

# Experiences with Geographical Collaborative Systems: Playfulness in Geosocial Networks and Geocaching

**Clare J. Hooper**

Eindhoven University of Technology  
Eindhoven, The Netherlands  
c.j.hooper@tue.nl  
+31 40 247 3613

**Jill Walker Rettberg**

University of Bergen  
Bergen, Norway  
jill.walker.rettberg@uib.no  
+47 55 58 84 31

## ABSTRACT

Playful geosocial services are being used more and more widely, yet we still don't understand people's experiences with them. With wide-ranging privacy issues and enormous choice between rival services, it is important to understand this area. We present the methodology and results of a study delving into experiences with a GPS-based scavenger hunt, geocaching, and a geosocial network, Gowalla. We highlight similarities and differences, noting particularly the importance of 'hidden communities' and a strong contrast in terms of 'being versus doing'. We describe variations in types of playfulness within each service.

## Author Keywords

Geosocial networks, geocaching, Gowalla, TAPT, UX.

## ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

## General Terms

Human Factors.

## INTRODUCTION

We wanted to better understand people's experiences with playful geosocial services on smartphones. There has been much discussion of the privacy issues of such systems [1] [4], but less consideration of why "checking in" to places gives people pleasure or is useful to them.

Despite the widespread success of these services, even loyal users can struggle to express why they use them. There exists a plethora of choice between rivals: among others, Foursquare, Gowalla and Facebook Places all superficially provide one core function, 'checking in' to a location. Can we dig deeper into the meaning of these experiences?

This paper looks at a popular geosocial networking service, Gowalla, and a GPS-based scavenger hunt, Geocaching.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

*MobileHCI 2011*, Aug 30–Sept 2, 2011, Stockholm, Sweden.  
Copyright 2011 ACM 978-1-4503-0541-9/11/08-09...\$10.00.

We organised sessions with two focus groups to analyse the services using Teasing Apart, Piecing Together (TAPT). We conducted a meta analysis of the TAPT output.

We examined Gowalla because of its popularity in Norway, and geocaching as it is a contrasting service whose primary function is not to 'check in', but to find a cache.

## GOWALLA AND GEOCACHING

Gowalla<sup>1</sup>, founded in 2007, is a geosocial network: you use a mobile web app to check into locations, notifying friends on the service that you are there. You can see where friends have recently been, post or view photographs of locations, see who else has been at locations, and leave comments for friends. There is also a gaming aspect: you can find virtual tokens at some spots, and you can collect and swap these.

Geocaching<sup>2</sup> is a collaboratively organised scavenger hunt: people use GPS coordinates and clues on a website to find 'caches'. While it has antecedents in pre-digital treasure hunts, geocaching with GPS began in 2000 when private citizens were given access to more accurate signals, allowing more precise locations to be found. Today the game revolves around the website, which lists caches and hosts discussion forums. Several mobile phone apps exist.

Certain functional similarities are evident across both tools:

1. Linking oneself with a spot ('checking in' or finding a cache), and broadcasting that link.
2. Competitive aspects. Gowalla spots have 'leaderboards', where users are ranked by how often they have checked in. Geocaching has a 'first to find' concept: the first person to locate a cache gains prestige. Ranking encourages competition in other areas, such as number of caches found.
3. Mechanisms to encourage exploration:
  - a. Users may define sequences of locations ('trips' in Gowalla, 'trails' in geocaching).
  - b. Gowalla awards virtual badges (pins) when new countries are visited.
  - c. Visualisation tools such as Google Maps, for viewing check ins and caches.

---

<sup>1</sup> <http://gowalla.com/>

<sup>2</sup> <http://www.geocaching.com/>

4. Travelling items. Geocaches may contain ‘travel bugs’, which may have goals such as reaching a location. Gowalla awards virtual items at random upon check in: as in geocaching, users can move items.

This study is not the first to examine such tools. For example, Farman [2] presents an in-depth analysis of geocaching and embodiment, while O’Hara [8] considers motivations for geocaching, including walking, exploration, collecting, community and competition. In contrast to prior work, we aimed to compare experiences with such tools.

**METHOD: FOCUS GROUPS WITH TAPT FOLLOWED BY META ANALYSIS**

There exist various approaches to understanding User Experience (UX), from cultural probes (to elicit attitudes to life and technology [3]), to self-assessment manikins (images of puppets for measuring emotion [6]), to Teasing Apart, Piecing Together, or TAPT (for understanding social and emotional aspects of experience [5]).

We chose to use TAPT. In contrast to questionnaires or interviews which focus on what people think and say, TAPT elicits tacit knowledge and latent needs. It was chosen over cultural probes because probes don’t elicit specific experiences. It was chosen over self-assessment manikins because we wanted users to state key words, not rate emotions that we specified.

TAPT concerns understanding and re-providing experiences in new contexts. For example, it has been used to facilitate the design of real-world versions of experiences that are initially situated on the web (such as microblogging and wiki usage). It falls into two phases:

1. ‘Teasing Apart’ involves analysing an experience. Practitioners examine ‘surface elements’ (design aspects such as components on a webpage or physical components of a real-world experience) and ‘experienced effects’ (literal outcomes such as changes after a wiki update, and abstract outcomes such as emotional and social effects). The final stage of Teasing Apart is to review the elements and effects to identify what is essential to the experience, and write a description of the ‘distilled experience’ based on that. This description does not refer to the original modality of the experience.
2. In ‘Piecing Together’ practitioners use the distilled description as a springboard for redesigning the initial experience in the new context.

Although our work did not concern the redesign of geosocial services, we did seek to understand them. The analytical phase of TAPT was suited to this goal.

We used focus groups because multiple participants would reduce issues of subjectivity and give broader insights. We held sessions with two groups, one composed of Gowalla users and one of geocachers. We selected participants local to the Bergen area who responded to a call on Twitter and self-identified as enthusiastic users of the services.

Each focus group lasted for one hour. We opened by asking participants to share a few words about their background, their expertise with the service, and why they use it. This let us contextualise results and helped them get to know one another. We then asked participants to apply the analytical phase of TAPT, as a group, to the service in question.

	Experience	Surface elements	Literal effects	Abstract effects	Distilled experience
<b>Geocaching</b>	Offline treasure hunt based on online map. World wide activity	-low technical qualification -treasure / cache -log -physical as well as digital -share or alone -exploring	-trade -rewards -statistic / profile -logging -first to find -travel bugs travels -muggles / losing caches	-excited -disappointment -theatre / playing -shared -learning -searching -competition -cooperate / community -challenge -secret	GC is a community-run activity about finding secrets, and logging them. It is challenging, exciting and can be disappointing.
<b>Gowalla</b>	Finding spot Writing it Comment Photo Get virtual buttons Getting out device Selecting Gowalla Choosing how broadly to share -> privacy	-palm of hand device -pretty icons -information -geographical closeness -access to passport photos -what friends have checked in here	-link between you and the spot -contributing to the spot -the fact of you linking to the spot -broadcasting the link between you and the spot -zoning out of social -receiving virtual token -learning about other experiences / perspectives	-sharing -self expression -competition -collecting (places) -scavenger challenges -I am – social feeling of being -sense of presence -satisfaction (win, collect, check in, discover) -fun / play -meaninglessness -highlights habits and experiences -connection with others at same place -relief of boredom	Linking you to a spot and broadcasting it. Enjoyment of collecting (buttons) sense of presence and of others. Documenting habits and sharing new experiences.

**Table 1. Teasing Apart Geocaching and Gowalla**

## RESULTS

Table 1 shows a simplified version of the resulting TAPT analyses. The groups generally used different words, but often referred to similar concepts: for example, geocachers talked about ‘logs’ for recording finds, while Gowalla users described ‘passports’ that perform much the same function. Many of the common experiential aspects related to an idea of **community**: trade and rewards; contributing; ‘zoning into’ communities; sharing; learning; competing; and playing. Indeed, Gowalla users talked about ‘zoning out’ of the physical world while simultaneously describing an increased ‘sense of presence’ and ‘connection’ with online communities (“it’s not just zoning out of the social, you’re actually zoning *in* to the social...”). Similarly, geocachers talked at length about the community aspects of geocaching, describing it as ‘community-run’ and discussing the importance of keeping their activities secret from ‘muggles’ (people who do not geocache): “you have to try to pretend that you’re not doing what you’re doing... most of the time people stare at you like you’re an idiot.” In both cases, the groups highlighted the concept of making a mental transition between different spaces: the same physical space can host numerous online communities as well as to the more obvious physical community.

A stark difference emerged around the concept of **being versus doing**. The geocaching group focused on a sense of excitement, disappointment, and ‘theatre’. They used this last word to refer to the secrecy of geocaching and the need to disguise their actions (as they put it, to ‘sneak’) when seeking a cache, to avoid being spotted by ‘muggles’. In contrast to this energetic, focused activity, Gowalla users talked about ‘self expression’ and a ‘feeling of being’. Gowalla involves describing one’s state in the current moment (“Here is an image of the coffee I am with”), and reflecting upon one’s habits – users talked about increased awareness of routines, and even about highlighting the ‘monotony’ of their routines as well as emphasising novel activities when they do occur.

From this, we posit that the main experiential difference between Gowalla and geocaching is a contrast between ‘being’ and ‘doing’. Geocaching is a physically active hunt, in which people feel excited as they ‘sneak’ about, seeking hidden ‘treasures’. Gowalla usage involves sharing one’s current state that would occur regardless of the Gowalla system. Our evidence suggests that locating a geocache is a more explicit goal than ‘checking in’: geocachers set time aside and venture out to find caches, while Gowalla users check into locations at which they find themselves.

## PLAYFULNESS

We can examine these results through the lens of play and playfulness. Korhonen’s Playful Experience (PLEX) framework [7] lists 20 categories of playful experience. Abstract effects identified with TAPT are relevant to these categories, Table 2 shows effects’ fit with the categories.

Abstract effect	System	Category
Challenge	Both	Challenge
Collecting places	Gowalla	Completion, discovery, exploration
Competition	Both	Competition
Connection with others at same place	Gowalla	Fellowship
Cooperate/communicate	Geocaching	Fellowship
Disappointment	Geocaching	Suffering
Excitement	Geocaching	Thrill
Fun / play	Both	Meta observation
Highlights habits and experiences	Gowalla	Exploration, see discussion also
I am – social feeling of being	Gowalla	Expression, fellowship
Learning	Geocaching	Challenge, discovery, exploration
Meaninglessness	Gowalla	See discussion
Relief of boredom	Gowalla	Captivation, expression <sup>3</sup>
Satisfaction (e.g. winning)	Gowalla	Completion, competition
Searching	Geocaching	Captivation, challenge, competition, discovery
Secret	Geocaching	Challenge, fantasy, subversion, thrill
Self expression	Gowalla	Expression
Sense of presence	Gowalla	Expression, fellowship
Shared	Both	Fellowship
Theatre	Geocaching	Challenge, subversion (through acting), thrill

**Table 2. Abstract effects within Korhonen’s categories of play**

‘Meaninglessness’ is difficult to relate to PLEX categories. It arose from Gowalla participants’ difficulty describing their motivations: “I get happy when I get [virtual] objects, I don’t know why.” Similarly, ‘highlighting habits and experiences’ doesn’t easily fit PLEX categories: it primarily concerns reflection.

Table 3 shows the frequency with which abstract effects fell into PLEX categories.

Category	Frequency	
	Geocaching	Gowalla
Captivation	1	1
Challenge	5	1
Competition	2	2
Completion	-	2
Discovery	2	1
Exploration	1	2
Expression	-	4
Fantasy	1	-
Fellowship	2	4
Subversion	2	-
Suffering	1	-
Thrill	3	-

**Table 3. Frequency with which categories appeared**

As can be seen, geocachers’ experiences were strongly grounded in the concept of challenge and thrill, with

<sup>3</sup> ‘Relief of boredom’ was discussed in the context of using Gowalla to check in while queuing: it was perceived as a quick, easy way to both express and relieve boredom.

multiple references to competition, discovery, fellowship and subversion. By contrast, the main focus of Gowalla users was expression and fellowship, with multiple references to competition, completion and exploration.

Using the PLEX framework further substantiates our initial finding: Geocaching is an active challenge and Gowalla use is reflective and unplanned. The process also revealed facets such as Gowalla users' apparent focus on completion.

### METHODOLOGICAL COMMENTS

At the time of the study Gowalla had a tagline: "Thanks for making Gowalla part of the everyday and extraordinary in your life." It is possible that this description influenced the Gowalla users when describing the service, particularly its use for highlighting routines and novel activities.

Recruitment of enthusiasts meant that their opinions were subject to a positive bias. We targeted these groups in order to understand their perceptions of the services.

For practical reasons, the focus groups were relatively small in number, and participants were from the Bergen area. As such, these results should not be generalised. For example, the geocachers self-identified as urban geocachers, and remarked that rural geocachers work differently, travelling longer distances and not engaging in 'theatre'. Similarly, although the Gowalla users were not competitive or goal-oriented, Gowalla includes functionality that could encourage such behaviour via the 'trips' mechanism: it is possible that our Gowalla users happened to be more passive than usual, and that Gowalla users in general are more goal-oriented, like geocachers.

Although the evidence presented here is only based on two focus groups and must be treated as such, it nonetheless provides useful initial insights into this new area.

### CONCLUSIONS AND FUTURE WORK

We have described our use of focus groups with TAPT followed by meta analysis towards better understanding people's experiences of location-based tools, specifically Gowalla and geocaching. This method let us acquire a vocabulary and a way to discern between these services.

The two tools, despite surface differences, share a key underlying concept: a location-based community that is hidden from the eyes of outsiders. The primary difference concerns the concept of 'being' versus 'doing', with Gowalla users passively checking in to locations at which they find themselves and geocachers choosing and pursuing goals.

Korhonen's Playful Experience (PLEX) framework let us verify our main finding and uncover further facets.

We would like to further investigate people's motivations for using tools such as Gowalla. Geocachers confidently described their motivations, but Gowalla users struggled to express why they use the tool: "It's fun but I don't know

why... I don't see a goal." They reported conflicting reasons for checking in: some wanted to leave a mark for passersby, but others only check in for themselves.

Also of interest are insights into differences between superficially similar tools. During this study participants began to yield relevant data, spontaneously discussing differences between Gowalla and Foursquare: it is likely that our method is suited to use in this context.

We have presented a method for understanding user experiences of geosocial services alongside results from two focus group sessions and a meta-analysis of their output. Geosocial services let people express themselves and connect to communities, yet they appear in diverse forms that support very different experiences: as was seen here, geocaching is an active form of play, while Gowalla constitutes a way to playfully express oneself.

**Acknowledgments.** Our thanks to the IET for supporting this work.

### REFERENCES

1. Blumberg, A.J., E. P. (2009). On Locational Privacy, and How to Avoid Losing it Forever | Electronic Frontier Foundation. Electronic Frontier Foundation. Accessed March 2011, <http://www.eff.org/wp/locational-privacy>
2. Farman, J. (2009). Locative Life: Geocaching, Mobile Gaming, and Embodiment. *Leonardo Electronic Almanac*.
3. Gaver, W., Dunne, T., Pascenti, E.: Design: Cultural probes. *Interactions*, 6 (1), 21--29 (1999)
4. Groeneveld, F., Borsboom, B., van Amstel, B. (2010). Over-sharing and Location Awareness. Centre for Democracy and Technology. Accessed March 2011, <http://www.cdt.org/blogs/cdt/over-sharing-and-location-awareness>
5. Hooper, C.J., Millard, D.E.: Teasing Apart and Piecing Together: Towards Understanding Web-based Interactions. *Proc. Web Science* (2010)
6. Isomursu Tahti, M., Vainamo, S., Kuutti, K.: Experimental evaluation of five methods for collecting emotions in field settings with mobile applications. *International Journal of Human-Computer Studies* (65) 404-418 (2007)
7. Korhonen, H., Montola, M., Arrasvuori, J. (2009). Understanding Playful User Experience Through Digital Games. *International Conference on Designing Pleasurable Products and Interfaces* (pp. 274-285).
8. O'Hara, K. (2008). Understanding geocaching practices and motivations. *Proc. CHI Conference on Human factors in computing systems - CHI '08*, 1177. ACM Press. doi: 10.1145/1357054.1357