

Spatial Media: A Critical Insight on Geo-surveillance in Social Media

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Abstract

Applications of digital spatial information which are largely confined to Geographic Information Systems (GIS), remote sensing packages and specialised geomatics applications, are no longer a prerogative for the few authoritative professionals but have proliferated to the common man in their day-to-day lives via devices like mobile phones. The integration of location-based technologies into social media platforms has fundamentally reshaped digital communication by embedding spatial data into everyday practices of self-expression. This article critically examines the relationship between geo-surveillance and self-disclosure, focusing on how users voluntarily share location information while simultaneously becoming subjects of pervasive monitoring systems. Drawing on surveillance theory, political economy of communication, and spatial media studies, the paper explores the paradox of voluntary disclosure, the commodification of geospatial data, and the algorithmic production of space. The article concludes that geo-surveillance challenges conventional notions of privacy and agency, requiring a structural understanding of digital power and stronger regulatory frameworks.

Keywords: geosurveillance, locative media, self-disclosure, spatial media, surveillance capitalism.

Introduction

By spatial media, we mean the mediums, or channels, that enable, facilitate, or enhance the ability to interact with, be aware of,

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and create geographic information online. These new spatial and locative technologies include a suite of applications that are explicitly spatial wherein location and mapping are core to their modus operandi. This includes online, interactive mapping tools with accompanying application programming interfaces (APIs) that enable the easy production of map mashups which can be embedded on any web page and push applications beyond desktop GIS (e.g. Google Maps); interactive virtual globes that users can tag and layer data over (e.g. Google Earth); user-generated spatial databases and mapping systems (e.g. OpenStreetMap and WikiMapia); augmented spatial media, locative media (e.g. satnavs and location based social networking; urban dashboards and citizen reporting geo-systems; and geo-design and architectural and planning tools. In other cases, applications enable geo-referencing that produces spatial metadata and can transform the technology into spatial media. For example, social media apps such as Twitter and Facebook enable users to geo-reference tweets/posts, creating a rich set of geo-social data.

These new technologies have been enabled by the rollout of dense, distributed internetworking across a variety of communication channels and protocols, such as Wi-Fi, Bluetooth, Global System for Mobile communication (GSM), Radio-Frequency Identification (RFID), Near-Field Communication (NFC), and the development of enhanced 9-1-1 services. These systems have been extended through ubiquitous computing, new mobile platforms with embedded GPS e.g. smart phones, convergences in media: text, images, maps, audio, video, etc., and advances in computation, machine learning, indexical and machine-readable identification, non-relational databases and cloud storage (Cartwright et al., 1999, 2007; Taylor, 2005; Crampton, 2009; Kitchin, 2014).

Articles on Wikipedia and in online data repositories can be geo-tagged, enabling them to be searched by location and spatially visualised. Search has also become spatialised through the searcher's location. Since 2010, Google has integrated location into all searches either through the internet protocol (IP) address of a computer or the GPS coordinates of a smartphone (Gordon and de Souza e Silva, 2011). Furthermore, maps as branded media are being used to promote institutions and showcase policy and provide a means to

navigate web content. Concurrently, many more non-traditional and administrative datasets are making their way into spatial media via open data portals, which, in turn, are spatialising administrative data.

The proliferation of smartphones and location-aware applications has transformed the relationship between space and communication. Social media platforms increasingly integrate geo-location features such as geo-tagging, check-ins, and live location sharing, making spatial data central to digital interaction. Users routinely share their whereabouts, turning physical locations into communicative resources for identity construction and social engagement.

However, this normalisation of location sharing has also enabled the rise of geo-surveillance, defined as the monitoring and analysis of individuals through their spatial data (Elwood & Leszczynski, 2011). Unlike traditional surveillance models, geo-surveillance is often participatory: users voluntarily disclose their location while remaining embedded in systems that track, store, and commodify this data. Geo-tagging enables users to attach location coordinates to content, creating detailed spatial records. These data points accumulate into behavioural patterns that can be analysed for commercial and surveillance purposes (Thatcher, 2014). Check-ins function as symbolic acts of presence, reinforcing social identity through spatial association. They transform places into communicative markers of lifestyle and belonging. Check-in features enable users to publicly declare their presence at specific locations. These practices reinforce the social significance of place, turning physical spaces into sites of digital interaction. Check-ins also function as markers of identity, signalling: social belonging, cultural capital and lifestyle choices.

Paradox of voluntary surveillance and social incentives

The concept of surveillance has been profoundly shaped by Michel Foucault's notion of the Panopticon, which describes a system of power where individuals internalize monitoring and regulate their own behavior (Foucault, 1977). In this model, surveillance is hierarchical and coercive. However, contemporary digital environments challenge this framework. As Mark Andrejevic (2007) argues, surveillance has evolved into a participatory process where users actively contribute data. Similarly, Zizi Papacharissi (2010) highlights how digital platforms foster "networked selves," where visibility

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becomes a form of social currency. Thus, surveillance in spatial media is no longer imposed solely from above; it is co-produced by users and platforms.

The idea of a "paradox of voluntary surveillance" in spatial media sits at the intersection of media theory, digital culture, and surveillance studies. It describes a condition in which users willingly participate in their own monitoring—often through location-sharing features—while simultaneously expressing concern about privacy and control. The willingness to share location data can also be understood through Erving Goffman's (1959) theory of self-presentation. Social media platforms extend the "front stage" of identity performance into physical space, where location becomes a symbolic resource.

Location revelation among social media users, being at specific places—cafés, events, or travel destinations—contributes to identity construction and social capital. Thus, voluntary surveillance is tied not only to technological systems but also to cultural practices of visibility and recognition. The Dynamics of Voluntary Surveillance are convenience, navigation, ride-hailing, and social connectivity. Sharing location enhances interaction, enabling real-time coordination and presence. Affective rewards: Likes, comments, and visibility create emotional gratification and narratives features like live location sharing are framed as protective measures. These motivations demonstrate that surveillance is often perceived as beneficial rather than intrusive.

While participation appears voluntary, platform design plays a crucial role in shaping user behaviour. Default settings, notifications, and gamified features encourage continuous sharing. This creates what can be termed soft coercion—a condition where users feel they are making free choices, yet their behaviour is subtly guided by interface design and algorithmic nudges (Thaler & Sunstein, 2008). However, there are critical tensions in voluntary surveillance, the illusion of control. Users often believe they control their data through privacy settings. However, policies are complex and difficult to understand. Continuous sharing becomes habitual. Surveillance is embedded into everyday life. Normalisation of surveillance is a happenstance. Repeated engagement with spatial media normalises surveillance practices. Over time, users become desensitised to privacy risks. This normalisation transforms surveillance from an

exception into a cultural norm. Social media platforms reward visibility through likes, comments, and shares. Location sharing exemplifies voluntary surveillance. Users actively participate in their own monitoring by sharing spatial data. This challenges traditional notions of surveillance as coercive, suggesting a model of co-produced surveillance instead. Location-based content often receives higher engagement, incentivising users to disclose their whereabouts, creating behaviour mapping, and exposing vulnerability. This creates a feedback loop: Visibility leads to engagement and further disclosure. This creates an illusion of autonomy while limiting actual control. Data stored indefinitely becomes embodied and territorial.

Despite the paradox, users may not be entirely passive. Platform designs and networks might take up strategic invisibility or the application of disabled GPS. The paradox of voluntary surveillance is not simply a contradiction, it is a structural condition of digital capitalism and networked culture. A case of shift from external surveillance to internalised, pleasurable participation, power operating inherently through desire, convenience, and sociality rather than coercion alone.

Power, control, and data asymmetry in spatial media self-disclosure

Spatial media rely fundamentally on systematic data-gathering and analysis (Green and Smith, 2004; Farman, 2011). Google maps collects users' location data to provide personalised mapping services. It also combines this information with other user data, such as search history and information from Gmail, to customise recommendations and navigation. Users often exchange personal information for efficiency and customised experiences, sometimes without fully understanding the scale of data extraction and profiling involved. Self-tracking through smartphones and wearable devices changes the traditional idea of surveillance. Instead of being passive subjects monitored by governments or corporations, individuals actively participate in monitoring themselves by choosing to use spatial media applications and tracking technologies, a term called "sousveillance" (Mann et al. 2003). These features create what might be called architectures of disclosure, where design nudges users toward sharing more information (Thaler & Sunstein, 2008). Importantly, disclosure

is often framed as socially rewarding-users gain visibility, engagement, and social capital. However, users' choices are influenced and shaped by factors such as financial incentives, information campaigns, software recommendations, and technological systems. From a critical perspective, systems exemplify "surveillance capitalism," where user data becomes an economic resource for targeted advertising and behavioural prediction.

Algorithms personalise information in order to match users' interests or preferences and uses what matches most (Pariser, 2011) in the filtered information landscapes. The personalisation of maps is therefore not neutral; it is shaped by algorithmic decisions based on users' digital traces. This in turn results in the creation of demographically homogenous communities of like-minded people (Graham, 2005). The interconnectedness of data sources situated on multiple geographical scales, and for processing and analysing can come to collaborative filtering producing inherently volatile and dynamic filter bubbles, a Pariser's term, rising to social segregation created by deployed algorithms. This bubbling effect also accentuates homophilous forms of togetherness, which in turn polarises and fragments social space and reinforces social exclusivity and separation (Widmer, 2015) and also the case of data asymmetry. Data asymmetry refers to the unequal distribution of information between users and platforms. While users generate data, platforms possess the analytical tools, algorithms, and infrastructure to extract value from it (Couldry & Mejias, 2019). This asymmetry is central to the political economy of digital platforms. Such asymmetry reinforces platform dominance.

An important aspect: spatial media is not merely data gathering and transfer, but information processing and analysis through software to generate automated responses (Thrift and French, 2012). Spatial media rely on the coding of social life into computer algorithms that automatically perform tasks (Graham, 1998). These codes constitute often-invisible processes of classification and prioritisation, which may affect the life-chances of individuals or social groups in ways that are frequently opaque to the public. This creates control of power. Users are often unaware of the opacity of infrastructure: how their location data is stored, how long it is retained, who has access to it, and how it is monetised. This lack of transparency creates a significant

imbalance. As Pasquale (2015) notes, digital systems operate as "black boxes," where decision-making processes are hidden from users. Despite generating the data, users do not own it. Platforms claim ownership or extensive usage rights through terms of service agreements. This transforms personal experiences into commodities. Spatial data is particularly valuable for targeted advertising, urban planning analytics, and predictive modelling. Thus, self-disclosure becomes a form of unpaid labour contributing to data economies (Terranova, 2000).

Risks and ethical implications

Spatial media, being inherently surveillant in functioning and the practice and technique involved aim at focused, systematic, and routine attention to personal details for purposes of influence, management, protection or direction (Lyon, 2007), are prone to risk and ethical issues. Google maps for instance if it has to provide its users with a map corresponding to their location, it has to gather positioning information from their devices complementing with other data such as user's search history, content of their gmail account etc, in a way to personalise its cartographic service. The very question of surveillance as a part of spatial media ingrained in devices has an ample effect on privacy, social trust, discrimination, accountability and transparency to the risk associated with information sharing. The set of problems revolves around privacy and data-protection issues arising from the commercial and political exploitation of data accumulated by new spatial media.

Self-disclosure in spatial media-platforms that integrate location-based technologies such as GPS, mapping interfaces, and augmented reality (e.g., location sharing on social apps)-raises a complex set of risks and ethical concerns. These issues intersect with surveillance, privacy, autonomy, and power relations in digital environments. Unlike traditional social media, spatial media embeds the user within a geographical and temporal matrix, making disclosure more sensitive and consequential.

Spatial media facilitates what scholars call geo-surveillance-continuous monitoring of individuals through their location data. Even seemingly harmless disclosures (e.g., check-ins or tagged photos) can reveal patterns of daily life. Third parties like corporations,

governments, hackers can aggregate data to infer habits, routines, and identities. This aligns with Panopticism, where individuals internalise surveillance and regulate their own behaviour. One of the most significant risks is the erosion of privacy through geo-surveillance-the monitoring of individuals via location data. Even minimal disclosures can be aggregated to reveal sensitive information about routines, habits, and identities (de Montjoye et al., 2013). Data exploitation and commercialisation are often a part of the digital economy. Companies monetise user location through targeted advertising, behavioural profiling, and predictive analytics. Location data can reinforce social sorting and discrimination.

Companies such as Google and Meta platforms leverage spatial data to refine algorithms and influence user behaviour. Shoshana Zuboff (2019) argues that this practice constitutes surveillance capitalism, where human experience is transformed into behavioural data for profit. Users often unknowingly exchange privacy for convenience, reinforcing data asymmetry between users and corporations. Location data can be used to infer home addresses, workplaces, and frequently visited locations (Golle & Partridge, 2009). There are concerns about physical safety and security Threats from real-time location sharing. Stalking, harassment, and theft can be a matter of concern, especially when they happen. This is particularly concerning for vulnerable and marginalised sections like women, activists, and minors.

Context collapse and misinterpretation of data occur in many cases. A location tag may reveal unintentional affiliations: political, religious, or social. Spatial media collapses multiple social contexts into a single digital space (Marwick & boyd, 2011). A location tag intended for a specific audience may be interpreted differently by unintended viewers.

Spatial disclosures contribute to long-term digital footprints. Even when users delete content, location data may persist in databases, backups, or third-party systems. This permanence challenges the notion of digital ephemerality and complicates the enforcement of the "right to be forgotten" (Mayer-Schönberger, 2009).

Platforms have ethical obligations to ensure data protection, provide clear privacy controls, avoid manipulative design (dark

patterns), and ensure informed consent, transparency, and accountability. However, profit motives often conflict with ethical responsibilities. As a part of Mitigation and Ethical Practice, users limit real-time location sharing, use privacy settings strategically and be mindful of cumulative disclosures. Platforms should adopt privacy-by-design principles, minimise data collection and ensure transparency and accountability. Policymakers should strengthen data protection laws, regulate corporate data practices and promote digital literacy.

Conclusion

Spatial media has fundamentally transformed the relationship between communication, space, and surveillance. Through geo-tagging, location sharing, check-ins, and GPS-enabled applications, users increasingly embed their everyday lives within digital spatial networks. These technologies offer convenience, connectivity, and opportunities for self-expression, but they also create new forms of geo-surveillance that blur the boundaries between voluntary participation and systematic monitoring. Unlike traditional surveillance systems imposed externally, spatial media encourages users to willingly disclose personal and locational information in exchange for visibility, social interaction, and personalised services.

This study demonstrates that self-disclosure in spatial media is deeply connected to issues of power, control, and data asymmetry. While users generate enormous amounts of spatial data, platforms retain ownership and analytical control over this information. Algorithms classify, prioritise, and commodify users' digital traces, transforming personal experiences into economic resources within surveillance capitalism. Consequently, surveillance becomes normalised and embedded into everyday digital practices, often operating invisibly.

Ultimately, geo-surveillance in spatial media reflects a broader transformation of contemporary society where visibility, participation, and control are increasingly intertwined. The challenge lies in balancing technological innovation with ethical responsibility, ensuring that digital connectivity does not come at the cost of personal autonomy and democratic freedom.

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