OpenStreetMap as Space

Dipto Sarkar[1,*] and So Hoi Kay[1]

[1] Department of Geography, National University of Singapore, Singapore; dipto.sarkar@mail.mcgill.ca, e0202937@u.nus.edu

* Author to whom correspondence should be addressed.
This abstract was accepted to the Academic Track of the State of the Map 2019 Conference in Heidelberg after peer-review.

OpenStreetMap (OSM) is arguably the largest repository of crowdsourced geospatial information. However, much of the published literature regarding OSM has remained comfortably within the quantitative boundaries of data-driven inductive research. The interpretation of OSM as a product of contributions, created by a community of contributors, has governed the two major pathways of research. First, research concentrates on the current and changing nature of the OSM contributing community, with insights derived regarding the types of user profiles, motivations of contributors and the frequency of contributions. Second, studying OSM as a database, derives knowledge about the quality and quantity of data, ranging from the inequalities in representations to topological inaccuracies presented in the data.

The dominance of quantitative studies has led to a myopic and restrictive focus on OSM data and users with little discussion on the intertwining of the two. The aim of this research is to offer solutions to potentially address this gap by demonstrating how postmodern concepts from sub-disciplines in Human Geography are prevalent in the OSM landscape. Through this, we demonstrate how a postmodernist approach qualifies OSM as a space of interest to be studied in the field of Human Geography.

The evolution of the OSM landscape over time has demonstrated a manifestation of various postmodern geographical theories, concepts, perspectives and paradigms. Reflecting the transplantation of theories from well-established sub-disciplines of Human Geography, bears testament to OSM's worth as a space of interest to human geographers. The fluid, dynamic and ever-changing nature of OSM adds to the complexities of the landscape and qualifies it as a space to study new trends, emerging theories and re-negotiations of ideas. The aforementioned attributes of the OSM landscape render it suitable to be considered as a microcosm of geographical landscapes. Contrary to positivist approaches, Human Geography places emphasis on the representations, meanings, values, and intentions within spaces.

To demonstrate the credibility of OSM as a space, we exemplify how some concepts of Human Geography can be used in OSM:

1. Actor Network Theory (ANT): ANT calls for the understanding of the constant power negotiations and shifting networks of relationship between human and non-human actors. ANT is useful in studying the roles of different actors in the OSM landscape by drawing focus onto how things are "stitched together" across divisions and

Sarkar and Kay (2019). OpenStreetMap as Space
In: Minghini, M., Grinberger, A.Y., Juhász, L., Yeboah, G., Mooney, P. (Eds.). Proceedings of the Academic Track at the State of the Map 2019, 19-20. Heidelberg, Germany, September 21-23, 2019. Available at https://zenodo.org/communities/sotm-2019
DOI: 10.5281/zenodo.3387699

distinctions, such as the differing intentions, profiles, and levels of authority among the OSM contributors [1].

2. Foucault's theory of discourse and power: In this theory, knowledge is perceived to be embedded within power networks. In OSM, discourse refers to the mapping edits, while the reality is reflected in OSM map. Edits vary according to the intersectionality and power of each user, which shapes OSM data. This should be taken into consideration in the analysis of OSM.
3. Urban Geography: Within urban geography, the postmodernist approach of participatory planning, that emphasizes inclusivity, collaboration, representation and a decentralisation. In the OSM context, it is the right to participation or awarding power to individuals, that needs highlighting, especially considering the barriers faced by certain marginalized groups. Several collaborative approaches in OSM has sought to narrow this gap.
4. Neoliberalization: 'Accumulation by Disposition' elucidates the phenomenon whereby originally public spaces, also professed as democratic and free spaces for public use, are deliberately converted to private spaces through the gradual dominance and uptake of spaces by private entities. In a manner, this phenomenon can potentially unfold in the OSM landscape, whereby a formerly 'public space', or in this case, a 'free-to-access digital space' is experiencing a spike in neoliberal intentions and presence with the increased corporate interest in OSM [2].
5. Gender Geographies: Gender geography brings to light the production and reproduction of inequalities of power and representation between men and women in various spaces [3]. In OSM, analysis has unveiled the similar production of inequalities, in terms of first, the proportion of genders which constitute the mapping community, and secondly, the resultant inequalities observed in the data. Utilization of concepts learnt in gender geography can mitigate issues of gender misrepresentation.

Our overarching aim is to explore the possibility of using OSM in classroom teaching as an instance of a geographic space. OSM is a particularly interesting case study as geography students are familiar with the geospatial data and its map based representation. Further, the crowdsourced nature in which the data is produced brings to the forefront interaction between entities, leading to complex dynamics. We provide some instances of how OSM as space may be of interest to geographers. Concepts of Human Geography manifested in OSM can be used to understand how digital geographies and offline activities are intrinsically interwoven. Thus, introduction to digital geography in classrooms can be through using OSM as a space to demonstrate how our understanding of offline world manifests in online spaces.

References

[1] Budhathoki, N. R., & Haythornthwaite, C. (2013). Motivation for open collaboration: Crowd and community models and the case of OpenStreetMap. *American Behavioral Scientist*, *57*(5), 548-575.

[2] Anderson, J., Sarkar, D., & Palen, L. (2019). Corporate Editors in the Evolving Landscape of OpenStreetMap. *ISPRS International Journal of Geo-Information*, *8*(5), 232.

[2] Stephens, M. (2013). Gender and the GeoWeb: divisions in the production of user-generated cartographic information. *GeoJournal*, *78*(6), 981-996.