A Newly Emerging Ethical Problem in PGIS
Ubiquitous Atoque Absconditus and Casual Offenders for Pleasure

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Abstract: Thanks to the recent technological advances of cellular phones, the practical realization of GeoAPI and SNS, and the consolidation of wireless LAN networks, hardware has become capable of providing portable high-speed Internet access and interactive SNS, and people can now easily communicate far more, casually and unboundedly, via the Internet. Currently, PGIS studies mainly look at the 'sunny side' of GIT progress. Although there are also relevant studies on online ethics, they rely unduly on spontaneously arising equilibrium innervated by mutual surveillance among the people involved. However, it is an over-optimistic and ingenuous perception regarding this exponential technological advance. In this paper, the author illustrates the existence of 'casual offenders for pleasure' by referring to two recent online cyberbullying incidents. Because the appreciation of technology-aided ubiquitous mapping can be very hard to see or to grasp, especially for people not educated and trained to see it, the advances prompt people to nonchalantly lower technical and ethical barriers. Further studies are essential to establish the geographic information ethics and offer a clear-cut answer for this newly emerging problem.

1 INTRODUCTION

On 6 November 2012, a murder occurred in Zushi City, Kanagawa Prefecture, Japan. Although the victim had secretly relocated to an apartment at that time to escape from the criminal's repeated stalking, the 40-year-old criminal somehow found the apartment into which his ex-lover had moved, invaded it, and stabbed her to death before hanging himself. It is commonly called the 'Zushi stalker murder case'.

According to The Japanese Metropolitan Police Department, the numbers of stalkers recognized in 2013 was the highest number, 21,089, of which 15 resulted in incidences, including the Zushi case. Among them, there is a reason why the Zushi incident has been given particular attention. Immediately after the incident, there emerged the suspicion that the criminal had prepared for the crime using a major portal online Q & A bulletin board for more than one year before committing the crime. An anonymous suspect who had uploaded the questions one after another disappeared from the web after the incident, leaving only a series of questions. The remaining writing still vividly conveys how the person gradually obtained the

knowledge related to the incident while keeping the murderer's aim secret, such as: how to figure out an address from a phone number, how to analyse Exif metadata from a photo, how to uncover a locked private account on Facebook, how to request a professional detective search, how to purchase weapons, and how to move to a site in Zushi.

This case symbolically presents an emerging ethics agenda for Geographic Information Science, or GIScience. Although it foretold of the potential threat of the trend in Geospatial Information Technology (GIT), for GIT-aided ubiquitous mapping and cartography (Morita, 2003; Reichenbacher, 2007; Gartner *et al.*, 2007), for the next five years on, little attention was paid to the implication of such a technology-aided incident. In this paper, the author critically summarizes existing debates in relevant fields to clarify what was overlooked and what should be considered.

2 THE RISE OF PGIS AND INTERNET PRIVACY

Since the 1990s, the possibilities of geospatial analysis in conjunction with GIS have dramatically

increased in the context of consolidation of geostatistical data, high precision of GPS, improvement of PC processing capability, and speeding up of LAN access. Geographers gradually became aware of the magnitude of the social impacts of GISystem. GISystem became capable of analysing and outputting even personal level data (Miller, 2007). GIT innovation has increased the necessity of dealing with GIS from an interdisciplinary science perspective, examining the consequential social influence of the innovation as well as the functionality of the system itself. This has become GIScience.

Since the middle of the 2000s, this situation has dramatically changed even further. Thanks to the consolidation of wireless LAN networks, such as Wi-Fi, which was initially established in 2000, hardware became capable of providing portable high-speed Internet access. Moreover, interactive web services such as Mixi, Facebook, Twitter, posting bulletin boards, Flickr, etc. were launched one after another over the course of the decade. As a result, communication between people far more casually and unboundedly via the Internet, or so-called Web 2.0, became a sudden reality. Likewise, in the case of GIT, when map integration technology (GeoAPI) was put into practical use on the web, Google began to provide Street View and Google Earth continuously in 2006-2007. From then on, everyone could freely geo-tag and share photos and texts on the web maps.

One of the most positive aspects stemming from these technological innovations is the rise of the Participatory Geographic Information Systems, PGIS. The evolution has prompted public citizens who were simply receivers of geographic information to become senders, sharers, and communicators of geographic information with use of Social Networking Services (SNS) and online mapping devices (Turner, 2006; Crampton, 2010). Sometimes such grass-roots mappers voluntarily participate in regional policy planning and local governance, called Volunteered geographic information (VGI) (Goodchild, 2007), or bottom-up GIS in Talen's (2000) nomenclature. Moreover, such mappers can utilize GIT in the post-disaster construction and damage repair process by simply digitizing satellite imagery of the afflicted areas on OpenStreetMap to help find ways around severed roads (Norheim-Hagtun and Meier, 2010). Cartographers generally interpret the phenomenon positively, as a people-powered, net-rooted, undisciplined, alternative and Dionysiac way of mapping (Crampton, 2010; Kingsbury and Jones, 2009).

On the other hand, it became apparent that there are potential threats stemming from this advance. boyd and Ellison's (2007) review of studies dealt with online-inherent privacy issues and summarized these as (1) damaged reputation due to rumors and gossip; (2) unwanted contact and harassment or stalking; (3) surveillance-like structures due to backtracking functions; (4) use of personal data by third-parties; and (5) hacking and identity theft (Debatin et al. 2009). Previous studies on SNS privacy issues mainly focused on ethical questions involving the remote monitoring of users conducted by the service provider. Above all, the invasion of privacy and surveillance of geographic space as an exercise of public power are subjects of considerable discussion in GIScience (Armstrong, 2002). Although the discussion about ubiquitous mapping is still limited, some scholars coined the term 'geosurveillance' (Crampton, 2003) to enable critical discussion about the potential risks of privacy infringement through aggregation of users' attributes and location information collected by public authority and SNS providers. Although the development of Information and Communications Technology (ICT) permits people to share geographic information in a friendlier manner, users remain under scrutiny more tightly because of the geosurveillance (Monmonier, 2002). Dobson and Fisher (2003) defined the term 'geoslavery' as 'a practice in which one entity, the master, coercively or surreptitiously monitors and exerts control over the physical location of another individual, the slave' (p. 48). Many scholars metaphorically refer to the 'big brother' motif in George Orwell's famous novel *1984* to describe the power and position of a master (e.g. Klinkenberg, 2007; Propen, 2005), and Bentham's panopticon for the systems and techniques of monitoring (Dobson and Fisher 2007; Koskela, 2002). Although many studies have been extremely conscious of the potential risks of geosurveillance by public powers, their discussions regarding privacy infringement at individual levels lack diversity.

There are many empirical studies on individual offenders and victims via SNS. For instance, Gross and Acquisti (2005), one of the classic empirical studies on SNS profiles, found 89% of users used their real names on their Facebook profiles, and 61% used identifiable information in their posts. Jones and Soltren (2005) found that 62% of student users did not configure any privacy setting despite the fact 74% of them knew about Facebook privacy options.

They also pointed out that 70% of Facebook users posted personal information. In other words, they could not defend their privacy effectively although they cared about its leakage, in what Barnes (2006) termed the 'privacy paradox'. Some other studies found another rationale: that the tendency to inadequately protect one's private information was the consequence of exhibitionistic motives (McGrath, 2004; Ong *et al.*, 2011). These studies demonstrate how potential victims are vulnerable and undefended against anonymous third party offenders on the Internet, but they do not tell much about the offenders. Little has been studied regarding the offenders, except the cyberbullying and cyberstalking studies that mostly focused on adolescent students in a criminological context (Smith *et al.*, 2008; Wolak *et al.*, 2008).

In sum, previous online privacy studies in GIScience can be summarized as emphasizing the risks of privacy infringement by public power or criminological studies through SNS. However, in the Web 2.0 era, the panoptic one-to-many relationship becomes the many-surveilling-the-many situation of what Shilton (2009) described as *little brothers* and Rose-Redwood (2006) termed as *omnopticon*. In such views, the progress of PGIS may encompass the participatory panopticon and total loss of privacy (Whitaker, 1999). Kawaguchi and Kawaguchi (2012) rephrased the omnopticon as 'paradoxical others' to describe the feeling of discomfort upon being disclosed on Google Street View.

Liberally interpreted, these views suggest that an omnoptic mutual surveillance environment restrains and intermediates the people from deviant behaviours as a sort of unseen hand of God. But why do we rule out plausible alternatives?

In this paper, the author brings up two cases for examining the possibilities not yet discussed in the preceding contributions: the existence of casual offenders for pleasure.

Before the Web 2.0 era, most of the people who could create and manage maps were knowledgeable experts who generally had educated and internalized codes of professional ethics. However, in the ubiquitous mapping circumstance, people can participate in mapping behaviour far more casually without being aware that they are in a position of power to create geographic information, without knowledge of cartography or ethics. Thus, the premise that the net-rooted, undisciplined, alternative and Dionysiac people do what experts expect of them no longer applies.

3 CASES OF THE CASUAL OFFENDERS FOR PLEASURE

3.1 Individual Online Peepers

On 20 February 2015, there was a case of murder in Kanagawa prefecture, Japan. The then-13-year-old victim had tried to withdraw from the perpetrators' circle, and was found bound and stabbed to death by the three juvenile criminals. The case received much media coverage because of the atrociousness of the crime that can hardly be attributed to their age.

However, this case became especially memorable not only because of the savagery, but also in the context of the present paper. The then-15-year old podcaster, whose handle name was Noeru (*Noël*), somehow located and found the chief culprit's family's house and webcasted it across the globe. Figure 1 is a screenshot of the delivered movie (now deleted) showing a symbolic composition of a journalist holding out a microphone to a nameless boy as seen from his behind. The figure demonstrates that even a boy goes toe-to-toe with professional media in terms of competence for information transmission. Needless to say, Noeru (and other mappers) could determine a location by simply specifying aggregated place names and utilizing Google Street View to find the same exterior appearance of the home broadcasted by the mass media to detect the exact target location (termed 'dataveillance' by Clarke, 1988). Why would the non-involved boy do this? It is ratiocinative to consider his aspiring to fame and increased advertisement revenue, even if he becomes seen as an online 'weirdo'.

Figure 1: A screenshot of the podcasted movie (http://www.afreecatv.jp/noeru) *now deleted.

3.2 Private Sanctions and Collective Droves

On 15 May 2012 in Hachioji, Tokyo, an elementary school child was on his way home from school. Suddenly, two junior high school students surrounded him, while making a visual recording with a cell phone. The two adolescents found a pretext for quarrelling with the boy, causing him to move backward and whimper in fear. The adolescents then uploaded the movie file on one of the adolescent's YouTube account for kicks (Yomiuri Online, 21 July 2017).

Immediately after the upload, the URL was disseminated on the Internet by SNS, and appeared on the famous online bulletin board *2channel* with fusillade of accusations. An anonymous person promptly created a portal site with using @wiki, a free rental wiki maintained by a limited liability company, Atfreaks (Figure 2). The website served as a 'traffic cop', directing thousands of seekers to the appropriate information. As the sub-domain name */dqntokutei/* eloquently shows, the creator of the domain cared less about right or wrong but rather to *tokutei* (identify) the *dqn* (an argot for 'homeboys') who deserved to be sanctioned.
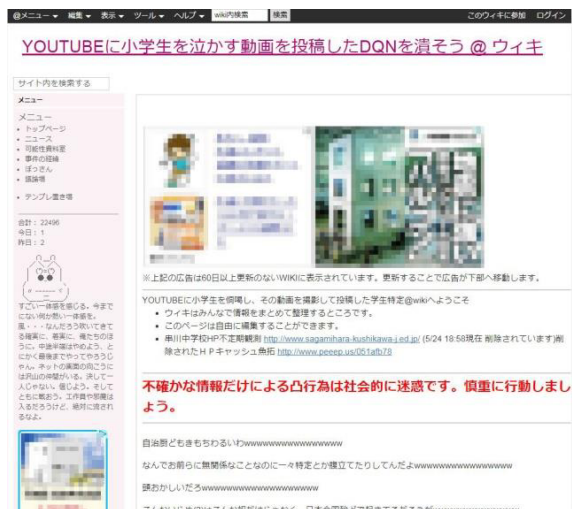

Figure 2: The top page screenshot of the promptly created wiki (https://www34.atwiki.jp/dqntokutei/).

Subsequently, thousands of Internet users (mainly consisting of *2channel* viewers) voluntarily began Googling for information about the captured location, as well as analysing the past uploaded files on the YouTube account. The power of collective intelligence was used to pinpoint the filmed location before long, by scoping out distinctive landmarks captured in the setting and comparing them with images on Google Street View. The school uniform of the perpetrators also revealed the school they attended. Likewise, some of the amateur investigators examined the contents of past uploaded movies and found that the uploaders' faces and their neighbourhoods were visible in some of the files. These online droves dataveillanced all information published online, found two nameless targets, and privately sanctioned through complaint calls to the schools and police stations. Five years on from this initial burst of enthusiasm, the portal site remains on the Internet, exposing the faces and locations of involved individuals to the public gaze.

4 CONCLUDING REMARKS

In 1495 A.D., in medieval Germany, *Ewiger Landfriede* passed by Maximilian I, German king and emperor of the Holy Roman Empire, prohibited Fehde (the duel) as a self-help right to take vengeance. This was the first time in European history when a *Reichskammergericht*, the Supreme Court, was established in a related move (Jackson, 1994). As this event clearly demonstrates, the modern concept of law and justice could not be made possible without consignment of individual rights of vengeance to the public power. Five hundred and a few decades on, an overwhelming innovation in GIT is prompting the resurgence of this pre-modern principle in a way too modernized figure.

The recently realized ubiquitous mapping based on Web 2.0 circumstances is making it an open possibility for people to create and use geographic information anywhere and at any time, and without advanced map-use skills (Gartner *et al.*, 2007). However, as the meaning of the word illustrates, *ubiquitous* stands for being omnipresent, like air, health, and water, all largely taken for granted.

In Latin, an antonym for ubiquitous is *absconditus*, signifying hidden, hard to see or to grasp (Lewis, 1890). Although air is everywhere, its existence is largely overlooked because of its ubiquitous nature. Likewise, in a ubiquitous mapping situation, its presence becomes very hard to see or to grasp, especially for people not educated and trained to 'see' it. As the examples in this study demonstrate, technological advances also enable people to participate by nonchalantly lowering the technical, intelligential, and ethical barriers.

For the time being, PGIS studies mainly take a look at the sunny side of the progress in GIT.

Relevant studies on online ethics place undue reliance on spontaneously arising equilibrium innervated by mutual surveillance among the people involved (Rose-Redwood, 2006; Kawaguchi and Kawaguchi, 2012). However, this view of this exponential technological advance is over-optimistic and ingenuous. GIS is only a device and tool. As the Zushi murder case at the beginning of this article shows, people can utilize the new technologies both in good ways and bad. Further studies are clearly essential to establish geographic information ethics from a collaboration of relevant fields such as information ethics, comparative jurisprudence, geographical education as well as GIScience for offering a clear-cut answer to this newly emerging problem.

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