Locative Life: Geocaching, Mobile Gaming, and Embodiment

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ABSTRACT

This paper analyzes a worldwide GPS treasure hunt game that is played in over 200 countries with game pieces that travel the globe and are tracked online. The game players hide geocache containers in public areas, marking them with GPS coordinates. Players use their mobile devices (from GPS receivers to iPhones) to track down the container, sign the log, and leave tradable and trackable items in the cache. This mobile game offers the perfect example of the blending of material and virtual interfaces, notions of presence and absence, visible and invisible, and utilitarian and playful purposes of everyday objects. Embodied subjectivity in Geocaching is gaining through a correspondence between the user's location gained through GPS coordinates, the finding of a material object hidden in everyday space, and the signing of the logbook in the container. The act of physically signing the logbook as a way to prove embodied "presence" in material space is highly dependent on the screen space of the GPS receiver. Thus, I argue for a cohesive sense of embodment gained through a "proprioceptive-semiotic" convening of bodies, technologies, and socially constructed spaces.

Keywords
Locative Gaming, Geocaching, Mobile Technologies, GPS, Embodiment

INTRODUCTION
On May 1, 2000, the United States government removed the restriction to civilian access to the signals from its Global Positioning System (GPS). Removing this "Selective Access" ushered in an era of locative technology for everyday use. Such technologies have brought to fruition the much-speculated age of ubiquitous computing by moving the user interface away from the personal computer to the space of pervasive computing. Immediately after Selective Access was removed, people began testing the accuracy of their GPS receivers (GPSr), including Dave Ulmer who placed a container in the Portland, Oregon area and logged its coordinates onto a Usenet site. The container was found by users of the site, who logged their visits both in the container's logbook and online. Thus began the GPS treasure hunt game called "geocaching." This locative game serves as a strong example of the way that such games are changing user's relationships to embodied space. From the correspondence between the GPSr and the material landscape to the confirmation of "presence" at the site of the cache gained through a physical signature in the logbook coupled with an online retelling of the find, geocaching utilizes pervasive computing for play in a unique way compared to a variety of locative games. Geocaching blends two distinct genres of locative gaming: augmented landscape gaming (in which data overlays the city) and trace-based gaming (in which the trails or tracks created by the user's movement are utilized as part of the objectives of the game). Movement across the augmented landscape — and the proprioception of the self in relationship to that augmented landscape and technology that creates the mixed reality space — is how gamers are able to successfully locate geocaches and log their visits. This proprioception also convenes with an embodied semiotics users must engage to hide in plain sight through performing a sense of alternate purposes. Users embody false purposes in order to keep their agenda hidden from passersby, thus keeping the cache container hidden from non-gamers (typically called "Muggles"). This mode of embodiment is what I term "proprioceptive-semiotics." Geocaching serves as a key example of proprioceptive-semiotics in locative gaming since users who enter the augmented landscape of GPS data also enter a realm that requires a different mode of embodiment, one that depends on a proprioceptive-semiotic convening of bodies, technology, and material space. In this mixed reality space/augmented reality, embodiment is reliant on the correspondence of all these elements and is utterly dependent on the acknowledgement of presence by technology and the social structures that establish and maintain the space.

Geocaching has grown in popularity as a locative game since its inception in 2000. There are over 850,000 geocaches hidden around the world (including Antarctica) and some regions are so densely populated with caches, that players can find one every 161 meters (the minimum

distance caches can be placed apart from one another). Players can either upload a cache's information (including GPS coordinates, hints, and container type) to their GPSr or simply load the details of nearby caches on their mobile phone through the Geocaching application. Once within reach of the cache, it is often up to the player to discern where the cache might be hidden since the player's location might be inaccurate due to poor satellite connection or by a difference in the GPSrs of the hider and the seekers. As mentioned, the player often must pretend to be occupied with some other purpose as to not draw suspicion to their activities or give the location of the container away to non-players. In February 2008, a geocacher was witnessed on a CCTV camera placing a cache near the Aoeta Center in downtown Auckland. The bomb squad was called in and sections of the city were closed down as they investigated the suspicious container.

Once players find the cache, they sign their player name into the logbook along with the date of the find. This physical signature is a requirement of the game. In order for the find to count toward the player's overall finds, they must prove their presence at the cache with a physical signature. The player can also leave items such as Travel Bugs that move from cache to cache and accumulate distance along with accounts of the item's travels by the gamers who pass the Travel Bug along. There are also usually trinkets left by gamers who can trade one item for another. The last step of the player's experience with a cache is to log the visit online at Geocaching.com. Here, players describe the events of the hunt (often discussing the roles they had to play to not be spotted by non-gamers), the condition of the cache, and the objects left or traded. This multi-step process makes geocaching a game that utilizes the correlation between the material landscape and digital space and depends on the collaboration between these spaces for a sense of embodiment.

THE PRODUCTION OF LOCATIVE GAMING SPACE

Due to locative gaming's reliance on precise coordinates, the use of space is often misunderstood as simply a site enacted upon by an agent. As Henri Lefebvre noted, space is often misconceived as a container that is entered and manipulated rather than that which is co-produced alongside embodiment [3]. Space seems to be preexisting and thus is able to be transformed by the gamer who hides the container. This carries over into many discussions of the relationship between the screen space of the mobile device and the player's experience of the material space they navigate. Christian Licoppe and Yoriko Inada make such a claim when they write, "Tele-presence, augmented reality or virtual reality extend this problem to the juxtaposition of the lived experience of the body 'here and now' with a disembodied experience 'over there'. Living harmoniously in an augmented world means being able to smoothly integrate the embodied lived experience of the body and the mediated perception of oneself and of the environment" [4].

While locative gamers do point toward the constant interplay between these spaces, such statements assume the presence of a preexisting space that is then inhabited or experienced in a disembodied way (e.g. across a network or on the interface of the mobile device). Conversely, this paper points toward the production of locative gaming space in conjunction with bodies that create the space for playful purposes. These spaces, whether digital, material, or a mixed reality space, never function as a disembodied zone. Instead, space itself requires a convening with bodies (and here, with technologies) for its production.

The space of geocaching is a combination of user movement that corresponds to mapping space on the GPSr interface and the digital information that augments this space. Movement through the space and the embodied production of the space is determined by the playful purposes of the game. As Mark Hansen argues, discussing the relationship between movement and the creation of space: "How and why, exactly, can GPS technology re-organize space into another space, into spacing itself? It can do this because it facilitates a virtualization of planes of information, which is equally to say, a passage between time and space, a mutual contamination of time by spacing and of space by duration or delay. […]Put another way, the GPS network restores the originary condition of space, its originary composite with duration, the name of which is movement" [2]. The movement is able to create and define the space. Thus, as a geocacher moves through a space to retrieve a cache, their movement and purpose transforms the space as the space of play.

The first geocache I discovered was hidden inside the Portland Public Library in Portland, Oregon. As I wandered among the shelves of the library, my movement and purposes were not aligned with the structure and design of the building. My movements through the building instead transformed the structure into a game space. As Marc Tuters and Kazys Varnelis write in their article, "Beyond Locative Media," "In adopting the mapping-while-wandering tactics of the dérive, tracing-based locative media suggest that we can re-embody ourselves in the world, thereby escaping the prevailing sense that our experience of place is disappearing in late capitalist society" [5]. The production of locative gaming space relies on this transformation as a key component for the constitution of embodied space.

EMBODIMENT IN LOCATIVE GAMING

Locative media have made the process of navigating material space that is informed by digital space a seamless, day-to-day activity for many mobile technology users. The correspondence between these spaces and our ability to inhabit multiple spaces simultaneously has moved to the sphere of the quotidian. In cities throughout the world where inhabitants are active mobile phone users, navigating the landscape is a simultaneous process of sensorial movement through streets and buildings and an embodied connection to how those places are augmented by digital information on mobile devices. Thus, what constitutes the "interface of everyday life" is the process of navigating the correspondence or disjunction between the physical landscape and the digital landscape. GPS devices in automobiles were some of the first examples of this new form of navigation that depended on the correspondence of material interface (the windshield) and digital interface (the GPS device). The relationship between these interfaces has become so seamless that it has completely altered the way we embody the landscapes we inhabit.

Since space and embodiment are so intimately tied, it is important to interrogate the ways that locative games develop a sense of player embodiment. From the outset, it is key for players to gain proprioception through the GPSr. Knowing where you are in space and how far away from the cache you are serve as the first correspondence between body and mixed reality space. In order to get a clear sense of location, however, the player needs to be in full view of GPS satellites. As the GPSr boots up, it is searching for signals from satellites, attempting to acquire an exact location through the correspondence of four of the 24 GPS satellites. Until this signal is strong, the player remains in a state of detachment from full embodiment: the location on the interface does not match the material landscape and thus the relationship between the player's body, the cache, and the digital data augmenting the landscape remains fragmented.

Since the player is seeking to engage the gaming space as an embodied interactor, he or she is dependent on the cohesive link between the various sites that produce locative gaming space. Until these sites cohere, the player remains unable to embody the gaming space of geocaching. Thus, a key to embodiment in this mixed reality space is being witnessed and acknowledged by the GPS satellites. This machinic gaze establishes locative presence in the gaming space and is confirmed by the interface of the mobile device. Gamers are keenly aware of the embodied gaze by the satellites due to the limitations of the technology: the GPS signal fades or does not function when there are objects (including cloud cover) blocking the view between GPSr and the satellites. This constant awareness of the proprioceptive space between the gamer's mobile device and the gaze of the satellites does much more than simply transform the GPSr into a type of prosthetic; instead, a complete sense of embodiment in locative gaming space is indelibly tied to the technology.

This sense of technological proprioception works in conjunction with the embodied sign systems that players perform. By attempting to make their purposes inconspicuous, players are not only aware of the gaze of the GPS satellite, but also aware of the gaze from the people that surround them. While this engages the "being-for-others" phenomenology that Maurice Merleau-Ponty theorized, it also engages the semiotics of embodied identity performance in public space. As noted in the example of the Auckland bomb scare, people who are perceived to be lurking and displaying suspicious behavior are often categorized as a threat to public safety. Gamers thus need to embody the sign systems of "purposeful movement" through public space in order to conceal their engagement with the space as gamers. This simultaneous phenomenology and embodied sign systems — proprioceptive-semiotics — develops a sense of embodiment that emerges from sensorial experience but also from socio-cultural texts that saturate the locale.

SOCIAL PRESENCE AND ASYNCHRONOUS ENGAGEMENT

One element of geocaching that makes it unique for locative games is the ways that gamers confirm their presence at the specific location of the cache. Within each cache is a logbook that users have to sign when they make the find. An online chronicle of the find subsequently matches this physical imprint. By signing the logbook, gamers are inscribing their presence into the augmented space of locative gaming.

This type of confirmation is distinctly different from other locative games such as *Mogi* or *Can You See Me Now?* in the relationship between embodied presence and social time. While many locative games engage players in simultaneous space-time-movement, in which they can see the other players that are currently playing, where each player is at, and the distance between players, geocaching displaces the component of time by making much of the game about asynchronous documentation of presence. Players cannot chat with each other in real time, they are unaware of each other's locations in real time, and they rarely encounter each other during the process of play.

Though the synchronicity of some locative games might seem to make the confirmation of embodied presence more reliable (since other gamers can pinpoint the exact location of a gamer and engage in dialog with that player, as discussed in detail by Licoppe and Inada's discussion of *Mogi* [4]), the process of signing the self into being in asynchronous time points toward the false assumptions made by real-time locative gaming. Real-time gaming's ability to create dialog between players is often a part of the creation of the affinity space of gaming (whether it be the augmented reality of the urban environment or the gaming space in massively multiplayer online role playing games), but attributing full presence to dialog has been long exposed by the post-structuralist project. The distinction between presence being formed through voice/dialog and absence being signaled by documents/art harkens back to Plato's *Phaedrus*; however, such investment in the idea of embodied presence across media forms has taken on new capital in the age of pervasive computing. Documents, such as voicemail and text messaging, signal the sense of detachment and distance that is not afforded to real-time communication. Thus, since geocaching has very little correspondence with real-time social gaming, it might seem to be less conducive to the creation of an affinity space marked by the confirmation of embodied presence. Interestingly, Jacques Derrida used the signature as an example of full presence (as signaled by absence) through documentation [1]. The inscription of a signature holds much cultural weight in many regions of the world and serves as proof of presence; for Derrida, the signature points to the ways that culture itself is textual, perpetually being inscribed without ever being grounded. For post-structuralists, the false opposition between presence/synchronicity and absence/asynchronicity is exposed by the signifiers such as the signature that mark embodied presence. In mobile phone culture, the creation of textual documents does not necessarily signal distance and absence; instead, these new forms of documentation have become a form of embodying the self in mixed-reality space.

For geocaching, much of the game is centered on the process of creating documents including signing the log and chronicling the find online. These documents become integral to the game and how users achieve a sense of social embodiment in relationship to other geocachers. The correlation between these textual signifiers and the embodied sense of navigating locative space demonstrates the culmination of proprioceptive-semiotics in this game. As all of these elements come together, the gamer is able to embody locative gaming space — a space that traces movement across pervasive computing locales, is augmented by data, and is documented by the signing of a physical logbook and an online retelling of the cache's find. While locative gaming and arts continue to investigate the ways that geolocation alters the sense of spatial and social engagement, we must not overlook the fundamental component of time and cultural capital given to synchronicity. Ultimately, the significance of locative media to gaming and the arts is the way that embodied engagement with mobile devices allows users to function as a hinge between material and digital spaces, presence and absence, and synchronous and asynchronous time. By performing across these oppositions, gamers will be able to expose the ways that these categories never occupy the status of grounded signifiers. Geocaching thus serves as a key demonstration of how locative gaming can fluctuate between these categories, combining them at times, dismantling them at others, in order to create a distinct sense of embodiment in pervasive computing space.

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