

The Impulse to Map and the Nature of the Human Cognitive System

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Abstract:

A multi-year, international collaboration has examined the nature of maps and cartography. Among the questions examined is why maps have been developed by human societies throughout recorded history (and possibly before); what the advantages of maps are over other human inventions for many human interests; what determines the value of a map when it is used by humans; what links the physical map artefacts and the internal human behaviours that are prompted by exposure to maps. The underlying aim of this investigation is addressing the evident success of maps, and the focus has been on the pragmatic question, why is a map effective and persuasive?

In our first joint effort (Fairbairn, et. al 2021), we addressed the role and efficacy of successive paradigms applied to the study of cartography as a discipline. We took a somewhat different approach in this attempt by confirming a universal epistemology of cartography, by more pragmatically identifying some elements of human behaviour, human engagement with the map, and map possibilities which could *enhance* the paradigm of cartography. In the process, we defined the map as a *perceivable, designed, enabling, interface that represents and communicates spatial entities and relations*.

Extensions to models of cartographic communication are considered in our second paper (Fairbairn, et. al 2023), that addressed the functions and use of maps, speculated on the value that maps bring to human activity, and proposed additional factors integral to the success of maps. We initially considered the value (not explicitly addressed in the initial cartographic communication paradigm) of the affordances of maps – ‘action possibilities’ – which pervade the entire cartographic endeavour. Associated with affordances, we moved next to address the nature, possibilities, and limitations of the media through which maps are engaged. Following this, we attempt to understand the strengths and weaknesses of human perceptual and cognitive abilities when engaged with mapping and maps. Finally, we considered the pragmatics of the human-map interaction and considered the overall role of ‘context’ as a central driver in the mapping process. ‘Context’ covers an extraordinarily wide range of factors, issues, ideas and processes which go to make up the milieu within which mapping is undertaken and maps are engaged with.

Ongoing work focusses on the inherent human impulse to map; the nature of the cognitive system which impacts on the nature of maps produced by human beings; the way in which artefacts sourced in human cognition and creativity are presented; the actualization of maps as externalizations of the cognitive system; and then the prime example of externalization – the ‘sketch map’. Engaging in activities such as map making, reading, and spatial navigation likely led to significant cognitive developments. The major advantage of maps is that they increased the level of internal spatial cognition in humans; they exercised and expanded the brain. We close by addressing the ‘internalization’ of maps in the human cognitive system – notably the way in which maps influence human spatial knowledge and behaviour, concluding with thoughts about the indispensability of maps.

References

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