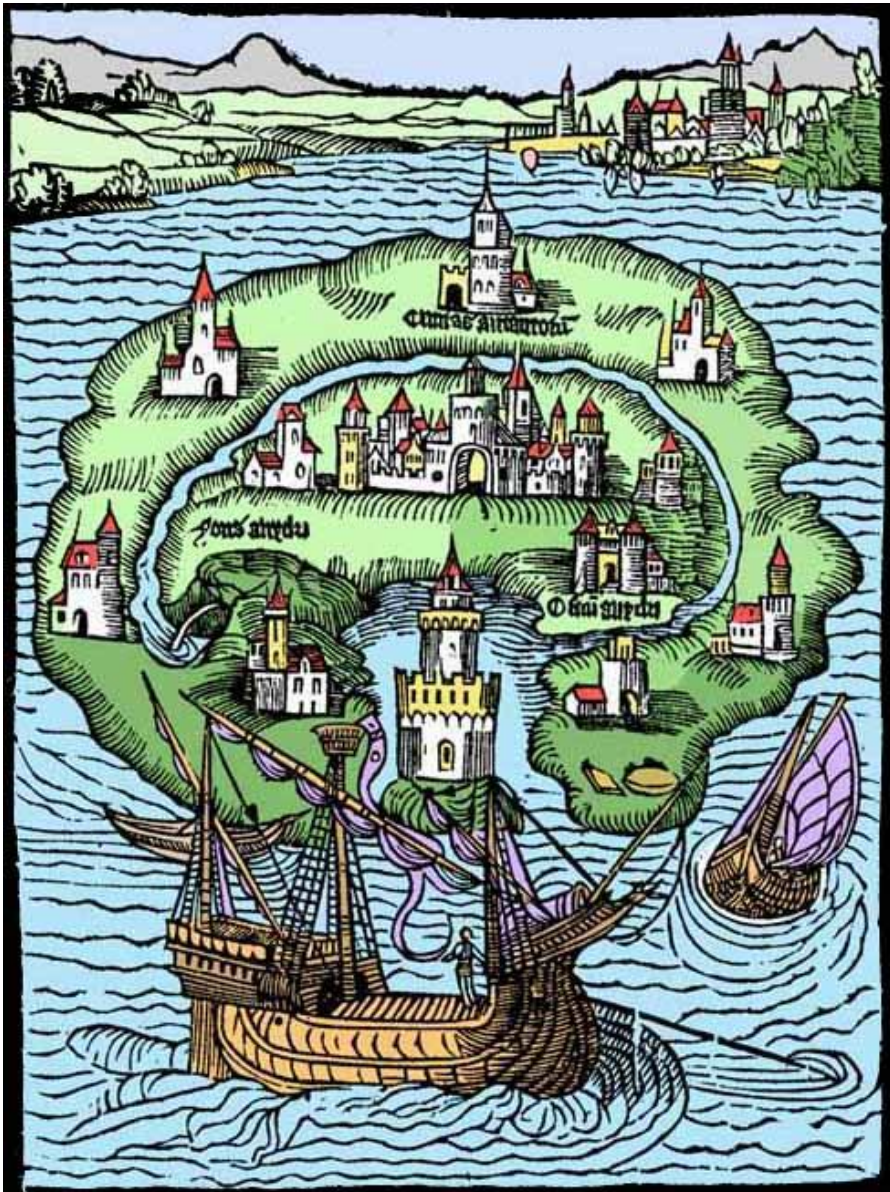


# Part IV

## Representing the Earth Surface



"Utopiae insulae forma"; illustration from Thomas More. 1516. *Utopia*. Chapter 2. De urbibus, ac nominatim de Amauroto.

Maps are often taken as an unproblematic source of information. The process of *how* Earth surfaces and their attributes are represented – through maps or other images – tends to be hidden from view. Similar to other images, however, maps assume particular perspectives, often represent certain world views and ideologies, and can affect how we think about and interpret the world (see Harley, 1989; Sparke, 1998; Wood, 1992). In addition, some perspectives and world views seem to be privileged over others. And so, as in the case of advertising or landscape paintings, what is included in maps and what sort of information is omitted from spatial representation must be subjected to critical geographical analysis, especially when these maps and spatial representations express authority, such as the material published in atlases. The chapters in Part IV address these concerns (see also the collection in Harris and Harrower, 2005).

As Yves Lacoste stresses in the first chapter of Part IV, and as Jeremy Crampton later illustrates indirectly, map-making is part of state power. Geographical knowledge can be put to destructive ends for instance, in creating maps that improve governments' capacity for waging war. This reality contrasts the claims of objectivity in spatial analysis and scientific detachment often made in cartography. Resistance to such untenable propositions has gained momentum in the 1980s (Crampton and Krygier, 2005). As the chapters by Crampton and Edney convey, historical approaches to cartography have been major contributions to introducing and refining critical perspectives on map interpretation and map-making.

Nevertheless, claims of objectivity and detachment persist and since the 1970s have become even more insidious with the computerisation of data handling, analysis, and presentation. Technological complexity and the cost of GIS<sup>1</sup> have distracted many cartographers and spatial analysts from critically scrutinizing the social, cultural and political biases that shape the final products of their work. John Pickles' chapter represents an early critical investigation of the truth claims of GIS users and the theoretical and social repercussions of using GIS. This critical perspective of GIS generated a heated debate within geography during the 1990s. Nadine Schuurman's chapter traces the history and context of this debate (see also Schuurman, 2004).

The chapters of Part IV indicate that the products and methods of cartography and spatial analysis should not be assumed to correspond to reality. Rather, these products and methods must be subjected to critical assessment and practice. One way to reduce the potential for human suffering and reinforcement of social injustices through the use of GIS is to make the use of cartography and spatial analysis transparent, widely accessible and democratic. Contemporary critical cartographers

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<sup>1</sup> GIS can mean "Geographic Information System", referring to an assemblage of materials (e.g., computers, software) and methods (e.g., spatial statistics, overlay techniques) related to data input, processing, analysis, and final mapping output. In the 1990s, some geographers began referring to GIS as "Geographic Information Science" to highlight its systematic knowledge-producing nature.

and GIS practitioners are now providing many examples of how to use map-making and spatial analysis in ways that enable social justice (e.g., Dunn, 2007; Harris et al., 1995; Kwan, 2002; Kyem, 2001; St. Martin, 2001). As in other forms of critical geography, this is being achieved through the recognition of subjectivity, self-reflexivity and the awareness of social and political context.

## References

- Crampton and Krygier. 2005. [An introduction to critical cartography](#). *ACME* 4(1), 11-33.
- Dunn, Christine. 2007. Participatory GIS: A people's GIS? *Progress in Human Geography* 31(5), 616-37.
- Harley, J. Brian. 1989. Deconstructing the map. *Cartographica* 26(2), 1-20.
- Harris, Leila and Mark Harrower (eds.) 2005. [Special Issue: Critical Cartographies](#). *ACME* 4(1), 1-171.
- Harris, Trevor M., Daniel Weiner, Timothy Warner and Richard Levin. 1995. Pursuing social goals through participatory GIS: Redressing South Africa's historical political ecology. In, John Pickles (ed.), *Ground Truth. The Social Implications of Geographic Information Systems*. New York: The Guilford Press, pp. 196-222.
- Kwan, Mei-Po. 2002. 'Feminist Visualization': Re-envision GIS as a method in feminist geographic research. *Annals of the Association of American Geographers* 92(4), 645-61.
- Kyem, Peter A. Kwaku. 2001. Power, participation, and inflexible institutions: An examination of the challenges to community empowerment in participatory GIS applications. *Cartographica* 38(3/4), 5-17.
- Schuurman, Nadine. 2004. *GIS. A Short Introduction*. Oxford: Blackwell.
- Sparke, Matthew. 1998. A map that roared and an original atlas: Canada, cartography, and the narration of nation. *Annals of the Association of American Geographers* 88(3), 463-95.
- St. Martin, Kevin. 2001. Making space for community resource management in Fisheries. *The Annals of the Association of American Geographers* 91(1), 122-42.
- Wood, D. 1992. *The Power of Maps*. New York: Guilford.