# Space as a Metaphor

## Design Guidelines and Evaluation of Map Imitation

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**Map imitation is a type of data visualization resembling a map in which indivudal data items are placed on non-geospatial coordinates [1]. Historically, map imitations have been used to represent marriage [2] and to analyze links between documents [3]. In 2003, Hermann and Leuthold published an atlas of map imitations [4] representing 'political landscapes'. This thesis presents a map imitation inspired by their work and analyzes user perception and understanding.**

## Motivations

Several motivations led to this research.

1. Producing a comprehensive procedure on how to make a map imitation
2. Testing how people perceive and understand it
3. Determining the industry requirements that dictate the creation of a data visualization
4. Giving visibility to the climate crisis and the inequalities it engenders

## Design Workflow

The map imitation (Fig. 1) is created through a three-step workflow. Firstly, preliminary considerations are made about the subject and the datasets. Secondly, the data is processed to produce the main layers. Thirdly, using a graphic software, these layers are designed to resemble a map, and surrounding elements are added. Alongside this, when working in an industry setting, political and graphic design constraints must be taken into account.

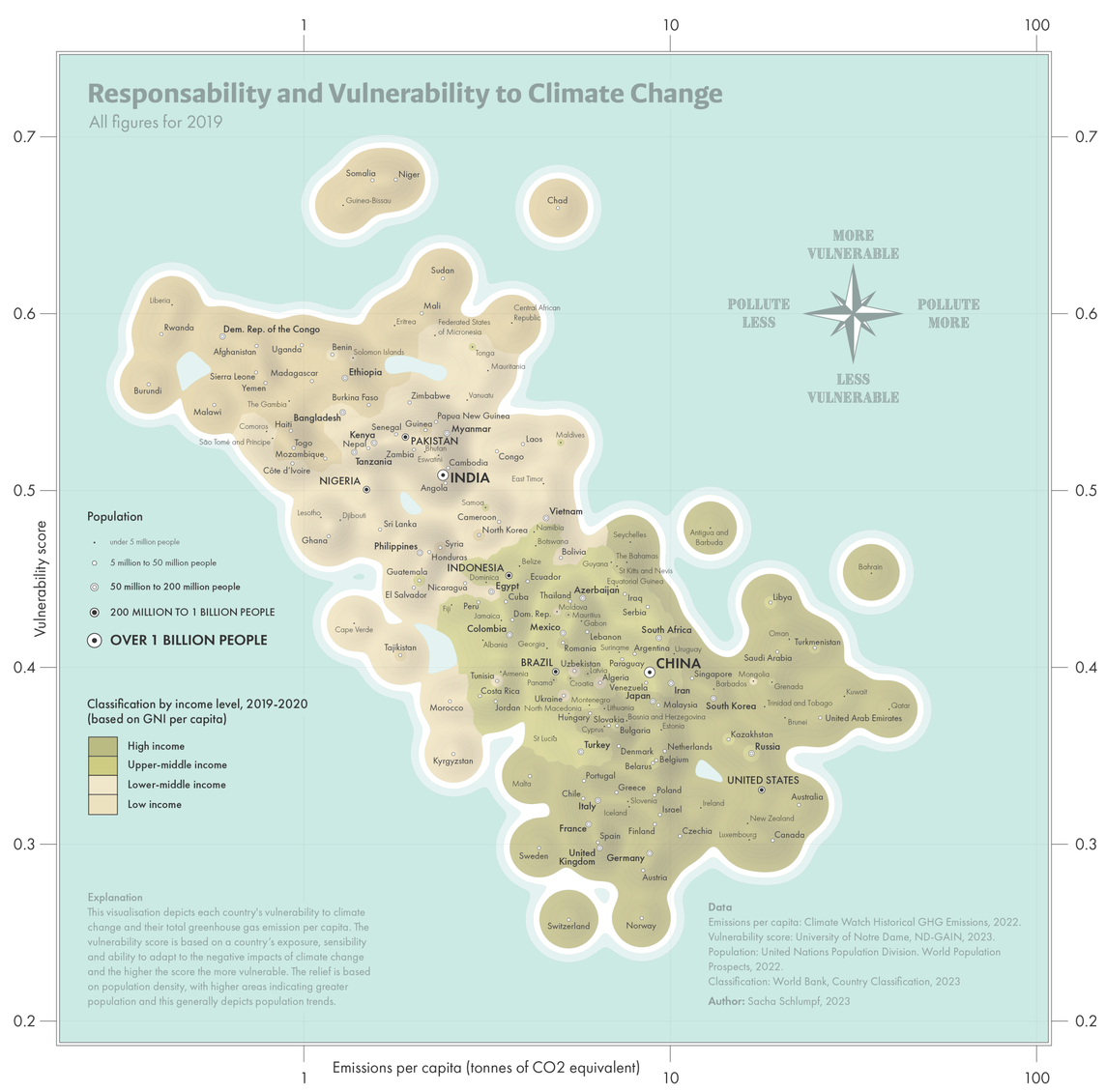


*Figure 1 – Proposed map imitation*

## Evaluation

Two online surveys were conducted with the same questions. One included the proposed map imitation (Fig. 1), while the other one included a graph version, where all cartographic elements were removed. Comparing the results allowed to analze the influence of the cartographic design on user performance.

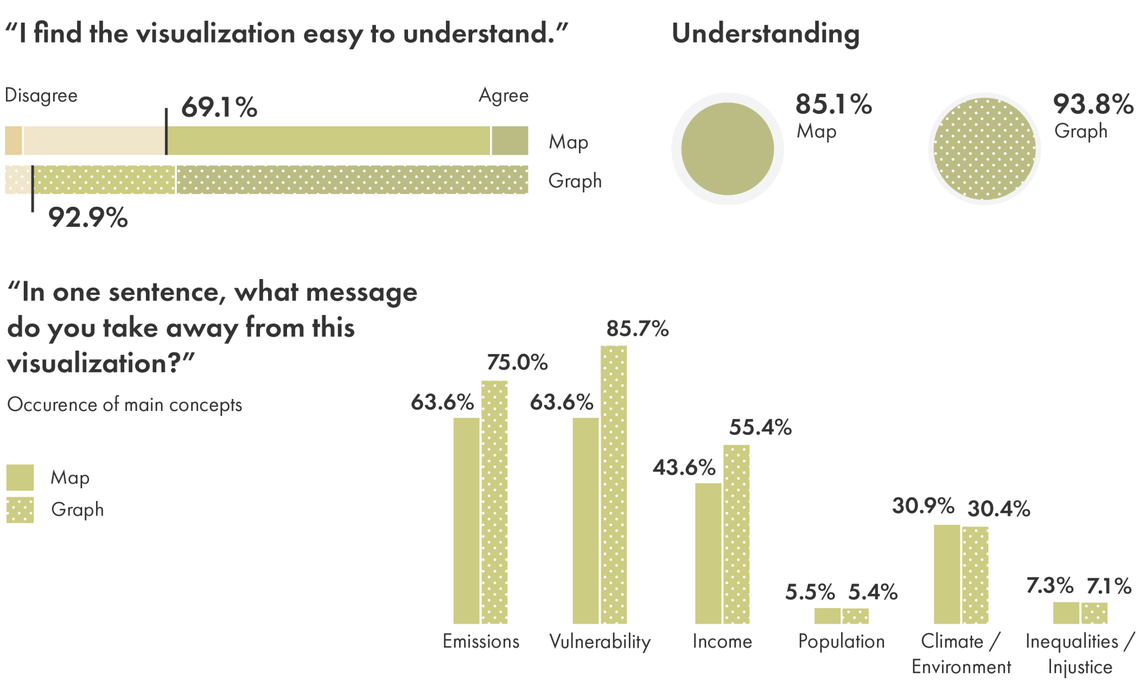


*Figure 2 – Selected results of the surveys*

## Results

All the results showed either equal success between the visualizations or a significant advantage for the graph (Fig. 2). Here are the three main findings.

1. The map imitation is more difficult to understand and leads to more errors than the graph
2. The message retained depends on the visualization type
3. The relief is superfluous and confusing

A graph seems to be a better way to represent data than a map imitation.

## Conclusion

Future research is encouraged. Other map imitations should be produced and tested, while additional approaches should be used, such as interviews and eye-tracking methods.

Map imitation is an ongoing area of research which has not reached its full potential yet, and scholars are invited to join in this exploration.


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## References


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