability,' or the date when more accurate GPS data was made available to the general public. A GPS enthusiast, Dave Ulmer, eager to explore the possibilities of the newly available technology, hid a 'stash' in Oregon, USA, at the following co-ordinates: N 45° 17.460 W 122° 24.800. According to the geocaching Web site:

> …within three days, two different readers read about his stash on the Internet, used their own GPS receivers to find the container, and shared their experiences online. Throughout the next week, others excited by the prospect of hiding and finding stashes began hiding their own containers and posting coordinates. Like many new and innovative ideas on the Internet, the concept spread quickly - but this one required leaving your computer to participate. (Geocaching.com 2008)

The activity has grown remarkably since these beginnings. Currently, there are 356,759 registered members, based all over the world. The quick take-up of the idea underlines the attraction and subsequent popularity of the activity. It also highlights the fact that people may use the Internet to gain guidance on places of interest; but the real interest is in visiting the physical location, rather than reading about it. Geocaching unites the world of digital information and that of the real terrain, since a geocacher sets out with abstract latitude and longitude coordinates and must then seek a route in the real space. The key technology used is a GPS receiver of some form, the most basic such device being the Garmin Etrex (see Figure 2).

Figure 2
A Garmin Etrex GPS receiver.

A GPS receiver can display a range of spatial information. At the most basic, a trace of the user's movements in line format is shown. If the user has entered a 'route,' i.e., a path calculated from his or her start point to a particular chosen destination, the distance to the end point is also shown. A compass indicates the trace of the path relative to true north, and a zoom function enables the user to both magnify and reduce the scale of the information shown.

On the more sophisticated GPS devices, this data is displayed overlaid on a map representation. This map is downloaded onto the GPS system and provides detailed information about features in the surrounding environment to enable the user to orientate him or herself. Typically, geocachers will refer only to a GPS device in the search for a cache and will not use paper maps or other guides. Since the cache's location is described only in the form of latitude and longitude coordinates, a paper map is not particularly useful, as it does not display GPS data at a scale that would be useful in finding the cache close to its destination. A geocacher would need to carry a range of maps at different scales in order to navigate to the location, which is impractical.

It sounds deceptively easy to seek a cache; all that is required is to enter the coordinates of the destination into the GPS and follow it to the destination. However, while it is one thing to know where a location is on a map, it is quite another to actually attempt to arrive at that location. The main problem is that the abstract space between two coordinates hides a wealth of topographical information, which means that it is not possible to navigate directly to a cache by going straight in the direction to which a GPS receiver points. The coordinates give no indication of the relationship of the 'theoretical' point in space and the physical properties of the location.

In order to appreciate how geocaching is practiced and the way in which it can inform an understanding of the function of spatial narratives, the life of one particular cache is studied in detail. The cache was placed in a semi-rural location in January 2005, and since then, there have been over 74 visits. The cache is literally a plastic weatherproof box (e.g. see Figure 3) that contains a logbook, a throwaway camera, and a short description of geocaching for beginners.

People

Geocachers are a mixture of individuals, pairs, and groups. However, the activity has a very social aspect, with geocachers generally acting within some form of social structure, i.e., even if they find the cache alone, they will share the find online, recommend it to another, or leave a picture on the throw-away camera (see Figure 4).

Figure 3
The 'cache'.

Figure 4
Faces of geocache visitors recorded on a throw-away camera in the cache.

Seventeen visits were logged as specifically being found by either two or three people; six identified themselves as a 'team'; and three as 'family.' When geocachers choose to identify themselves as 'team xxx' or 'family xxx,' it suggests that within the group, there is a clear division of roles and aims for the game. Typically, each member of the group writes a separate log, outlining his or her role in the search. The logs also indicate that the people who participate in geocaching form a community and recognize their membership. There is a specific language used and non-geocachers are labeled as 'muggles.' (the word is taken from the *Harry Potter* book series). Geocachers do not use their real names but instead have usernames, and some even have specially-printed stickers bearing their username, which they inscribe with the particular date and time of a cache find.

Additionally, many of the geocachers seem to undertake the game regularly, with most having over 100 caches logged. A number have registered an extremely large number of caches, with 20 of the 74 visits having collected over 1,000 caches. The highest cache number listed is 5,000, which is a large number, considering that this person has only been a member of geocaching since 2003. This illustrates that, for some people, geocaching is not just a one-time activity but has developed into a form of hobby.

Besides the actual hiding and finding activities, people arrange social gatherings to meet others who geocache. In this manner, geocaching supports a whole social structure, complete with distinct roles and hierarchies. For instance, despite the superficially flat social hierarchy, geocachers have developed sophisticated ways of distinguishing status. This is primarily achieved by the number of caches a member is listed as having found, with more caches indicating expert knowledge and therefore a higher status. Additionally, there are two or three 'gatekeepers,' or key members per county, who are responsible for checking each cache before it is authorized. It is clear that geocachers value these status 'levels' and that the social aspect of the activity is an important quality that they choose to develop over time. In this manner, the spatial aspect of geocaching provides not just a basis for the sharing of experience about places, but also supports and stimulates a rich social framework.

The location

A fundamental aspect of a geocache is, of course, the significance of the location. It is common for geocachers to hide caches in locations that are important to them, reflecting a special interest or ski ll of the cache owner. The geocache 'find' then becomes a way of sharing an experience of place amongst a wider audience. However, a key aspect is that, in the process of finding the cache, the searcher also builds his or her personal experience of the cache location. The effort in finding the cache is a manner of acquiring knowledge about the surroundings and the location itself. There is also a guideline established by the organizers of geocaching to prevent 'saturation'; caches placed within .10 miles (528 feet or 161 meters) of another cache may not be published on the site. This is an arbitrary

distance and is just a guideline, but the ultimate goal is to reduce the number of caches hidden in a particular area and decrease confusion that might result when one cache is found while looking for another.

Since most geocachers hide caches as well as seek them, there is also a critical aspect of the activity that is concerned with identifying interesting places to site a cache. Often, geocachers will choose to site caches in their local area, since they tend to know it more intimately, whereas their search for caches is often undertaken in a much broader geographic area. In the hiding of caches, geocachers are creating a whole body of local knowledge.

The lengths to which geocachers go in order to seek out places with special characteristics as sites for a cache is highlighted in the particular subsection of geocaching called 'lost place caches' (last accessed 4 December 2008). These caches are specially selected locations, such as abandoned buildings or difficult-to-find places. These cache descriptions tend to be written in the form of a longer narrative with an outline of the history of the place. A key aspect of defining the location is that there is no requirement to invent directions or tell geocachers how to find the cache. The GPS coordinates identify the site of the cache, generally requiring that the person searching for the cache creates his or her own journey to the location.

Hiding and searching

Geocaching is a two-sided activity, since it is possible to both hide and find caches. In the geocaching community, many people actively participate in hiding and seeking caches, so that they often have a recorded 'cache-find value' of over 1,000. Typically, such geocachers will also have hidden a number of caches, although this is a much lower number, generally in the region of 10 or 20. This dual nature helps to perpetuate the activity by creating an ever-changing and ever-growing number of caches.

In addition to the simple act of finding the cache, there is also the secondary aspect of the exchange or 'trade' of objects in the cache. These are trivial, playful items, such as water pistols, sparklers, and puzzles, which act as tokens to acknowledge the visit and also as a way of creating an exchange between other geocachers. A further option is to trade a 'geocoin,' which is a special coin created by individuals or groups of geocachers as a kind of signature item or calling card. Each geocoin is assigned a unique tracking ID, which allows them to travel from geocache to geocache or to be passed amongst friends, picking up stories along the way. These tokens add a further level to the hiding and seeking activities, by creating mobile, trackable objects that also allow the sharing of place-based knowledge. Since these objects are totally dependent on the individuals who move them, they add an unpredictable quality to the geocache experience. Overall, the range of activities that encompass geocaching enable a rich, multi-layered experience.

The log

The log from the cache was studied to identify the way in which this format was used. The log provides a critical part of the geocaching experience and exists both online and in paper versions. Interestingly, the entry into the paper log, which is made at the cache location, is almost always directly replicated in the online version. Of the 74 individual recorded logs, seven were made only online, and two were made only in the book. This is despite the fact that the online log must be completed at a later time. The text follows a similar format for the description of the search (how long and how difficult, weather, etc.), often with some form of grade (e.g. great cache), followed by a thank-you to the owner, and also an outline of what objects have been traded (if any).

The specialized language adopted by geocachers is well used, and, in particular, the practice of thanking the owner of the cache. For example, "TFTC" means, "Thanks for the cache." Acronyms are written by geocachers in physical cache logbooks or online when logging cache finds. "TNLN/SL" means, "Took nothing. Left nothing/signed logbook." These are usually written in cache logbooks by geocachers who do not trade for the material contents of the cache.

The text from the logs was studied to assess to determine whether there were common responses that could be identified across the range of entries. They are summarized below.

- Sharing personal memories: "The tower is called 'Wieterturm.' As a child, I went walking in the woods near there many times with my granny and grandpa." *(user: Alice, date: January 17, 2005.)*
- Sharing current memories and making suggestions: "We had a pleasant walk. The view is great, and even better for the fact that it's possible to enjoy a nice beer up here at the cafe." *(user: Steinmann, date: April 15, 2005.)*
- Demonstrating ownership for a person visiting from far away: "A trip into the past. Found the Cache fine. Greetings from a former Northeimer, now living in Munsterland." *(user: Edewolf, date: May 15, 2005)*
- Linking with current activities: "Found at last. I was almost too late for my tuition, as I was still up on the hill at Wieter at 12.55 and needed to be back down at 13.10 to teach my group (Corvinianum)." *(user: Jonas Voelcker, date: February 13, 2007)*
- Reinforcing the 'secretive' and club-like aspect of geocaching: "Great place for a cache. We were a bit worried, when we first saw the carpark, that we would be discovered by lots of muggles, but when we got to the location, there was nobody around." *(user: Fishtowncatcher, date: September 7, 2007)*
- Outlining and describing the role of another person in the hunt: "After a lot of climbing around Niklas, managed to find the container." *(user: Rpadie33, date: April 9, 2007)*

- Acknowledging the role of another geocacher (not known to them) in the search: "Found and logged the cache today with help from the photos of my predecessor, 'flx37.'" *(USER: GeoRouter, DATE: August 30, 2008)*
- Demonstrating a difficulty level – finding the cache at night: "Found this cache with Dragon1978 after a little night tour." *(USER: Lollipoformel1, DATE: May 22, 2008)*

All of these entries are inherently about the sharing of an experience, and reinforce the idea that local information is best made public through a process of social exchange.

Practices in sharing local place information

The study of a single geocache described above suggests that there are some key practices that underpin the activity. Although these practices are discussed here in the context of geocaching, it is possible that they can offer some insight into the broader issue of how to create meaningful structures for sharing spatial information:

1. Defining and sharing of 'valuable' places

The first practice that was observed is in the foundation of geocaching; the sharing of information about particular places. Generally, geocachers will choose to site their caches in places local to where they reside, with the consequence that they create a body of hard-earned local knowledge. This process of defining and exchanging knowledge is made dynamic through the written and photo log entries, which create a framework for the continual building of shared memories about the cache.

2. Not just the destination but a journey, a discovery, and a challenge

Critically, geocaching does not require the participants to define the route to the cache in the description, but leaves it open to the participant to define the journey they take. Those seeking the caches can construct their own experiences of the local place through the process of navigating to the site. The journey thus becomes a process of discovering local places, which is both unique to them and effortful. In this way, they are not passive consumers of someone else's information, but are given room to construct their own memories of the place and then to share them with others.

3. Building a technology narrative

On the surface, the publishing of raw GPS data leaves little room for participants to construct their own narrative. However, it is the way in which this method of publishing data leaves people free to plan the way they choose to act on it in the searching or finding activities that distinguishes its application. The GPS data becomes a departure point for multiple trajectories, as Massey terms them. It may suggest a fixed outcome or goal, but actually, it simply creates a point in space to which people weave their own practice of the use of technology. They are free to choose which GPS device they use and consequently, what level of additional information with which they augment the route.

Additionally, the GPS receiver is often but one part of a selection of technology interactions available. Despite the fact that the Web site provides a key structure for geocaching, the ability to engage with a range of media formats seems to be a critical aspect of the success of the activity. The use of photography and analogue media formats, such as the paper-logging system, enables participants to negotiate their own narrative through the technology. A further critical aspect is that that media is used before, during, and after the geocache search, which means the interaction with the technology is not limited within the frame of the activity, but becomes an open-ended system.

4. Social exchange and sharing of the search

This requires negotiating social roles and terms. In order for social exchange to occur, it is important that there are frameworks for people to understand the modes of communicating. This necessitates the establishing of roles and a common language so that the sharing activities operate on some form of commonly agreed upon and understandable format. A key aspect of this social framework is that it is facilitated by commonly understood and simple rules for communicating. Yet one of the clear outcomes from the study of the geocache is that the social aspect of the activity is by no means an unimportant by-product of the experience. Instead, it is central to it, and in some ways, the key motivator for those that participate. The opportunity to share place-based experience with others seems to be very rewarding for many, and the accompanying multi-layered system of feedback before and after the activity satisfies a collective need to share the expectations and memories of the event with others.

5. Collecting

One practice that might not immediately seem key to geocaching is, in fact, very important for many geocachers; that of the challenge of 'collecting' caches. In a study of a location-based game, it was found that it is "the role of the collection of location-based content in identity work; in developing a sense of challenge and achievement; in defining a sense of group camaraderie; and in creating a playful sense of competition among group members" (O'Hara 2007). The attraction of the practice of collecting is that it encourages people to continue to take part in geocaching.

In fact, it is well known within the geocaching community that it is somewhat addictive in this aspect, with participants often going to great extremes in their collecting activities. This is sustained by the fact that there is a multi-layered hierarchy of achievement; the first ten caches, and then the first hundred, or the most difficult night cache, etc. The participant can set a goal within the framework of the activity, achieve it, and then go on to define a more complex challenge. This then occurs within the context of a social structure that can observe and interact with the participants collecting achievements, which provides the important component of external approbation.

Conclusion

Often, when we set out on a journey to explore a new area, we will refer to a map, as a way of gaining knowledge about how to navigate to the place we are about to visit. Despite the fact that we often rely on maps to inform us about places, they offer a very specialized viewpoint on the spatial quality of the environment. As discussed above, it is the idea that, actually, we often seek and act on an entirely different set of information when we travel to a new place. In particular, we often rely on social interaction to define our experience of place, and it is important to be able to find ways of sharing spatial information within such social settings. Our investigation of geocaching provides a new way of understanding how narratives around local knowledge are created and how geocaching practices create meaningful structures for sharing spatial information.

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