
Arctic Cartographic Uncertainties, a cARTographic Atlas in progress...

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Keywords: Atlas, Speculative Art, Creative Methodologies, Arctic, Non-representational theory

Abstract:

Maps, by nature, do not speak the truth. Representing selective, aggregated, simplified information and translating natural elements into symbols, maps carry uncertainties on numerous levels (Bertin, 1983; Robinson, 1995; Monmonier, 2006). In this research, the case study is the Arctic, a region characterised by complex ecosystems, tough environments, and faster climatic changes than the rest of the world.

Uncertainty is described as a privative term formed due to the lack of something else, in this case, certainty. Often uncertainty is confused with ignorance, which, as a privative term as well, is defined as the lack of knowledge. However, uncertainty can spring from more origins, such as complexity, temporality, perspectives, and even incomplete knowledges. Geographical knowledge can be uncertain not only in the linear relationships of its “knowns”: (1) known knowns, (2) unknown knowns, (3) known unknowns and (4) unknown unknowns (Kerwin, 1993) but also in the additional element of how we came to know (Brown, 2004; Fusco, 2017). Even though scientific knowledge used to be equal to certain knowledge (Councelis, 2003; Fusco, 2017); now uncertainty is present, sometimes expected, and in cases, an essential element of the “truth” and may reflect ignorance, complexity, low confidence, and insecurity.

In cartography, uncertainty had been apparent from the medieval and renaissance maps in the forms of mythical beasts, faded coastlines and imaginary lands (Woodward, 2007). In those cases, uncertainty visualised the unknown, both with heroism and fear. In contemporary mapping, uncertainty is dealt with mainly in natural phenomena in their spatial and temporal aspects. It is visualised via transparency and fuzziness effects (MacEachren, 1992; Retchless & Brewer, 2016), where the information is fading, starting from the most certain location and/or time, towards the least certain areas.

Inspired by Rowe (1994), I classify uncertainties into (a) temporal –*due to past and future uncertainties* -, (b) structural –*due to complexity*-, (c) metrical –*due to data quality*-, and (d) communicational –*due to culture, perspectives and previous knowledges of both the audience and the communicator*-. This atlas tries to bring Arctic Cartographic Uncertainties into the spotlight using methods deriving from speculative art, non-representational theory, and creative methodologies in geography.

Opposing the traditional certainty of an “Atlas”, I will be highlighting the presence of uncertainty when dealing with similar data that have been obscured or ignored intentionally or not in Arctic cartography. In addition, I will be keeping the sense of “Atlas” as a map composition of a specific area or topic, aiming to highlight uncertainties present in various map-making process levels, from the data collection to analysis, visualisation and communication. These maps will be creations of the final level of map-making, after working with environmental phenomena (such as: sea ice concentration, vegetation, snow coverage, soil moisture, etc) on a pan-Arctic scale derived by remote sensing processed data. Choosing a non-digital outcome, I will be engaging art, innovative and creative practices. To overcome obstacles such as spatiotemporality and complexity visualisation, the maps will be created from a broad selection of materials (such as clay, fabric, wood, paper, etc.), and art production techniques (such as painting, carving, collage, quilting, sculpturing, etc.). The relationship of the Atlas with the materiality aims to practice the creative liberation of the researcher and the affection towards the audience. Highlighting uncertainties and not hiding them “under the carpet” can provide a better and more in-depth understanding of the studied phenomena, better decision-making, and less risk-taking in some instances.

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