

Trustworthiness of maps in digital media

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Abstract: *Maps in digital media have issues regarding trustworthiness due to a lack of mapmakers' expertise and the absence of established ethical principles. The objective is to study the trust-building process and how to make maps more trustworthy.*

Open-source data and free software allow anyone to make maps fast and with little expertise. We can find various maps illustrating the messages in the digital media, such as government reports, news and personal blogs. A user might not be confident if the mapmaker verified the data on the map or even purposely distorted it. Then a problem arises: maps could be misleading and harmful, especially in a virtual environment.

Even in governmental and official sources, mapmakers might not realize some communication pitfalls. Griffin (2020) observed the COVID-19 maps, among which were the official maps, and their trustworthiness. She found that no map “explicitly represented uncertainty” (p. 13) and, therefore, they were misleading. In media, journalists have competencies in verifying facts in the text, photographs and video. The trust in journalism is related to the delegated selection, which society gives to the journalists, so the last can process the information and give it back in the perceivable form (Otto and Köhler, 2018). The audience's task is to distinguish the verified and unverified information. However, when it comes to maps, the verification might be complicated. Fafinski (2022) argues that representing areas of the Russian invasion as “zones of control” on maps in media refers to colonial thinking and helps the invaders normalize their perspective on the war. Robinson (2019) demonstrated how maps achieve a viral effect on social media but doubted their trustworthiness. He described the potential research questions, among which is the question of the trustworthiness of such maps. He stated the problem of the fake maps, which can circulate on social media.

The cartographer's individual choices in the map design are always subjective, and there are no explicit guidelines for a “good map”. Although the map could seem objective, there might be some sensitive undertones. In *The Correspondent's* article, Vermeulen et al. (2020) show how the manipulative map style of the migration map works to evoke a negative attitude toward migrants among Europeans. Mapmakers have the power to persuade people, and they can use this power to communicate harmful ideas. Muehlenhaus (2014) distinguishes sensationalist, understated, propagandist and authoritative styles of persuasive maps. The author warns that people without proper education tend to trust such maps, and they become viral.

There are suggestions on how to make maps trustworthy for people. From the information visualization perspective, Mayr et al. (2019) synthesized the information visualization's trustworthiness factors from the visualization and the user perspective and proposed the research questions in this field. The authors propose to conduct empirical studies on the relationships between trust and uncertainty visualization and the user's prior knowledge factor. Authors emphasize the need to develop visual trust indicators and “establish standards for more trustworthy visualizations” (p. 4). From the critical cartography perspective, Kent (2017) suggested that cartographers must be critical of their work and reveal the map production process to the audience in the post-truth era. He proposes that cartographers establish the discipline's ethical principles to preserve it.

Thus, to study the topic of maps' trustworthiness in digital media, the research is going to answer the questions about 1) the general level of trust in maps in digital media compared to other information

visualization forms; 2) defining the criteria of maps people trust; 3) what maps different social groups find trustworthy, and, finally, 4) how to make trustworthy maps.

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