

# Towards strategies for ensuring trustworthiness in cartography

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## Abstract:

In this paper the context of trust and maps is selectively analyzed. With the advent of more and more maps being produced a discussion on “fake news”, “fake media” and “fake maps” is rising, thus in which way we can distinguish “fake” from “trustworthy” maps.

Therefore, in this paper a proposal is presented, on how cartographers can allow for ensuring and/or enhancing the trustworthiness of maps. This is done by introducing two concepts of “going deep”, thus allowing for transparency of cartographic decisions and “going wide”, which allows for contextualizing a given map by being able to access alternative maps of the same topic.

In respect to “going deep” a verification by transparency is aimed at. Every map object and literally “every pixel” has gone through many decisions which it is based upon. Those decisions have determined the appearance, the position, the design and the look of every single element of a map, but are often unknown, in-transparent or not explained at all to users (Fairbairn et al. 2021). To allow users to look “behind” the pixel would basically allow to make underpinning decisions transparent, chosen options visible and eventual alternative paths available. However, as discussed, those decisions can have many options and can include subjective elements. Challenges for cartography exist therefore in respect to how to visualize / communicate what is “behind the map” in a manner, that it can be easily followed and understood. The method of reverse engineering can be applied as method to describe and define underpinning decisions of map production but may need to be accompanied by a comprehensive cartographic ontology. Once cartographic decisions can be noted and are described they can be communicated to users in order to allow them to judge the decision-making process themselves.

The “going broad” concept aims for verification by contextualization. Humans tend to try to find additional or alternative information sources, if they are suspicious or unsure about a particular communication means. Applying this principle in cartography would mean, that we allow or even offer map users proactively further and or alternative map presentations, visualization or information sources. By being exposed to several data representations of a given context, the value of the original map can be judged more easily, the “power of comparison” can be used. But which further maps, other representations are really related, depicting the same or somehow related data and aspects and can therefore help to compare? In order to allow for selecting related maps and presentations the comparison of their meta data is key.

The underpinning agenda is based on the context, that the increasing digitization of map production leads to increased risk for misuse and spread of fake maps, which may lead to an undesirable negative impact on trust in maps in society. It might be useful to consider therefore to add to existing attempts on contributing an ethical framework for map making, such as the Locus Charter or the Code of Ethics of the British Cartographic Society (2020).

## References

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