



Place-based privacy: A humanistic reflection on solitude and anonymity

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ABSTRACT

The need for privacy has long existed before the realization of modern society. Online privacy researchers seem to be surrounded by digital technologies and try creating universal privacy standards and design philosophies to help users stay anonymous. Based on Yi-Fu Tuan's interpretation of humanistic geography, this article extends the concept of place-based privacy following an ethological perspective. A research agenda is presented in the area of geographical knowledge, territory and place, and crowding and privacy by analyzing the relationship between human, privacy, and place. The article concludes by explaining the usefulness of studying place-based privacy.

Privacy is a long-standing philosophical concept before the emergence of ubiquitous computing. My previous probe (Zhang & McKenzie, 2022) categorized privacy into value¹ or cognate-based² definitions. While both categories act as the theoretical foundation for the latter discussion of geoprivacy and location privacy, many examples mentioned in my previous manuscript are only applicable in the contemporary setting. Yi-Fu Tuan's 1976 essay on humanistic geography is an inspiring piece and helped expand my thoughts on the conceptualization of privacy. Recent literature on geoprivacy (e.g., Keßler & McKenzie, 2018) is centred on online privacy. It is logical to anatomize online privacy as our lives have been transformed by pervasive computing. However, our solitude in the physical space seems to be forgotten in the discussion when anonymity became a gold standard of online privacy preservation. In this short article, I take both the physical and the virtual space into consideration and try to untangle the relationship between offline and online privacy from an ethological perspective. I propose the umbrella term "place-based privacy" as both senses of place and privacy concerns are human-dependent. Privacy is a complex concept, and a consensus about its definition is hard to reach (Zhang & McKenzie, 2022). Critical reflections are therefore essential to move this field forward, and sometimes the contemplation involves reviewing what makes us humans.

1. What is place-based privacy?

Geographers are concerned about the unwanted sharing of private location information (Duckham & Kulik, 2006) and have used the terms *geoprivacy* and *location privacy* interchangeably. My previous work (Zhang & McKenzie, 2022) emphasized the potential of place-based (or *patial*) geographic methods (Casey, 1993) in deconstructing the concept of geoprivacy. Indeed, the subjective, qualitative, and emotional aspects of place (Cloke et al., 2013) closely align with the contextual factors that influence people's geoprivacy attitudes. The built-in ambiguity of

¹ a human right (Warren & Brandeis, 1890) or a commodity (Davies, 1997)

² a state of mind or control of private information (Westin, 1968)

place and platial boundaries makes the concept unique but also difficult to quantify (Gao et al., 2013), just like the lack of consensus on what constitutes privacy and various levels of privacy concerns. The need of preserving private location information is where geoprivacy originated during the wave of digital transformation. The discussion is essential and stringent, but its scope is limited to location information. When people (typically non-geographers) do not understand spatial is special, what makes geoprivacy research stand out when there are a plethora of articles analyzing privacy in general? Do geographers have a place in the scientific community to discuss privacy issues of personal data other than geographic coordinates, including content people share on social media?

To expand the field of geoprivacy, I used the term *place-based privacy* in my forthcoming publication (Zhang & McKenzie, in press). Platial information in this case is treated as contextual factors that can influence people's privacy attitudes and behaviours. For example, if people are in sensitive locations (e.g., hospitals), they may become reluctant to share their experiences online. The notion of place contributes to the decision-making process when delineating the (often vague) boundaries of sensitive locations. Compared to other contextual factors³ (e.g., reputation of organizations (Andrade et al., 2002)), platial information has a more dynamic impact and thus makes it more difficult to model. Its key characteristics, namely *location-dependent*, *time-variant*, *culturally situated*, and *people-centred* (Zhang & McKenzie, in press), indicate its more-than-linear influence on people's privacy concerns. One of the goals of studying place-based privacy is to use platial information to achieve user-tailored privacy (Knijnenburg et al., 2022). Personalized privacy settings in this case will be recommended based on users' location, time of the day, country of residence, and prior (internet) experience using machine learning techniques. Another goal of studying place-based privacy covers privacy threats at a collective level (e.g., group profiling; see Suh & Metzger, 2022), which has been overlooked in the related literature. To sum up, instead of concentrating on location-data-related privacy violations, place-based privacy aims to utilize platial information as predictors to answer questions about people's general privacy concerns. The uncertainty (as ambiguous boundaries) and inclusiveness (as converging space) make places a fitting candidate for explaining privacy attitudes and behaviours.

2. Human, privacy, and place

My focus on the cognate-based definition of privacy guided me to incorporate platial information into the discussion of anonymity, and the concept of place led me back to humanistic geography, a field that cares about people and their conditions. Essentially, place-based privacy is a subdiscipline of humanistic geography as both share many similarities. One of the key characteristics of place-based privacy is that it places people at the centre of the discussion. Likewise, according to Tuan (1976), humanistic geography investigates people's attitudes, behaviours, and relations with space and place, in which humans and their actions are the origins of the study. What makes humans different from nonhuman creatures is people's ability for critical reflection. When we think about privacy, it is our desire and contemplation based on related knowledge and prior experience that help us decide whether to disclose personal information or not. The spatial-temporal factor is added in place-based privacy, which brings the discussion full circle in the context of geography.

While Tuan's 1976 elaboration on humanistic geography is classic, its date of publication limits its scope to offline privacy. Following the ethological model presented in Tuan's essay, I attempt to pose research questions about human, privacy, and place in online and offline environments from three perspectives, namely *geographical knowledge*, *territory and place*, and *crowding and*

³ See Miltgen & Peyrat-Guillard (2014) for other examples of contextual factors

privacy. The goal is to identify research gaps and extend place-based privacy based on my analysis and reflection on Tuan's interpretation of humanistic geography.

Geographical knowledge: Geographical understanding of the world is essential for humans to live and survive, whether the age is ancient or modern, or the area is rural or urban. Different groups of people, though, have various levels of articulation when it comes to mental mapping and spatial cognition. Tuan (1976) provided three examples in this regard: the sense of place vs. wayfinding, navigation vs. spatial systems, and spatial hierarchies vs. applied geographies. In each example, the group may be good at one aspect and lack skills in the other. The question for geoprivacy researchers is, does people's geographical knowledge influence their privacy attitudes and behaviours? More specifically, do people who are less sensitive about space and place have fewer privacy concerns at aggregated geographic scale? Or even though some people's levels of privacy concerns are high, their privacy protection behaviours are low due to their limited spatial cognition ability? Regardless of the scenarios, culture plays a role in the process of spatial skill development and remains to be a factor that requires further exploration.

Territory and place: Both the concepts of territory and place are subject to the boundary (or edge) effect. Tuan (1976) used the analogy of songbirds vs. mammals to describe the different senses of territories of different creatures based on their living environments. At a high altitude, songbirds have a broader horizon and a stronger sense of bounded territory, while mammals build a network of (unbounded) routes and places as they travel on the ground. Similarly, farm communities have a relatively static boundary of home, and migratory herders have a more dynamic range of activity. In the modern workplace, a comparable fashion can be observed between work-from-home programmers and long-haul truck drivers. Workplace surveillance, in this case, is associated with distinct ethical concerns that need to be addressed as the border of workplace and home blurs and the location of workplace changes, sometimes in a cross-national setting. People's emotional attachment to place is another factor that impacts their levels of privacy concerns. As Tuan (1976) described, humans pause and stay in time, and the experience during each pause transforms location into place. Combining the lengths of pauses and people's psychological connections with birth and death places, geoprivacy researchers need to explore the relationship between place-based identities and privacy attitudes, especially in the migrant community. The question of where to call home is not always clear to working travellers, and culture remains an influential factor in people's privacy cognition.

Crowding and privacy: Just as our debate of privacy is overemphasized on individual rights, most computational privacy researchers are interested in anonymity preservation. However, what is the purpose of remaining anonymous under certain circumstances? Do we have full privacy when we decline a disclosure request of personal information? Tuan's 1976 elaboration on crowding and privacy suggests a negative answer to the second question. In the context of limited physical distance with other individuals, the desire for privacy becomes the need for solitude because of the physical and psychological stress from the human gaze. Crowded environments create excessive attention from others and trap the possibility of humans developing a sense of self. Therefore, the inclination towards "do not disclose" in the digital world translates to "do not disturb" in the physical space, and the purpose of staying anonymous, to some degree, is chasing a form of seclusion. Everyone needs privacy, which stands for a break from social interactions in this sense, just like athletes who need rest after exercise. The degree and type of this emotional demand vary at the individual but also collective levels as culture mediates people's acceptance level of crowdedness.

3. The significance of place-based privacy study

After analyzing the intertwined relationship between human, privacy, and place, you may ask: why should we, or more specifically, geographers care about the subject if the definition of privacy is cognitive and philosophical? Tuan (1976) recognized the value of humanistic geography in raising awareness in society. Place-based privacy, as a subfield of humanistic geography, contributes to human behavioural modelling from perceptual analysis. The knowledge-attitude-behaviour model has been applied in many areas including environmental studies (e.g., Levin & Strube, 2012). Here, we consider spatial knowledge in addition to privacy knowledge that has been used to analyze people's privacy concerns (e.g., Smit et al., 2014). While humanist geographers work on interpreting the ambiguous, ambivalent, and complex human experience (Tuan, 1976), place-based privacy researchers are also trying to understand the changing perceptions of humans in the privacy paradox⁴. The key characteristics of place-based privacy introduced in Section 1 provide some directions in explaining people's dynamic privacy attitudes. Where to call *home* (according to occupation and identity) also impacts people's level of privacy concerns at different places. Additional critics and reflections on the people-place relationship are necessary to better predict people's privacy behaviours.

This article presents the concept of place-based privacy, its academic origins (geoprivacy and location privacy), and its substantial links to humanistic geography. A series of privacy-related research questions were brought up during the reflection on Tuan's ideas in humanistic geography. From offline to online privacy, it seems researchers have attempted to modernize the field from a historical context. However, at the same time, it is also worth looking back at the forgotten meaning of privacy – solitude – which cannot be replaced by anonymity. Finally, cultural factor was repeatedly mentioned in Tuan's categorization of humanistic geography. Cultural impact on privacy perceptions is also profound, which requires researchers to further identify those hidden social norms behind privacy behaviours.

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⁴ For example, individuals want to experience new technology (e.g., making friends through sharing private information) and avoid unwanted consequences (e.g., targeted advertising).

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