

**Understanding Cyberspace Cartographies:
A Critical Analysis of Internet Infrastructure
Mapping**

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Declaration

I, Martin Dodge, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Abstract

For thousands of years, people have been creating maps of the world around them as a means of understanding, navigating and controlling space. Cyberspace is the pre-eminent *terra incognita* of the twenty-first century and a wide range of maps and map-like visualisations have been produced to comprehend it. Many different aspects of cyberspace have been mapped, from the physical infrastructure, the data flows and customer statistics, to the emergent patterns of Web hyperlinks and the social structures of online forums. This thesis provides a discussion of the nature of these maps and visualisations, recognising them as complex socio-technical visual images open to multiple connotative interpretation, and imbued with political power and embedded in a wider socio-cultural milieu. The work is situated theoretically within contemporary cultural analyses of cartography, employing a hermeneutic epistemology and a non-progressive categorisation of cyberspace mapmaking practices into distinct, but overlapping and contested modes. The research questions tackled by the thesis are threefold, involving auditing how Internet infrastructures have been mapped, how these maps work semiotically and what is the nature of power they have to do work in the world.

The thesis is an empirically-focused interpretative approach applied to an important mode of cyberspace cartographies: those that map Internet infrastructures. These maps give a fascinating picture of what the Internet looks like, and, significantly, they also provide rich insights into how different interest groups want the Internet to look. The goal of the analysis is to understand both the design connotations of the cartographic signs and the political imaginings of maps of the Internet infrastructure and this proceeds via two detailed case studies. The first case study focuses on the connotative meaning and power of statistical mapping to represent the nature of the globalisation of Internet connectivity. The second case study critiques marketing maps that sell infrastructure access and are intimately bound up in promoting the notion of global network reach.

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