

Bertin's map reading theory: an enlightening tool for "clearing up" concepts and analysis of old maps content

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Abstract:

The "reading" of an old map is the basic source of misunderstandings, disorientations and other difficulties, appearing in cartographic communities, among two groups: those coming from mapping sciences and technologies, here "us", and those coming from humanities, arts, social sciences and affine fields of knowledge, here the "others". This is well evident, when these groups come in contact, bringing their own map readings into a common floor of discussion, which in most cases leads to deviating paths if not to contradictions or indifference of one group for the other.

The often-given explanation about the map-reading diversity between "us" and the "others" is their traditionally different educational origin and cultural formation. The previous generation was educated upon a long tradition rooted mainly in the industrial revolution up to the eighties of twentieth century, but this is rapidly reversing since then with Digital Humanities (DH) as a promising signal but also a risk to turn into high fashion. This risk may become inevitable if DH are developed through unaltered educational systems with fields of knowledge sustaining a traditional relation to maps (their heritage, current stand and hypothetical future). The need for profound changes in education to accommodate properly and efficiently DH (with their cartographic perspectives) demands "wise decisions" to overturn the traditional diversities between "us" and the "others" (but now also between "us" and "us").

An easier alternative could be an urgent recall to safeguard the literacy of map reading still missing mainly in the "others", but it is also being rapidly blurred, even neglected, in "us", due to many reasons related to our modern times. Among them is worth mentioning the shortening of time for regular education, encouraging self-formation and self-improvement and the growing empiricism in the utilitarian view of maps in sectors where the concern of the literacy of map reading is taken as a "waste of time".

The literacy of map reading owes a lot to the pioneering work of Jacques Bertin (1918-2010), based on his gained expertise in cartography and geography widely being considered as providing the theoretical foundation to "information visualization", from which derives the famous term "Sémiologie graphique" (Bertin, 1967). These two words are coming from homonymous Greek words meaning literally the "words", "speech" and "study" for logos (-logie), the "sign" and "point" for semeio (sémio-) and the "writing" and "drawing" for grafein (graphique), the latter word meaning in ancient Greek both the text writing and the map drawing (Dilke, 1998). Bertin's multipurpose theory, well founded in practice, allows the use and developing of a lot of issues exposed and treated in Bertin's work, from the sophistication of his concepts and contexts leading to philosophical paths about the visual foundation of information, up to the simple and easy application of rules supporting in practice the literacy of map reading. Of special concern are those rules offering common grounds for making the maps' content easily understandable to both "us" and the "others". Using Bertin's methodologies, the properly deciphering of complicated old maps' contents could assist the communicability and understanding of the arguments and the points of view of both sides.

In doing so, a major tool offered by Bertin is the introduction of map recognition and map readability concepts. If the map recognition is successfully done, the map readability is facilitating, giving the same criteria to the map-readers for advancing the processes. The key here is the separation of two sets of elements related to the duality of any map's content into the geometric and the thematic part of the cartographic representation. The geometric part refers to the geometric features of the map e.g. the coastline, points and locations, the linear and surface features, as well as the map's projection and scale. The thematic content consists of e.g., the toponymy, the non-geometric symbolism and any other visual information belonging to the physical and human worlds. All these elements of both sets can be "recognised", according to Bertin's theory, "externally" and "internally" and the process involves the external and the internal recognition of the map, which is related to readability. The external recognition is basically related with the visible elements of the map content, geometric and/or thematic; it is the easier part in the recognition of the map content. On the other hand, the internal recognition refers to the "hidden" elements not visible at first sight. They need special elaboration and knowledge to identify e.g., the point and relational accuracy of the map, the type and degree of generalisation (structural and

conceptual) and the hard-core issues of the “information visualisation” related with map-communicability, theory of colours and visual perception.

All these issues inherent in Bertin’s theory, properly structured in a simple and easily understandable didactic way, could be extremely helpful in the process of introducing the literacy of map for both “us” and the “others”. Long practice has shown that simplified implementation of Bertin’s teaching helped a lot to decompose issues of old maps interesting for both groups as well. In this paper, the recognition and readability of old maps, which were unveiled lately in the frame of our research project, assisted to the proper documentation of the maps, the classification of their content and the evaluation of their quality and importance.

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