Preface – OpenStreetMap studies and Volunteered Geographical Information

This book comes at an apt time to reflect on the growing role of OpenStreetMap (OSM) in Geographical Information Science. This summer, the OpenStreetMap project celebrated ten years of operation, which began on the date of domain name registration. I first heard about the project when it was in its very early stages and, with the support of the Royal Geographical Society, carried out the first research project that focused on OpenStreetMap, with an attempt to develop a mobile data collection tool on an early GPS-enabled phone. As a result, I found myself writing, together with Patrick Weber, what is now the most cited paper on the project (Haklay & Weber 2008). This early exposure to the project provided me with opportunities to watch, with astonishment, how it has become an important source of geographical information, as well as the explosive growth in academic research with and about it.

Of course, in the early years the project was small, with an unclear future and too localised to have a wider impact. It is, therefore, unsurprising that, as far as academic publications indexing reveals, Nelson et al. (2006) 'Towards development of a high quality public domain global roads database' and Taylor and Caquard (2006) 'Cybercartography: Maps and Mapping in the Information Era' are the first peer-reviewed papers that mention OpenStreetMap. Yet, it is interesting that, within two years of establishment, researchers in Canada and the United States heard about it and realised its potential. Moreover, many chapters in the current volume attest to the foresight that these two papers demonstrated.

Since 2006, OpenStreetMap has received plenty of academic attention. As of August 2014, more 'conservative' academic search engines such as ScienceDirect or Scopus find 286 and 236 peer-reviewed papers (respectively) that mention the project. The ACM digital library finds 461 papers in the areas that are relevant to computing and electronics, while Microsoft Academic Research finds only 112. Google Scholar, probably the most expansive of the search engines, lists over 9000 (!). Even with the most conservative version from Microsoft, we can see an impact on fields ranging from social science to engineering and physics. In short, OpenStreetMap has facilitated major contributions to knowledge beyond producing maps.

The link between OpenStreetMap and the concept of Volunteered Geographical Information is also long-standing. Michael Goodchild, in his seminal paper from 2007 that defined Volunteered Geographic Information (VGI), mentioned OpenStreetMap as an example. Since then the literature frequently conflates OSM and VGI. In some recent papers statements such as '*OpenstreetMap is considered as one of the most successful and popular VGI projects*' or '*the most prominent VGI project OpenStreetMap*' are common[i] and, to some degree, the boundary between the two is being blurred. I also admit to be part of the problem – for example, with the title of my 2010 paper 'How good is volunteered geographical information? A comparative study of OpenStreetMap and Ordnance Survey datasets'**.** However, upon reflection on the characteristics of OpenStreetMap and other VGI projects, I became uncomfortable with the equivalence between OSM and VGI. The stance that Neis and Zielstra (2014) offer is, I suggest, more accurate: '*One of the most utilized, analyzed and cited VGI-platforms, with an increasing popularity over the past few years, is OpenStreetMap (OSM).*'

The reason that it is valuable to differentiate between focusing on the OpenStreetMap project (what we can call OSM studies) and the more generic VGI research is partly due to the volume of papers specifically about the project, and what they reveal about the project.

Over the years, several types of research papers that can be classified as OSM studies have emerged.

First, there is a whole set of research projects that use OSM data because it is easy to use and free to access (for example, in computer vision or even string theory). For these projects, OSM is just data to be used (see chapters 6 and 11, which arguably fall into this category).

Second, there are studies about OSM data: quality, the history and evolution of objects in the database, what we can learn about the nature of the data and other aspects. The majority of this volume falls under this category (see chapters 4, 12, 15, 14, 2, 3, 5, 10 and 13).

Third, there are studies that also look at the interactions between patterns of contribution and the data – for example, in trying to infer trustworthiness (see chapter 9).

Fourth, there are studies that look at the wider societal aspects of OpenStreetMap – for example, what the spatial and social implications of data coverage are (see chapter 8).

Finally, there are studies of the social practices in OpenStreetMap as a project (see chapter 7).

In short, there is a significant body of knowledge regarding the nature of the project, the implications of what it produces, and ways to understand the information that emerges from it. Clearly, we now know that OSM produces good data and are aware of the patterns of contribution. What is also clear is that many of these patterns are specific to OSM. Because of the importance of OSM to so many application areas (including illustrative maps in string theory!), these insights are very important. Some of these insights are expected to be also present in other VGI projects but making such analogy needs to be done carefully, and only when there is evidence from other projects that this is the case. In short, we should avoid conflating VGI and OSM – and this volume provides a clear demonstration why this is the case.

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[i] These are deliberately unreferenced so as not to argue that specific authors are to blame