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The Journal of Maps: an electronic journal for the presentation and dissemination of map based data

MIKE J. SMITH

School of Earth Sciences and Geography, Kingston University, Penrhyn Road, Kingston-upon-Thames, Surrey, KT1 2EE, UK; michael.smith@kingston.ac.uk

Abstract

Maps have been central to the research goals of spatial disciplines for over 150 years; to store, analyse and present geographical information. This paper outlines the importance of mapping as a fundamental tool of geographical enquiry yet highlights the subsequent decline in their published form. The Journal of Maps is an attempt to redress the balance and provide an outlet for publication of maps of all types; an antidote to the malaise in map publication. Development of the journal from its initial inception through to the novel approach of the e-only publication model is presented along with details of the operation of the journal and submission procedures.

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1. The Role of Maps

"Geo" based subjects have undergone a variety of challenges and changes over the last century, ranging from qualitative to quantitative and humanist to post-modernist. The one theme linking all geo-subjects together is their spatial element. They deal with space (and time) and are usually described, analysed or modelled in 2 or 3 (and higher) dimensions. This is not to say that geo-subjects deal exclusively in space, but rather that the study of spatial phenomena is often concerned with their location and interaction with other phenomena, as well as their change through time.

The visual presentation of spatial data has long been within the realms of maps and cartography. Ptolemy, the Greek mathematician and geographer, once said of maps that they are *"able to exhibit human understanding... the earth through a portrait"*. This is still as true today as when Greek scholars were defining the art, science and technology of map-making. Maps therefore form a special symbiotic relationship with geo-subjects. Although textual or numeric descriptions of data are commonplace, it is when data are mapped that effective communication of complex spatial representations can occur. For example Tufte (2001) describes the presentational eloquence of Charles Minard's map "Napoleon's March to Moscow". And it is not only at the communication stage that maps are invaluable. As tools of analysis they can direct and help formulate methods of study. The work of John Snow (1936) in using cartography to help understand the spatial relationships during the 1854 cholera outbreak of London is perhaps the most famous use of medical mapping.

2. The Rise and Fall of Maps

Geo-subjects, and mapping in general, saw widespread academic uptake through the expansion of geography and geology in the late 19^{th} and early 20^{th} centuries. During the early years of these subjects, the lack of data was a major stumbling block. Much research was performed expressly with the intent of collecting data, with ancillary goals of interpreting and reporting upon them. The early geological and geographical journals (e.g. Quarterly Journal of the Geological Society) were often concerned with the public presentation of such data so that they could be disseminated widely. Maps

were integral to the collection, analysis and presentation of such data and were therefore published along with the written (or spoken) work. The advent of aerial photography increased the use of maps as investigative tools and saw a boom both nationally and internationally. The analysis of spatial data has been performed in a variety of different subjects so that it is now an integral component in the understanding of a range of different topics, including areas such as biology, business and health. This dramatic expansion in the use and understanding of spatial concepts has also helped in the development and uptake of geographic information systems (GIS).

It is perhaps surprising then that computer based mapping has been one of the major causes in the slow decline of published academic, research-based, maps, particularly during a period where data is prolific and the commercial exploitation of maps is high.

Map-based research is enjoying unparalleled success. GIS provides an elegant (and evolving) interface between the geo-researcher and their data. However there has been a paradigm shift away from the map as a tool for analysis and visualisation, whereby it is simply a spatial data model. Maps are still used as a research tool, but far less emphasis is placed upon visualisation. Another cause of this malaise is the methods used in modern academic inquiry, which are often dictated by research goals and the rapid publication of results. Perhaps what has suffered most is the visualisation of data as part of the overall published and archived results. Today, for example, we could go into a library and view a map of a geological field area drawn over 100 years ago and read the presentation and discussion that this accompanied. This archive is a valuable, permanent, record of that original research. What is so worrying about the general absence of maps in current journals is that, whereas maps may well be produced as part of a research project, there is no preserved archival record. Figure 1 shows the number of fold-out material (including maps, tables and figures) published in the Quarterly Journal of the Geological Society (later the Journal of the Geological Society) in 5-year intervals from 1921 to 2001. What is striking about this figure is the dramatic drop in fold-out material after 1971 (1996 had no fold-out material). Although this is not strictly quantitative (i.e. the paper size and quality changed), it is indicative of the general trend in publishing oversize material.

Academic journals face the task of balancing the costs of maintaining a journal against obtaining subscriptions from libraries wanting to reduce their financial committment to maintaining journal access. The publication

and presentation of results from original research drives much of the current journal process. If there is a squeeze in the costs of production, article length, oversize format pages and colour are the elements that are invariably cut. Unfortunately, maps often fulfil the criteria of large format size and colour so that, if they do not fit on the standard printed page, they will be refused. Whereas the geological literature of early 19^{th} century often saw maps as the primary result from an article, with discussion as a secondary purpose, the reverse is frequently true today. The publication of a map is often not seen as a legitimate research goal in its own right. Maps are sadly an expensive addition to a published article.

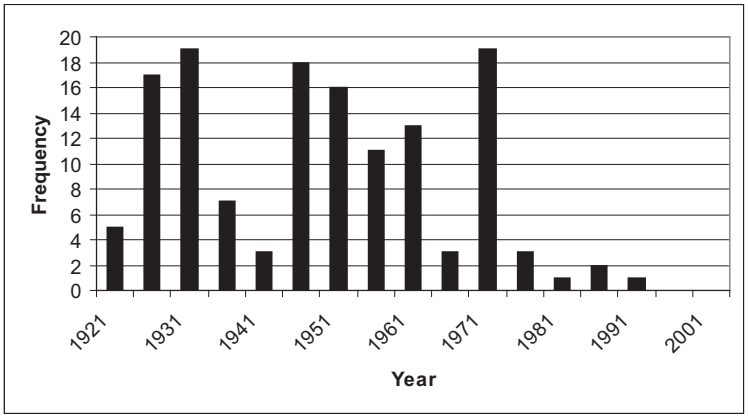

Figure 1 Number of fold-out material published per year (5 year intervals) for the Quarterly Journal of the Geological Society.

3. The Journal of Maps

The impetus for the Journal of Maps (JoM) has come out of the realisation that academic map publication is in gradual decline. This is not to say that maps are not published, but rather the restrictions and costs imposed by journals mean that there is no easy, cost-effective, method for publication.

The idea for JoM has developed out of this need. First and foremost, JoM was envisaged as a charitable organisation who's main aim is the support and publication of original, bespoke, maps from any discipline. A secondary aim is the distribution and archival of maps accepted for publication. JoM

will operate as a registered charity in the United Kingdom and therefore a non-profit making organisation. Maps are very much inter-disciplinary and the journal will place strong emphasis on publishing work from all disciplines. The editorial panel has been specifically put together to provide a broad range of knowledge, expertise and experience. As a journal, we suspect that initial emphasis will be upon traditional geo-subjects such as physical/human geography, geology, surveying and cartography, however other subject areas will be strongly encouraged to submit original work.

Given the financial constraints placed upon traditional publishers in the production of maps, a paper based publishing process was not a viable route. Therefore JoM will be an entirely electronic, online journal. A traditional subscription based model could possibly succeed after the journal is established, however JoM has opted to follow a reverse publishing model (e.g. BioMed Central, 2004). In line with the charitable aims of JoM, all published material will be given away freely from the journal's website . This will provide a fully searchable front-end to JoM's published materials. The author will pay a nominal fee to cover the review and distribution process. We accept that not everyone will want to view maps electronically and therefore downloadable materials will be of press publishable quality and we have established links with large format, ink-jet based, mail order printers.

In order to use the online facilities of JoM, a user needs to register. Basic registration allows access to published materials. Personal details need to be provided in order to submit a map for publication (i.e. to become an author). The principal author will need to supply a press-quality map and article ready for review. The article should be short (1000-2000 words), describing the data presented in the map and any pertinent techniques used during the collection/mapping process. We will not accept long articles incorporating data analysis and interpretation, as these would be better published in traditional subject-based journals. JoM should be seen as a channel to publish map based material not normally accepted by traditional journals that can then be referred to and viewed by other researchers. The principal author should also supply the details of two people who may act as external referees; these persons should not have recently published with the author(s) or work at the same institution. Given the wide ranging subject material that can be received by JoM we do not expect to be able to provide expert knowledge on specific subjects. When submitted, an article will be reviewed by two members of the editorial panel, in addition to the two external referees.

4. Conclusions

Maps are an essential technique for the visualisation, analysis and communication of spatial data (Kraak and Ormeling, 1996; MacEachren, 1995). Many different disciplines now understand the spatial dimension of their data and this "geographic" element is an important factor in their study and understanding. The last century has sadly seen a gradual erosion in the use and presentation of maps in academic journals. This is worrying as we increasingly have material published, whose authors are not permitted to present all of their data. Not only does this stop informed, open, discussion of work, but also prevents the archival of such work for future generations.

The Journal of Maps is a new inter-disciplinary online, electronic, journal that aims to provide a forum for researchers to publish their maps. Using full peer review and a reverse publishing method (where the author pays for the review process), all published maps will be freely distributed to anyone wishing to view them.

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